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**Department of Defense
Fiscal Year (FY) 2013 President's Budget Submission**

February 2012



Missile Defense Agency

Justification Book Volume 2a

Research, Development, Test & Evaluation, Defense-Wide

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Missile Defense Agency • President's Budget Submission FY 2013 • RDT&E Program

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Introduction & Explanation of Contents

The Department of Defense FY2013 President's Budget RDT&E, 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 book as listed below.

Volume 2a

- R-1 Comptroller Exhibit
- MDA FY 2013 Budget Estimate Overview
- MDA Appropriation Summary
- Acronyms
- Congressional Reporting Requirements
- Program Assessment Rating Tool (PART) Submission
- RDT&E Exhibits in BA-03, BA-04, and BA-06

Volume 2b

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

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Defense-Wide
 FY 2013 President's Budget
 Exhibit R-1 FY 2013 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

26 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	S e c
29	0603175C	Ballistic Missile Defense Technology	03	92,617	74,920		74,920	U
33	0603274C	Special Program - MDA Technology	03		61,371		61,371	U
64	0603901C	Directed Energy Research	03	126,096	49,943		49,943	U
65	0603902C	Next Generation Aegis Missile	03		13,443		13,443	U
		Advanced Technology Development (ATD)		218,713	199,677		199,677	
79	0603881C	Ballistic Missile Defense Terminal Defense Segment	04	420,839	290,076		290,076	U
80	0603882C	Ballistic Missile Defense Midcourse Defense Segment	04	1,245,489	1,159,456		1,159,456	U
82	0603884C	Ballistic Missile Defense Sensors	04	389,259	222,075		222,075	U
83	0603888C	Ballistic Missile Defense Test & Targets	04	999,068	85,569		85,569	U
84	0603890C	BMD Enabling Programs	04	401,113	415,048		415,048	U
85	0603891C	Special Programs - MDA	04	228,450	296,145		296,145	U
86	0603892C	AEGIS BMD	04	1,530,767	988,928		988,928	U
87	0603893C	Space Tracking & Surveillance System	04	105,580	96,232		96,232	U
88	0603895C	Ballistic Missile Defense System Space Programs	04	10,569	7,940		7,940	U
89	0603896C	Ballistic Missile Defense Command and Control, Battle Management & Communication	04	454,440	363,640		363,640	U
90	0603898C	Ballistic Missile Defense Joint Warfighter Support	04	55,351	41,174		41,174	U
91	0603904C	Missile Defense Integration & Operations Center (MDIOC)	04	83,112	69,249		69,249	U
92	0603906C	Regarding Trench	04	7,520	15,775		15,775	U
93	0603907C	Sea Based X-Band Radar (SBX)	04	151,032	176,831		176,831	U
94	0603913C	Israeli Cooperative Programs	04	209,048	235,700		235,700	U
95	0603914C	Ballistic Missile Defense Test	04		487,699		487,699	U

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Defense-Wide
 FY 2013 President's Budget
 Exhibit R-1 FY 2013 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

26 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Sec
29	0603175C	Ballistic Missile Defense Technology	03	79,975		79,975	U
33	0603274C	Special Program - MDA Technology	03	36,685		36,685	U
64	0603901C	Directed Energy Research	03	46,944		46,944	U
65	0603902C	Next Generation Aegis Missile	03	224,077		224,077	U
		Advanced Technology Development (ATD)		387,681		387,681	
79	0603881C	Ballistic Missile Defense Terminal Defense Segment	04	316,929		316,929	U
80	0603882C	Ballistic Missile Defense Midcourse Defense Segment	04	903,172		903,172	U
82	0603884C	Ballistic Missile Defense Sensors	04	347,012		347,012	U
83	0603888C	Ballistic Missile Defense Test & Targets	04				U
84	0603890C	BMD Enabling Programs	04	362,711		362,711	U
85	0603891C	Special Programs - MDA	04	272,387		272,387	U
86	0603892C	AEGIS BMD	04	992,407		992,407	U
87	0603893C	Space Tracking & Surveillance System	04	51,313		51,313	U
88	0603895C	Ballistic Missile Defense System Space Programs	04	6,912		6,912	U
89	0603896C	Ballistic Missile Defense Command and Control, Battle Management & Communication	04	366,552		366,552	U
90	0603898C	Ballistic Missile Defense Joint Warfighter Support	04	55,550		55,550	U
91	0603904C	Missile Defense Integration & Operations Center (MDIOC)	04	63,043		63,043	U
92	0603906C	Regarding Trench	04	11,371		11,371	U
93	0603907C	Sea Based X-Band Radar (SBX)	04	9,730		9,730	U
94	0603913C	Israeli Cooperative Programs	04	99,836		99,836	U
95	0603914C	Ballistic Missile Defense Test	04	454,400		454,400	U

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Defense-Wide
FY 2013 President's Budget
Exhibit R-1 FY 2013 President's Budget
Total Obligational Authority
(Dollars in Thousands)

26 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2011 Actuals	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Section
96	0603915C	Ballistic Missile Defense Targets	04		454,357		454,357	U
107	0604880C	Land-Based SM-3 (LBSM3)	04	286,142	306,185		306,185	U
108	0604881C	AEGIS SM-3 Block IIA Co-Development	04	299,767	473,843		473,843	U
109	0604883C	Precision Tracking Space Sensor RDT&E	04	36,693	80,723		80,723	U
110	0604884C	Airborne Infrared (ABIR)	04	71,550				U
111	0604886C	Advanced Remote Sensor Technology (ARST)	04					U
		Advanced Component Development & Prototypes		6,985,789	6,266,645		6,266,645	
154	0605502C	Small Business Innovative Research - MDA	06	113,234				U
181	0901585C	Pentagon Reservation	06	20,378				U
182	0901598C	Management HQ - MDA	06	28,472	28,908		28,908	U
		RDT&E Management Support		162,084	28,908		28,908	
Total Research, Development, Test & Eval, DW				7,366,586	6,495,230		6,495,230	

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Defense-Wide
 FY 2013 President's Budget
 Exhibit R-1 FY 2013 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

26 Jan 2012

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

Line No	Program Element Number	Item	Act	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Sec
96	0603915C	Ballistic Missile Defense Targets	04	435,747		435,747	U
107	0604880C	Land-Based SM-3 (LBSM3)	04	276,338		276,338	U
108	0604881C	AEGIS SM-3 Block IIA Co-Development	04	420,630		420,630	U
109	0604883C	Precision Tracking Space Sensor RDT&E	04	297,375		297,375	U
110	0604884C	Airborne Infrared (ABIR)	04				U
111	0604886C	Advanced Remote Sensor Technology (ARST)	04	58,742		58,742	U
		Advanced Component Development & Prototypes		5,802,157		5,802,157	
154	0605502C	Small Business Innovative Research - MDA	06				U
181	0901585C	Pentagon Reservation	06				U
182	0901598C	Management HQ - MDA	06	34,855		34,855	U
		RDT&E Management Support		34,855		34,855	
Total Research, Development, Test & Eval, DW				6,224,693		6,224,693	

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Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

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29	03	0603175C	Ballistic Missile Defense Technology.....	Volume 2a - 1
33	03	0603274C	Special Program - MDA Technology.....	Volume 2a - 13
64	03	0603901C	Directed Energy Research.....	Volume 2a - 15
65	03	0603902C	Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB)).....	Volume 2a - 23

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)
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79	04	0603881C	Ballistic Missile Defense Terminal Defense Segment.....	Volume 2a - 31
80	04	0603882C	Ballistic Missile Defense Midcourse Defense Segment.....	Volume 2a - 71
82	04	0603884C	Ballistic Missile Defense Sensors.....	Volume 2a - 113
83	04	0603888C	Ballistic Missile Defense Test & Targets.....	Volume 2a - 147
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Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
85	04	0603891C	Special Programs - MDA.....	Volume 2a - 361
86	04	0603892C	AEGIS BMD.....	Volume 2a - 365
87	04	0603893C	Space Tracking & Surveillance System.....	Volume 2a - 423
88	04	0603895C	Ballistic Missile Defense System Space Programs.....	Volume 2a - 455
89	04	0603896C	Ballistic Missile Defense Command and Control, Battle Management & Communication.....	Volume 2a - 479
90	04	0603898C	Ballistic Missile Defense Joint Warfighter Support.....	Volume 2a - 525
91	04	0603904C	Missile Defense Integration & Operations Center (MDIOC).....	Volume 2a - 581
92	04	0603906C	Regarding Trench.....	Volume 2a - 629
93	04	0603907C	Sea Based X-Band Radar (SBX).....	Volume 2a - 633
94	04	0603913C	Israeli Cooperative Programs.....	Volume 2a - 655
95	04	0603914C	Ballistic Missile Defense Test.....	Volume 2a - 679
96	04	0603915C	Ballistic Missile Defense Targets.....	Volume 2a - 707
107	04	0604880C	Land Based SM-3 (LBSM3).....	Volume 2a - 739
108	04	0604881C	AEGIS SM-3 Block IIA Co-Development.....	Volume 2a - 759
109	04	0604883C	Precision Tracking Space System.....	Volume 2a - 779
110	04	0604884C	Airborne Infrared (ABIR).....	Volume 2a - 795
111	04	0604886C	Advanced Remote Sensor Technology (ARST).....	Volume 2a - 805

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Budget Activity 06: RDT&E Management Support
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154	06	0605502C	Small Business Innovative Research - MDA.....	Volume 2a - 815
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Airborne Infrared (ABIR)	0604884C	110	04.....	Volume 2a - 795
BMD Enabling Programs	0603890C	84	04.....	Volume 2a - 185
Ballistic Missile Defense Test & Targets	0603888C	83	04.....	Volume 2a - 147
Ballistic Missile Defense Command and Control, Battle Management & Communication	0603896C	89	04.....	Volume 2a - 479
Ballistic Missile Defense Joint Warfighter Support	0603898C	90	04.....	Volume 2a - 525
Ballistic Missile Defense Midcourse Defense Segment	0603882C	80	04.....	Volume 2a - 71
Ballistic Missile Defense Sensors	0603884C	82	04.....	Volume 2a - 113
Ballistic Missile Defense System Space Programs	0603895C	88	04.....	Volume 2a - 455
Ballistic Missile Defense Targets	0603915C	96	04.....	Volume 2a - 707
Ballistic Missile Defense Technology	0603175C	29	03.....	Volume 2a - 1
Ballistic Missile Defense Terminal Defense Segment	0603881C	79	04.....	Volume 2a - 31
Ballistic Missile Defense Test	0603914C	95	04.....	Volume 2a - 679
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Land Based SM-3 (LBSM3)	0604880C	107	04.....	Volume 2a - 739
Management HQ - MDA	0901598C	182	06.....	Volume 2a - 825
Missile Defense Integration & Operations Center (MDIOC)	0603904C	91	04.....	Volume 2a - 581
Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	0603902C	65	03.....	Volume 2a - 23
Pentagon Reservation	0901585C	181	06.....	Volume 2a - 821
Precision Tracking Space System	0604883C	109	04.....	Volume 2a - 779
Regarding Trench	0603906C	92	04.....	Volume 2a - 629
Sea Based X-Band Radar (SBX)	0603907C	93	04.....	Volume 2a - 633
Small Business Innovative Research - MDA	0605502C	154	06.....	Volume 2a - 815
Space Tracking & Surveillance System	0603893C	87	04.....	Volume 2a - 423
Special Program - MDA Technology	0603274C	33	03.....	Volume 2a - 13
Special Programs - MDA	0603891C	85	04.....	Volume 2a - 361

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Missile Defense Agency

Fiscal Year (FY) 2013

Budget Estimates

Overview



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12-MDA-6518 (12 JAN 2012)**

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MISSILE DEFENSE

The FY 2013 budget protects funding for development and deployment of missile defense capabilities that support the Administrations priorities, including maintaining and improving protection of the U.S. homeland, and strengthening regional missile defenses to protect deployed forces, allies, and friends.

This budget includes funding to maintain and improve homeland missile defense capabilities currently on alert at sites in Fort Greely, Alaska, and Vandenberg Air Force Base, California. Our highest priority is to successfully return the Ground-based Midcourse Defense program to flight testing with a successful intercept in FY 2012. Additionally, we will procure additional ground-based interceptors (GBIs) for enhanced GMD testing for a total of 57. We will focus on GBI enhancements for reliability and aging testing.

The February 2010 *Ballistic Missile Defense Review* established that we will pursue a phased adaptive approach (PAA) for regional missile defense that is tailored to the threats unique to each region as well as the capabilities available to address the threat. The first adaptation of PAA was the European PAA (EPAA), which is designed to protect NATO allies and forces against the increasing threats posed by the proliferation of ballistic missiles. The Department met its commitment for EPAA Phase 1 by deploying Aegis BMD ships and a land-based radar in Europe by the end of 2011. Deliveries in the next three EPAA phases include:

- Aegis Ashore in Romania with SM-3 IB interceptors in the 2015 timeframe (Phase 2),
- Aegis Ashore in Poland with SM-3 IIA interceptors in the 2018 timeframe (Phase 3), and
- SM-3 IIB interceptors and early intercept capability in the 2020 timeframe (Phase 4)

The United States will also pursue phased adaptive approaches in the Asia Pacific and the Middle East by building on current efforts. The budget continues to align capabilities and programs to develop and deploy missile defenses using a phased adaptive approach and includes support for: procurement and delivery of additional SM-3 IB and THAAD interceptors; construction of an Aegis Ashore test facility at the Pacific Missile Range Facility by 2014 and an Aegis Ashore battery in Romania by 2015; operation and sustainment of Command, Control, Battle Management, and Communications at fielded sites; continued co-development with Japan of the SM-3 IIA interceptor; and design and engineering work for the Precision Tracking Space System.

Working collaboratively with independent testers and the Services, the Missile Defense Agency follows an Integrated Master Test Plan and continues a robust, cost-effective flight test program using operationally realistic conditions to demonstrate BMD capabilities against current and emerging threats. The Department is also pursuing future missile defenses adaptable to uncertainties in ballistic missile threat intelligence estimates. We have major technology development programs to enhance protection of the United States from limited ICBM attacks with the SM-3 IIB interceptor and advanced remote sensor research.

The FY 2013 missile defense budget balances capabilities and risks to deter aggression, protects U.S. and allied interests, responds to current warfighter requirements, and pursues cost- and operationally-effective capabilities to hedge against future threats. To advance the Administration's BMD priorities, the FY 2013 budget includes \$9.7 billion for BMD programs- including \$7.8 billion for the Missile Defense Agency.

**Missile Defense Agency
Fiscal Year 2013-2017 President's Budget
FY 2013 through FY 2017 Appropriation Summary
(\$ Thousands)**

Line Number	Program Element	Budget Project	Program	Budget Activity	FY11 Actual	FY12	FY13	FY14	FY15	FY16	FY17	FY13-FY17
Operations and Maintenance												
011A	0208866C		O&M	NA	0	202,342	259,975	297,549	330,851	338,460	350,522	1,577,357
		MD07	THAAD	NA	0	50,405	55,679	77,932	84,550	83,745	97,242	399,148
		MD09	AEGIS	NA	0	0	12,163	7,457	11,361	5,404	5,853	42,238
		MD11	BMDS AN/TPY-2 Radars	NA	0	151,937	192,133	212,160	234,940	249,311	247,427	1,135,971
Budget Activity NA Total				NA	0	202,342	259,975	297,549	330,851	338,460	350,522	1,577,357
Operations and Maintenance Total				NA	0	202,342	259,975	297,549	330,851	338,460	350,522	1,577,357
Procurement												
NA	0208866C		PROCUREMENT	NA	866,909	1,654,738	1,077,775	1,419,369	1,620,623	1,362,693	1,533,769	7,014,229
30		MD07	THAAD	NA	583,629	709,150	460,728	565,938	447,427	490,197	463,739	2,428,029
31		MD09	Aegis BMD	NA	283,280	565,393	389,626	757,031	834,349	775,736	1,002,957	3,759,699
32		MD11	BMDS AN/TPY-2 Radars	NA	0	380,195	217,244	0	38,648	0	0	255,892
33		MD77	Radar Spares	NA	0	0	10,177	0	0	0	0	10,177
		MD73	Aegis Ashore Phase III	NA	0	0	0	86,400	290,199	50,400	20,600	447,599
		MD78	Aegis Spares	NA	0	0	0	10,000	10,000	46,360	46,473	112,833
34	11070000		Iron Dome	NA	203,868	0	0	0	0	0	0	0
		MD83	Iron Dome	NA	203,868	0	0	0	0	0	0	0
Budget Activity NA Total				NA	1,070,777	1,654,738	1,077,775	1,419,369	1,620,623	1,362,693	1,533,769	7,014,229
Procurement Total				NA	1,070,777	1,654,738	1,077,775	1,419,369	1,620,623	1,362,693	1,533,769	7,014,229
RDT&E												
29	0603175C		Ballistic Missile Defense Technology	03	92,617	74,920	79,975	81,388	115,427	133,742	136,654	547,186
		MD25	Advanced Technology	03	86,979	72,235	76,005	77,367	109,876	127,229	129,805	520,282
		MD40	Program Wide Support	03	5,638	2,685	3,970	4,021	5,551	6,513	6,849	26,904
33	0603274C		Special Program - MDA Technology	03	0	61,371	36,685	39,736	42,726	46,310	47,213	212,670
		MD81	Special Programs - MDA Technology	03	0	61,371	36,685	39,736	42,726	46,310	47,213	212,670
64	0603901C		Directed Energy Research	03	126,096	49,943	46,944	47,865	47,357	52,519	54,513	249,198
		MD69	Directed Energy Research	03	122,806	46,257	44,560	45,450	45,045	49,929	51,748	236,732
		MD40	Program-Wide Support	03	3,290	3,686	2,384	2,415	2,312	2,590	2,765	12,466
65	0603902C		Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	03	0	13,443	224,077	295,248	455,373	508,356	430,239	1,913,293
		MD70	Standard Missile-3 Block IIB (SM-3 IIB)	03	0	8,876	212,704	280,367	433,177	483,324	408,451	1,818,023
		MD40	Program-Wide Support	03	0	4,567	11,373	14,881	22,196	25,032	21,788	95,270
Budget Activity 03 Total				03	218,713	199,677	387,681	464,237	660,883	740,927	668,619	2,922,347

Line Number	Program Element	Budget Project	Program	Budget Activity	FY11 Actual	FY12	FY13	FY14	FY15	FY16	FY17	FY13-FY17
79	0603881C		Ballistic Missile Defense Terminal Defense Segment	04	420,839	290,076	316,929	313,212	338,353	249,475	279,758	1,497,727
		MD07	THAAD	04	398,748	276,291	229,869	218,373	250,200	198,752	192,538	1,089,732
		MT07	THAAD Test	04	0	0	70,928	78,573	70,546	37,201	71,791	329,039
		MD06	Patriot Advanced Capability-3 (PAC-3)	04	1,128	1,230	1,145	1,103	1,121	1,236	1,260	5,865
		MD40	Program-Wide Support	04	20,963	12,555	14,987	15,163	16,486	12,286	14,169	73,091
80	0603882C		Ballistic Missile Defense Midcourse Defense Segment	04	1,245,489	1,159,456	903,172	914,603	954,069	948,650	862,884	4,583,378
		MD08	Ground Based Midcourse	04	1,194,267	1,111,226	569,622	531,906	567,019	542,809	458,062	2,669,418
		MT08	Ground Based Midcourse Test	04	0	0	80,381	131,304	132,956	142,869	143,823	631,333
		MX08	Ground Based Midcourse Development Support	04	0	0	207,133	205,210	207,563	216,272	217,317	1,053,495
		MD40	Program-Wide Support	04	51,222	48,230	46,036	46,183	46,531	46,700	43,682	229,132
82	0603884C		Ballistic Missile Defense Sensors	04	389,259	222,075	347,012	327,342	362,520	341,780	326,095	1,704,749
		MD11	BMD Radars	04	374,436	211,682	257,656	225,300	240,853	248,890	225,505	1,198,204
		MT11	BMD Radars Test	04	0	0	72,388	85,892	103,909	76,015	84,058	422,262
		MD40	Program-Wide Support	04	14,823	10,393	16,968	16,150	17,758	16,875	16,532	84,283
83	0603888C		Ballistic Missile Defense Test & Targets	04	999,068	85,569	0	0	0	0	0	0
		MD04	Test Program	04	419,722	0	0	0	0	0	0	0
		MD05	Targets Program	04	545,209	85,569	0	0	0	0	0	0
		MD40	Program-Wide Support	04	34,137	0	0	0	0	0	0	0
84	0603890C		BMD Enabling Programs	04	401,113	415,048	362,711	339,197	373,346	395,350	394,085	1,864,689
		MD24	System Engineering & Integration	04	139,703	133,890	88,315	90,534	95,782	99,527	99,369	473,527
		MT23	Enabling - Test	04	0	0	32,386	28,277	52,276	44,979	39,393	197,311
		MD28	Intelligence & Security	04	10,514	18,382	36,886	35,651	37,712	39,579	40,000	189,828
		MD29	Producibility & Manufacturing Technology	04	30,565	0	0	0	0	0	0	0
		MD30	BMD Information Management Systems	04	105,904	116,508	107,744	92,425	100,250	107,469	109,657	517,545
		MD31	Modeling & Simulation	04	61,456	56,617	46,608	45,402	38,740	51,280	52,393	234,423
		MD32	Quality, Safety, and Mission Assurance	04	27,476	33,045	34,388	31,454	32,477	35,097	35,254	168,670
		MD40	Program-Wide Support	04	25,495	56,606	16,384	15,454	16,109	17,419	18,019	83,385
85	0603891C		Special Programs - MDA	04	228,450	296,145	272,387	321,450	345,263	354,503	348,602	1,642,205
		MD27	Special Programs	04	228,450	296,145	272,387	321,450	345,263	354,503	348,602	1,642,205
86	0603892C		AEGIS BMD	04	1,530,767	988,928	992,407	960,870	950,097	1,030,201	958,680	4,892,255
		MD09	Aegis BMD	04	1,474,296	935,029	775,978	743,982	723,618	797,184	651,653	3,692,415
		MT09	Aegis BMD Test	04	0	0	150,291	138,573	134,996	106,871	134,241	664,972
		MX09	Aegis BMD Development Support	04	0	12,600	15,588	24,262	39,716	70,331	118,990	268,887
		MD40	Program-Wide Support	04	56,471	41,299	50,550	54,053	51,767	55,815	53,796	265,981
87	0603893C		Space Tracking & Surveillance System	04	105,580	96,232	51,313	45,355	32,423	34,195	35,087	198,373
		MD12	Space Tracking and Surveillance System (STSS)	04	101,744	91,957	48,708	43,067	30,839	32,507	33,306	188,427
		MD40	Program-Wide Support	04	3,836	4,275	2,605	2,288	1,584	1,688	1,781	9,946
88	0603895C		Ballistic Missile Defense System Space Programs	04	10,569	7,940	6,912	6,576	6,610	7,219	7,371	34,688
		MD33	MD Space Exp Center (MDSEC)	04	10,162	7,940	6,561	6,244	6,286	6,862	6,996	32,949
		MD40	Program-Wide Support	04	407	0	351	332	324	357	375	1,739

Line Number	Program Element	Budget Project	Program	Budget Activity	FY11 Actual	FY12	FY13	FY14	FY15	FY16	FY17	FY13-FY17
89	0603896C		Ballistic Missile Defense Command and Control, Battle Management & Communication	04	454,440	363,640	366,552	376,116	383,055	358,431	364,725	1,848,879
		MD01	Command & Control, Battle Management, Communications (C2BMC)	04	439,876	285,993	194,367	215,166	199,753	185,137	195,760	990,183
		MT01	C2BMC Test	04	0	0	59,189	53,874	59,433	56,766	49,689	278,951
		MX01	Command & Control, Battle Management, Communications (C2BMC) Development Support	04	0	62,725	94,394	88,115	105,185	98,861	100,788	487,343
		MD40	Program-Wide Support	04	14,564	14,922	18,602	18,961	18,684	17,667	18,488	92,402
90	0603898C		Ballistic Missile Defense Joint Warfighter Support	04	55,351	41,174	55,550	53,139	53,718	59,291	60,540	282,238
		MD03	Joint Warfighter Support	04	52,986	39,484	52,765	50,501	51,145	56,419	57,522	268,352
		MD40	Program-Wide Support	04	2,365	1,690	2,785	2,638	2,573	2,872	3,018	13,886
91	0603904C		Missile Defense Integration & Operations Center (MDIOC)	04	83,112	69,249	63,043	54,299	55,409	54,693	55,844	283,288
		MD22	Missile Defense Integration and Operations Center (MDIOC)	04	80,116	66,408	59,842	51,558	52,702	51,993	53,009	269,104
		MD40	Program-Wide Support	04	2,996	2,841	3,201	2,741	2,707	2,700	2,835	14,184
92	0603906C		Regarding Trench	04	7,520	15,775	11,371	10,369	5,050	1,769	1,809	30,368
		MD35	Regarding Trench	04	7,520	15,775	11,371	10,369	5,050	1,769	1,809	30,368
93	0603907C		Sea Based X-Band Radar (SBX)	04	151,032	176,831	9,730	9,725	9,739	9,725	9,728	48,647
		MD46	Sea Based X-Band Radar (SBX) Development	04	151,032	22,775	0	0	0	0	0	0
		MX46	Sea Based X-Band Radar Development Support	04	0	146,800	9,236	9,235	9,264	9,246	9,236	46,217
		MD40	Program-Wide Support	04	0	7,256	494	490	475	479	492	2,430
94	0603913C		Israeli Cooperative Programs	04	209,048	235,700	99,836	95,782	96,803	103,940	106,020	502,381
		MD20	Israeli Upper Tier	04	58,667	66,220	50,892	52,607	54,368	55,660	56,773	270,300
		MD26	Israeli ARROW Program	04	66,089	58,955	10,665	10,663	10,701	11,142	11,365	54,536
		MD34	Short Range Ballistic Missile Defense (SRBMD)	04	84,292	110,525	38,279	32,512	31,734	37,138	37,882	177,545
95	0603914C		Ballistic Missile Defense Test	04	0	487,699	454,400	420,357	446,542	373,395	421,632	2,116,326
		MT04	BMD Test Program	04	0	455,310	431,847	402,236	428,299	358,786	404,119	2,025,287
		MX04	BMD Test Development Support	04	0	32,389	0	0	0	0	0	0
		MD40	Program Wide Support	04	0	0	22,553	18,121	18,243	14,609	17,513	91,039
96	0603915C		Ballistic Missile Defense Targets	04	0	454,357	435,747	475,175	505,591	406,931	485,950	2,309,394
		MT05	BMD Targets Program	04	0	454,357	414,696	451,206	480,916	386,854	461,303	2,194,975
		MD40	Program Wide Support	04	0	0	21,051	23,969	24,675	20,077	24,647	114,419
107	0604880C		Land Based SM-3 (LBSM3)	04	286,142	306,185	276,338	127,235	113,677	47,718	56,193	621,161
		MD68	AEGIS Ashore	04	286,142	295,101	245,211	120,817	85,628	45,358	53,337	550,351
		MT68	Aegis Ashore Test	04	0	0	17,100	0	22,500	0	0	39,600
		MD40	Program-Wide Support	04	0	11,084	14,027	6,418	5,549	2,360	2,856	31,210
108	0604881C		AEGIS SM-3 Block IIA Co-Development	04	299,767	473,843	420,630	273,926	200,699	185,007	46,103	1,126,365
		MD09	SM-3 Block IIA Co-Development	04	299,767	456,889	399,284	256,696	183,161	145,335	33,315	1,017,791
		MT09	SM-3 Block IIA Co-Development Test	04	0	0	0	3,428	7,759	30,565	10,454	52,206
		MD40	Program-Wide Support	04	0	16,954	21,346	13,802	9,779	9,107	2,334	56,368

Line Number	Program Element	Budget Project	Program	Budget Activity	FY11 Actual	FY12	FY13	FY14	FY15	FY16	FY17	FY13-FY17
109	0604883C		Precision Tracking Space System	04	36,693	80,723	297,375	267,505	285,529	326,073	354,190	1,530,672
		MD10	Precision Tracking Space System (PTSS)	04	35,630	74,132	282,283	256,544	277,704	308,787	328,663	1,453,981
		MD40	Program-Wide Support	04	1,063	6,591	15,092	10,961	7,825	17,286	25,527	76,691
110	0604884C		Airborne Infrared (ABIR)	04	71,550	0	0	0	0	0	0	0
		MD67	Airborne Infrared (ABIR)	04	71,550	0	0	0	0	0	0	0
111	0604886C		Advanced Remote Sensor Technology (ARST)	04	0	0	58,742	35,159	18,899	18,884	18,883	150,567
		MD95	Advanced Remote Sensor Technology	04	0	0	55,760	33,384	18,899	18,884	18,883	145,810
		MD40	Program-Wide Support	04	0	0	2,982	1,775	0	0	0	4,757
Budget Activity 04 Total				04	6,985,789	6,266,645	5,802,157	5,427,392	5,537,392	5,307,230	5,194,179	27,268,350
154	0605502C		Small Business Innovative Research - MDA	06	113,234	0	0	0	0	0	0	0
		MD45	Small Business Innovative Research	06	113,234	0	0	0	0	0	0	0
181	0901585C		Pentagon Reservation	06	20,378	0	0	0	0	0	0	0
		MD42	Pentagon Reservation Maintenance Reserve Fund (PRMRF)	06	20,378	0	0	0	0	0	0	0
182	0901598C		Management HQ - MDA	06	28,472	28,908	34,855	25,473	30,838	31,482	32,798	155,446
		MD38	Management Headquarters	06	28,472	28,908	34,855	25,473	30,838	31,482	32,798	155,446
Budget Activity 06 Total				06	162,084	28,908	34,855	25,473	30,838	31,482	32,798	155,446
RDT&E Total				06	7,366,586	6,495,230	6,224,693	5,917,102	6,229,113	6,079,639	5,895,596	30,346,143
MILCON												
			Major MILCON		0	58,800	183,800	14,500	0	144,452	0	342,752
			Von Braun Complex Phase IV, Redstone, AL		0	58,800	0	0	0	0	0	0
			IFFICS Data Terminal Cmplx, Ft. Drum, NY		0	0	25,900	0	0	0	0	25,900
			Aegis Ashore Missile Def Sys Cmplx, Romania		0	0	157,900	0	0	0	0	157,900
			UEWR Upgrade, Clear AFS, AK		0	0	0	14,500	0	0	0	14,500
			Aegis Ashore Missile Def Sys Cmplx, HN2		0	0	0	0	0	144,452	0	144,452
			Minor MILCON		0	0	0	2,000	3,501	3,763	3,838	13,102
					0	0	0	2,000	3,501	3,763	3,838	13,102
			Planning and Design		0	8,368	4,548	7,806	7,324	6,346	6,616	32,640
					0	8,368	4,548	7,806	7,324	6,346	6,616	32,640
MILCON Total					0	67,168	188,348	24,306	10,825	154,561	10,454	388,494
BRAC												
	0207998C		BRAC	NA	8,679	0	0	0	0	0	0	0
		MD36	Base Realignment and Closure (BRAC)	NA	8,679	0	0	0	0	0	0	0
Budget Activity NA Total				NA	8,679	0	0	0	0	0	0	0
BRAC Total				NA	8,679	0	0	0	0	0	0	0
PROGRAM TOTAL					8,446,042	8,419,478	7,750,791	7,658,326	8,191,412	7,935,353	7,790,341	39,326,223

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Reporting Requirement Reference	Reporting Requirement Language	Budget Documentation
<p>Sec 231 of the FY12 National Defense Authorization Act (S 1867, p. 53-54, TITLE II – Subtitle C</p>	<p>SEC. 231. ACQUISITION ACCOUNTABILITY REPORTS ON THE BALLISTIC MISSILE DEFENSE SYSTEM.</p> <p>(a) BASELINE REQUIRED.—</p> <p>(1) IN GENERAL.—Chapter 9 of title 10, United States Code, is amended by inserting after section 224 the following new section:</p> <p>“§ 225. Acquisition accountability reports on the ballistic missile defense system</p> <p>“(a) BASELINES REQUIRED.—(1) In accordance with paragraph (2), the Director of the Missile Defense Agency shall establish and maintain an acquisition baseline for—</p> <p>“(A) each program element of the ballistic missile defense system, as specified in section 223 of this title; and</p> <p>“(B) each designated major subprogram of such program elements.</p> <p>“(2) The Director shall establish an acquisition baseline required by paragraph (1) before the date on which the program element or major subprogram enters—</p> <p>“(A) engineering and manufacturing development; and</p> <p>“(B) production and deployment.</p> <p>“(3) Except as provided by subsection (d), the Director may not adjust or revise an acquisition baseline established under this section.</p> <p>“(b) ELEMENTS OF BASELINES.—Each acquisition baseline required by subsection (a) for a program element or major subprogram shall include the following:</p> <p>“(1) A comprehensive schedule, including—</p> <p>“(A) research and development milestones;</p> <p>“(B) acquisition milestones, including design reviews and key decision points;</p> <p>“(C) key test events, including ground and flight tests and ballistic missile defense system tests;</p> <p>“(D) delivery and fielding schedules;</p> <p>“(E) quantities of assets planned for acquisition and delivery in total and by fiscal year; and</p> <p>“(F) Planned contract award dates.</p> <p>“(2) A detailed technical description of—</p> <p>“(A) the capability to be developed, including hardware and software;</p> <p>“(B) system requirements, including performance requirements;</p> <p>“(C) how the proposed capability satisfies a capability identified by the commanders of the combatant commands on a prioritized capabilities list;</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

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“(D) key knowledge points that must be achieved to permit continuation of the program and to inform production and deployment decisions; and

“(E) how the Director plans to improve the capability over time.

“(3) A cost estimate, including—

“(A) a life-cycle cost estimate that separately identifies the costs regarding research and development, procurement, military construction, operations and sustainment, and disposal;

“(B) program acquisition unit costs for the program element;

“(C) average procurement unit costs and program acquisition costs for the program element; and

“(D) an identification of when the document regarding the program joint cost analysis requirements description is scheduled to be approved.

“(4) A test baseline summarizing the comprehensive test program for the program element or major subprogram outlined in the integrated master test plan.

“(c) ANNUAL REPORTS ON ACQUISITION BASELINES.—

“(1) Not later than February 15 of each year, the Director shall submit to the congressional defense committees a report on the acquisition baselines required by subsection (a).

“(2)(A) The first report under paragraph (1) shall set forth each acquisition baseline required by subsection (a) for a program element or major subprogram.

“(3) Each subsequent report under paragraph (1) shall include—

“(i) any new acquisition baselines required by subsection (a) for a program element or major subprogram; and

“(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—

“(I) the initial acquisition baseline for such program element or major subprogram; and

“(II) the acquisition baseline for such program element or major subprogram that was submitted in the report during the previous year.

“(3) Each report under this subsection shall be submitted in unclassified form, but may include a classified annex.

“(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—

“(1) a justification for such adjustment or revision;

“(2) the specific adjustments or revisions made to the acquisition baseline, including to

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	<p>the elements described in subsection (b); and “(3) the effective date of the adjusted or revised acquisition baseline.”. (2) CLERICAL AMENDMENT.—The table of sections at the beginning of such chapter is amended by adding at the end the following new item: “225. Acquisition accountability reports on the ballistic missile defense system.”. (b) CONFORMING AMENDMENTS.— (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. (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). (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, p. 236, Missile Defense Agency (MDA)</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 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>MDA has included details for budget and prior years throughout budget documentation.</p> <p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p>FY12 National Defense Authorization Act, Report Language –</p>	<p>(Sec. 231) The committee recommends a provision that would amend section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111–383) to require the Comptroller General to review, for fiscal years 2012 through 2015, the annual reports of the Missile</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense</p>

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<p>Senate Report 112-26, p. 38-39, Subtitle C – Missile Defense Matters</p>	<p>Defense Agency (MDA) on acquisition baselines and variances and assess the extent to which MDA has achieved its acquisition goals and objectives. The provision would also require the Comptroller General to report to the congressional defense committees on such assessment, and provide any findings and recommendations on missile defense acquisition programs that the Comptroller General considers appropriate. The provision would also provide a 3-year sunset for reports required on activities of the Missile Defense Executive Board. The committee notes that the Government Accountability Office (GAO) has played an instrumental role over many years in the oversight of missile defense acquisition programs, and in helping improve the oversight and accountability of such programs. Section 225 established the requirement for MDA acquisition baselines and annual reports on those baselines and variances. The existing legislative mandate for GAO’s review of missile defense acquisition programs originated in fiscal year 2002, and is now out of date with the new MDA acquisition baseline process. The committee believes it is important for GAO to review and report on the new process.</p>	<p>Committees. The BAR fully satisfies the requirement.</p>
<p>FY12 National Defense Authorization Act, Report Language Title II – RDT&E Subtitle C – Missile Defense Programs – House Report 112-78, p. 93-94</p>	<p>Section 231—Acquisition Accountability Reports on the Ballistic Missile Defense System This section would amend chapter 9 of title 10, United States Code, by adding a new section 225 that would require the Secretary of Defense to establish and maintain an acquisition baseline for each program element and designated subprogram element of the ballistic missile defense system before the program or subprogram enters engineering and manufacturing development, and production and deployment.</p> <p>This section would incorporate and expand upon annual reporting requirements established in section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111-383), to include reporting on schedules and milestones, acquisition quantities, requirements, technical capabilities, cost estimates, and test plans. Additionally, this section would repeal section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011, section 223(g) of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181), and section 221 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107–314), to reduce duplication in missile defense reporting requirements.</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p>FY12 National Defense Authorization Act, Report Language – House Report 112-239, p. 43-44, Subtitle C Missile Defense Matters</p>	<p>SEC. 232. COMPTROLLER GENERAL REVIEW AND ASSESSMENT OF MISSILE DEFENSE ACQUISITION PROGRAMS. (a) Comptroller General Assessment-</p> <p>(1) IN GENERAL- The Comptroller General of the United States shall review the annual reports submitted under section 225(c) of title 10, United States Code, as added by section 231 of this Act, that cover any of fiscal years 2012 through 2015 and assess the extent to which the Missile Defense</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>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 Act for Fiscal Year 2002 (Public Law 107-107; 115 Stat. 1037; 10 U.S.C. 2431 note) is amended by striking subsection (g).</p>	
<p>Sec. 225 of the FY11 National Defense Authorization Act (H.R. 6523), p. 34.</p>	<p>SEC. 225. ACQUISITION ACCOUNTABILITY REPORTS ON THE BALLISTIC MISSILE DEFENSE SYSTEM.</p> <p>(a) BASELINES REQUIRED.—The Secretary of Defense shall ensure that the Missile Defense Agency establishes and maintains an acquisition baseline for each program element of the ballistic missile defense system, as specified in section 223 of title 10, United States Code.</p> <p>(b) ELEMENTS OF BASELINES.—Each acquisition baseline required by subsection (a) for a program element shall include the following:</p> <p>(1) A comprehensive schedule for the program element, including—</p> <p>(A) research and development milestones;</p> <p>(B) acquisition milestones, including design reviews and key decision points;</p> <p>(C) key test events, including ground and flight tests and ballistic missile defense system tests; and</p> <p>(D) delivery and fielding schedules.</p> <p>(2) A detailed technical description of—</p> <p>(A) the capability to be developed, including hardware and software;</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

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- (B) system 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 Missile Defense Agency plans to improve the capability over time.
- (3) A cost estimate for the program element, including—
- (A) a life cycle cost estimate;
- H. R. 6523—35
- (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 when the program joint cost analysis requirements description document is scheduled to be approved.
- (4) A test baseline summarizing the comprehensive test program for the program element outlined in the integrated master test plan.
- (c) ANNUAL REPORTS ON ACQUISITION BASELINES.—
- (1) ANNUAL REPORTS REQUIRED.—Not later than February 15, 2011, and annually thereafter, the Director of the Missile Defense Agency shall submit to the congressional defense committees a report on the acquisition baselines required by subsection (a). The first such report shall set forth the acquisition baselines, and each later report shall identify the significant changes or variances, if any, in any such baseline from any earlier report under this subsection.
 - (2) FORM.—Each report under this subsection shall be submitted in unclassified form, but may include a classified annex.
- (d) ANNUAL REPORTS ON MISSILE DEFENSE EXECUTIVE BOARD ACTIVITIES.—The Director shall include in each report under subsection
- (c) a description of the activities of the Missile Defense Executive Board during the preceding fiscal year, including the following:
 - (1) A list of each meeting of the Board during the preceding fiscal year.
 - (2) The agenda and issues considered at each such meeting.
 - (3) A description of any decisions or recommendations made by the Board at each such meeting.

Missile Defense Agency Congressional Reporting Requirements

<p>H. Rpt. 110-279, the House Appropriations Committee Report to accompany the FY 2008 Department of Defense Appropriations Act (H.R. 3222), p. 382</p>	<p>The Committee directs MDA to develop a system-wide plan to report according to the spirit of existing acquisition laws to improve accountability and transparency of its program. MDA is directed to report all elements that are effectively in System Development and Demonstration or production corresponding baselines, the results of independent cost estimates performed by the Cost Analysis Improvement Group, unit costs, and unit cost growth. This direction should not be construed as requiring full compliance with DoD Regulation 5000.2. In addition, while developing and fielding the BMDS outside DoD's normal acquisition cycle, MDA should address operational testing by including operational test objectives in developmental tests. The Committee directs that this plan be delivered to the congressional defense committees with the submission of the fiscal year 2009 budget and updated semiannually.</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p>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)</p>	<p><i>Budget Justification Materials</i> - 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.</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR partially satisfies the requirement through its schedule baseline.</p> <p>Exhibit P-21 – Budget Production Schedule Procurement -MDA 0208866C, Terminal Defense, 0208866C, Aegis BMD, 0208866C, BMD Sensors</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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**Missile Defense Agency
Fiscal Year (FY) 2013 Budget Estimates**

ACRONYMS AND ABBREVIATIONS

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

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ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

ACRONYMS AND ABBREVIATIONS

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	92.617	74.920	79.975	-	79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
MD25: <i>Advanced Technology</i>	86.979	72.235	76.005	-	76.005	77.367	109.876	127.229	129.805	Continuing	Continuing
MD40: <i>Program Wide Support</i>	5.638	2.685	3.970	-	3.970	4.021	5.551	6.513	6.849	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

Ballistic Missile Defense Technology develops cost and operationally effective capabilities; explores and develops technology to counter future threats; leverages technology investments of other Department of Defense (DoD) organizations, industry, other government agencies, and international partners; and creates integrated simulations to enable planning and assessment of the Ballistic Missile Defense System (BMDS) Phased Adaptive Approach (PAA) architectures. The warfighter's Prioritized Capabilities List is used to prioritize research investments, which address potential gaps in the BMDS.

The Enhanced Command, Control, Battle Management & Communication (EC2BMC) Program develops and demonstrates technologies which improves the ability of BMDS to counter raids and integrates early intercept experiments.

Key enabling tasks include:

- Evaluating infrared sensor data for applicability to the future BMD System
- Integrating and fusing sensor data for greater track accuracy
- Classifying, identifying, characterizing, and discriminating items of interest
- Directing/controlling all battle management, command, and control operations in connection with response to a threat
- Examining shoot-look-shoot battle management schemes

The BMD Technology program also invests in next generation technology by conducting research with universities, University Affiliated Research Centers (UARC), Federally Funded Research and Development Centers (FFRDC), small business and industry at all levels to address threats expected in the future. This Program Element provides administrative support for the Small Business Innovation Research (SBIR) Program Element, 0605502C. FY 2012 SBIR topic areas include the following efforts from small business, universities, and collaborative efforts:

- Modular Hypergolic Leak Detector
- Advanced Techniques for Lossless Compression of Target Vehicle Telemetry
- Antenna design in the Plasma Environment
- RF Material Property Characterization

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>
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- Correlation of Phenomenology viewed in radar and infra-red segments of the spectrum
- Novel Planning Algorithms for Hybrid Land & Sea Platform Sensor Coordination
- Radar Waveforms to Discern Remote Object Attributes
- 3G & 4G Communication System Interference Remediation Techniques
- Methodologies for Real-time Correction of Water Vapor Effects on an Infrared Scene As Seen by an Airborne Platform
- Intercept Debris Identification and Characterization Strategies
- Graphical Processing Units (GPUs) for Computational Intensive Algorithms
- Asset Pairing for Battle Management
- RF-IR Data Fusion for Track and Data Correlation
- Resource Optimization
- Techniques for Performing Warhead Characterization
- Innovative Tests and Techniques for Modeling Detonation Probability and Debris Characterization of High Explosive Submunition Warheads
- Modeling Reflection in Electro Optical Infrared (EO/IR) Signature Predictions
- Fast-Running Physic-Based Models for Intercept Debris Aero-heating and Aero-thermal Demise
- Anti-tamper Technology for Missile Defense
- Waste Heat Recovery of Rocket Motors for Reduction of Battery Weight
- Lightweight Communication Equipment for Interceptor Communications
- Powdered Propellant Rocket Motor
- Miniature Extendable Nozzles or actuating nozzles for Improved Specific Impulse of Divert and Attitude Control System thrusters
- Acquisition, Tracking and Pointing Technologies for High Energy Laser Applications
- Development of Line-narrowed Diode Pumps Sources for Diode Pumped Alkali Laser systems
- Optics and Coating for High Energy Laser Applications
- Tier III Candidate Laser Modeling and Simulation Tool
- Atmospheric Characterization for Directed Energy Applications
- Light weight Rubidium-Metal Vapor Circulating System
- Affordable Reinforced Polymer Composite Structures with embedded electrical interfaces
- DNA Marking of Components for Avoidance of Counterfeit Parts
- Thermal Isolation of Nozzle Exit Cone Insulators
- Improve Detection of Counterfeit Parts by Using Electromagnetic Interference/Radio Frequency Emission Signatures System and Thermal Characterization Cycles

MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	PE 0603175C: <i>Ballistic Missile Defense Technology</i>

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	132.220	75.003	103.844	-	103.844
Current President's Budget	92.617	74.920	79.975	-	79.975
Total Adjustments	-39.603	-0.083	-23.869	-	-23.869
• Congressional General Reductions	-0.625	-0.083			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-40.000	-			
• Reprogrammings	1.022	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	-23.869	-	-23.869

Change Summary Explanation

FY 2011 \$40.0 million decrease is due to a Congressional directed transfer of the High Performance Interceptor content and funding to the BMD Aegis Program Element, 0603892C, budget project MD09 (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)).

FY 2012 decrease is due to Congressional general reductions (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)) (-\$0.083).

FY 2013 decrease reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD25: <i>Advanced Technology</i>	86.979	72.235	76.005	-	76.005	77.367	109.876	127.229	129.805	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense Technology portfolio develops cost and operationally effective capabilities; explores and develops technologies to counter future threats; leverages technology investments of other Department of Defense (DoD) organizations, industry, other government agencies and international partners. The Enhanced Command, Control, Battle Management and Communication (EC2BMC) Program develops and demonstrates technologies which improve the ability of BMDS to counter raids and integrates early intercept experiments for the Phased Adaptive Approach Architecture. The Advanced Research Program develops new early intercept capabilities by leveraging industry and university research. This program also manages the selection process and administers the Missile Defense Small Business Innovation Research (SBIR) Program Element, 0605502C. The SBIR Research Areas for FY 2012 include Test Instrumentation, Aegis, Command Control Battle Management Communication (C2BMC), Radar, Infrared, Terminal High Altitude Area Defense (THAAD), Ground-Based Midcourse Defense (GMD), Targets and Countermeasures, Israeli Program, Modeling and Simulation, Anti-Tamper, Standard Missile-3 Block IIB, Directed Energy, and Quality, Safety and Mission Assurance. The Advanced Technology Modeling and Simulation program develops integrated simulations to enable planning and assessment of the BMDS Phased Adaptive Approach architectures and designs methods for assessing integrated hardware and software performance in representative Ballistic Missile Defense System (BMDS) threat scenarios.

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

	FY 2011	FY 2012	FY 2013
<p>Title: High Performance Interceptor Components</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -The FY 2011 Appropriation transferred \$40.0 million of the High Performance Interceptor content and funding to the Ballistic Missile Defense (BMD) Aegis Program Element, 0603892C, budget project MD09. -FY 2011 accomplishments are contained in the SM-3 Block IIB Program Element, 0603902C, budget project MD70, because funds transferred to 0603902C beginning in FY 2012.</p> <p>FY 2012 Plans: Plans for FY 2012 are captured in SM-3 Block IIB Program Element 0603902C, budget project MD70.</p> <p>FY 2013 Plans: N/A</p>	14.972	-	-
<p>Title: Enhanced Command, Control, Battle Management and Communication</p>	40.131	49.453	51.860

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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<p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Developed experimental net-centric, service oriented architectures and investigated Electro-Optical/Infra-Red discrimination, track correlation, and data fusion capability improvements -Demonstrated building blocks to an Aegis Launch on Remote (LoR) capability using fused multi-sensor infrared (IR) data -Verified initial 3-D Infrared (IR) tracking and IR discrimination capability through post-event analysis using Aegis Simulated Intercept Flight Test (JFTM-04) Nov 2010. -Cued an Airborne Infrared (ABIR) ground sensor with Overhead Persistent Infrared (OPIR) in Sensors Flight Test (FTX-16) Mar 2011. -Fused ABIR, Space Tracking and Surveillance System (STSS), and OPIR measurement data to form tracks meeting Aegis LoR quality requirements in post-event analysis of Sensors Flight Test (FTX-16) Mar 2011. -Formed real-time tracks with Space Tracking and Surveillance System (STSS) data meeting Aegis LoR engagement criteria during Aegis Intercept Flight Test (FTM-15) Apr 2011. -Automatically generated an ABIR tasking request and associated cues during Air-Launched Target Returned to Flight (FTX-17) Jul 2011. -Leveraged Enterprise Sensor Lab/BMDS Overhead Non-imaging Infrared (ONIR) Architecture (ESL/BOA) 3-D tracking algorithms and developed new tasking algorithms to integrate ABIR sensor data to support the Aegis LoR engagement concept -Developed Infrared (IR) discrimination algorithms and demonstrated major object identification. Continued developing techniques to build battle management decision logic using IR features and attributes. This work supported a Ballistic Missile Defense System (BMDS) architecture study on Integrated Radio Frequency/Infrared (RF/IR) Discrimination requirements. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Develop upgraded multi-sensor (remote sensors and space sensors) tasking and signal processing capabilities to demonstrate ability to produce three-dimensional tracks with sufficient quality (position, velocity, error volumes, and latency) to complete ballistic missile engage-on-remote in realistic test environments -Conduct integrated experiments with Command, Control, Battle Management and Communication and Space Tracking and Surveillance System (STSS) to prove Aegis Launch-On-Remote with STSS -Develop interfaces with Precision Tracking Space System (PTSS) ground segment and the rest of the BMDS via the Enterprise Sensors Laboratory (ESL) -Investigate advanced algorithms and Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance net-centric modular architectures for increased raid capability -Develop advanced techniques for data fusion, remote sensor cueing, and Hit Assessment for space based sensors 			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>-Develop and deliver algorithms to C2BMC that incorporates the improved ballistic cue for mid-course sensors</p> <p>FY 2013 Plans:</p> <p>-Complete maturation and testing of new BMDS Overhead Persistent Infrared (BOA) baseline release to support Spiral 8.2 integration and testing</p> <p>-Complete requirements allocation and specification for advanced C2BMC technologies to support European Phased Adaptive Approach (EPAA) Phase 3/4 requirements</p> <p>-Complete remote sensor technologies and STSS integration prototype development and evaluation</p> <p>-Identify, refine, and develop representative models for use in simulation exercises, associated operations in flight tests, experiments, and performance assessments of advanced algorithms and battle management techniques using infrared and radio frequency sensors</p> <p>-Develop advanced algorithms for infrared and radio frequency data fusion, sensor cueing and tasking, discrimination, and hit assessment</p> <p>-Enterprise Sensors Laboratory: Complete new OPIR sensor integration to expand the RF sensor cueing capability of BOA. This capability will improve the raid capacity of the RF sensors</p> <p>-Enterprise Sensors Laboratory: Initiate development for the first application of infrared sensor cueing</p> <p>-Enterprise Sensors Laboratory: Initiate algorithm development for hit assessment and continue mid-course tracking algorithm improvements and boost phase tracking algorithm enhancements</p> <p>-Award a Spiral 8.4 contract to support EPAA Phase 3 requirements and initiate engineering design and development</p>				
<p>Title: Advanced Research</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Demonstrated two color and large format Focal Plane Arrays (FPA) using new substrate materials</p> <p>-Documented improved performance and operability of new substrate large format FPAs over existing Mercury Cadmium Telluride (MCT)</p> <p>-Identified novel approach for modeling multiple countermeasures as one extended target</p> <p>-Investigated innovative concepts for meeting BMDS requirements through university research programs:</p> <p>-Clemson University: Fiber Laser Research</p> <p>-Texas A&M University: Propulsions Systems</p> <p>-Auburn University: Signal & Data Processing, Mathematics</p> <p>-University of Illinois: Probability of Decision Theory</p> <p>-University of Arizona: Electro Optical Systems</p>		17.740	16.465	18.225

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -University of Nebraska in cooperation with University of Rouen: Advanced Material Sciences -University of Nebraska in cooperation with University of Bordeaux: Advanced Material Sciences -North Carolina State University in cooperation with Czech Republic Institute of Physics: Stereoscopic Imagery and Multi-Modality Image Reconstruction <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Award Advanced Research contracts to domestic universities for innovative early intercept investigations -Manage and oversee ongoing domestic university research projects -Manage and oversee ongoing international University-to-University research (UUR) projects -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 nonprofit organizations -Develop common modeling and simulation infrastructure, tools, and analysis capabilities that integrate with Ballistic Missile Defense System (BMDS) modeling and simulation architectures for advanced technology development. -Conduct System Engineering to identify initiatives to defend against current and future threats <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Award Advanced Research contracts to domestic universities for innovative early intercept investigations -Invest in second and third year of ongoing university contracts -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) -Manage the Small Business Innovation Research (SBIR) and Technology Applications programs to assist MDA-funded technology developers in finding and entering technology transfer opportunities to missile defense applications -Conduct System Engineering to identify initiatives and technology to defend against current and future threats 				
<p>Title: Advanced Communications Technology</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Conducted activities to enable the integration of advanced Command and Control, Battle Management and Communications (C2BMC) capabilities into BMDS subsystems -Demonstrated and evaluated advanced C2BMC capabilities in live-flight test events: Aegis Simulated Intercept Flight Test (JFTM-04E3), Aegis Simulated Intercept Flight Test (FTM-16E1), Sensors Flight Test (FTX-16), Aegis Intercept Flight Test (FTM-15), Air Launched Target Return to Flight (FTX-17), THAAD Intercept Flight Test (FTT-12), Aegis Flight Test Intercept (FTM-16E2). 		12.846	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>-Evolved war fighter concept of operations (CONOPS) to insert new subsystems and capabilities into the BMDS in the areas of boost phase tracking and classification, sensor resource management, weapons resource management addressing countermeasures, post-intercept debris information flow, and communication with allies and friendly nations in support of Phased Adaptive Approach capabilities</p> <p>-Developed and demonstrated next generation sensor netting and sensor resource management techniques</p> <p>-Conducted sensor netting experiments associated with tracking, integrated discrimination, sensor resource tasking, and Communications/bandwidth constraints</p> <p>-Developed and demonstrated advanced battle management (BM) and integrated fire control capabilities</p> <p>-Conducted architecture assessments of BM functions federated within C2BMC and various allied/coalition partners and friendly nations</p> <p>-Integrated the CONOPS information for advanced and emerging BMDS capabilities (such as Early Intercept and Space Tracking and Surveillance System (STSS)) into battle management constructs</p> <p>FY 2012 Plans: FY 2012 Plans are captured in BMD C2BMC Program Element 0603896C, budget project MD01.</p> <p>FY 2013 Plans: FY 2013 plans are captured in BMD C2BMC Program Element, 0603896C, budget project MD01.</p>				
<p>Title: Advanced Technology Modeling and Simulation</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: NA</p> <p>FY 2012 Plans: The FY 2012 effort for Advanced Technology Modeling and Simulation is contained in Advanced Research and Enhanced Command, Control, Battle Management and Communications within budget project MD25.</p> <p>FY 2013 Plans: -Beginning in FY 2013, Advanced Technology Modeling and Simulation is centralized in this accomplishment area for efficiencies and budget clarity. -Develop common modeling and simulation infrastructure, tools, and analysis capabilities that integrate with Ballistic Missile Defense System (BMDS) modeling and simulation architectures for the Standard Missile-3 Block IIB and future variant government reference concepts.</p>		-	-	5.920

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<p>-Create and integrate BMDS Phase III/IV system modeling and simulation products into BMDS modeling and simulation architectures for SM-3 IIB, Directed Energy, and University Research.</p> <p>-Conduct internal benchmarking simulation exercises and yearly internal modeling and simulation reviews to drive analysis and model requirements for future concepts.</p> <p>Title: Small Business Innovation Research (SBIR) Program Support</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Partial funding for these FY 2011 accomplishments is reported in budget project MD25 Advanced Research (\$5.0 million) -Conducted Technology Applications Reviews to assist MDA-funded technology developers find and enter technology transfer opportunities beyond MDA applications -Conducted Business Focus Workshops with MDA SBIR Phase I companies to help develop a successful business model for their technology early in the development cycle -Published the MDA Technology Applications annual report, The Spirit of Innovation, and a report on biomedical and life science technology transfer from MDA technology on the web -Administered, updated, and expanded MDA`s dedicated web site for technology transfer -Managed and continually updated the Technology Applications program`s internal data handling and tracking system to manage all aspects of the Technology Applications program including historical data -Executed MDA Small Business Innovation Research/Small Business Technology transfer (SBIR/STTR) solicitation</p> <p>FY 2012 Plans: -Execute the FY 2012 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) MDA requirements-driven investment strategy including eight research areas, approximately forty SBIR topics, five STTR topics, and associated budgets -Award approximately 160 Phase I SBIR and 20 Phase I STTR contracts leading to 90 follow-on prototype development efforts -Award approximately 80 Phase II SBIR and 10 Phase II STTR contracts intended to transition to C2BMC, interceptor and space systems -Augment promising Phase II programs to advance Technology Readiness Levels (TRLs) and aid transition/commercialization -Conduct Phase II Transition invitation and assessments with additional augmentations pending -Generate and receive approval for FY 2013 SBIR/STTR investment strategy including eight Research Areas, SBIR topics, STTR topics, and associated budgets -Conduct outreach activities to mentor small business and foster best practices to increase the likelihood of successful technologies being transitioned into the BMDS</p>		1.290	6.317	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
-Conduct Technology Applications Reviews and Business Focus Workshops to assist MDA-funded technology developers find and enter technology transfer opportunities beyond MDA applications			
FY 2013 Plans: Small Business Innovation Research Program Support effort transfers to the Advanced Research accomplishment within this budget project MD25 beginning in FY 2013 to achieve efficiencies			
Accomplishments/Planned Programs Subtotals	86.979	72.235	76.005

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603893C: <i>Space Tracking & Surveillance System</i>	105.580	96.232	51.313		51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603901C: <i>Directed Energy Research</i>	126.096	49.943	46.944		46.944	47.865	47.357	52.519	54.513	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing

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. MDA will also award contracts to industry and universities via the Advanced Technology Innovation Broad Agency Announcement and competitive procurements.

E. Performance Metrics
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD40: <i>Program Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	5.638	2.685	3.970	-	3.970	4.021	5.551	6.513	6.849	Continuing	Continuing

Note

In FY 2012, Program Wide Support reflects a proportional decrease as a result of decreases to BMD Technology.

In FY 2013, Program Wide Support reflects a proportional increase as a result of adjustments to BMD Technology.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	5.638	2.685	3.970
Description: See Description Below			
FY 2011 Accomplishments: See Paragraph A, Mission Description and budget item justification			
FY 2012 Plans: See Paragraph A, Mission Description and budget item justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	5.638	2.685	3.970

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD40: <i>Program Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>			PE 0603274C: <i>Special Program - MDA Technology</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	61.371	36.685	-	36.685	39.736	42.726	46.310	47.213	Continuing	Continuing
MD81: <i>Special Programs - MDA Technology</i>	-	61.371	36.685	-	36.685	39.736	42.726	46.310	47.213	Continuing	Continuing

Note

NA

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 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	-	61.458	37.866	-	37.866
Current President's Budget	-	61.371	36.685	-	36.685
Total Adjustments	-	-0.087	-1.181	-	-1.181
• Congressional General Reductions	-	-0.087			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	-1.181	-	-1.181

Change Summary Explanation

FY 2013 decrease reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603274C: <i>Special Program - MDA Technology</i>	PROJECT MD81: <i>Special Programs - MDA Technology</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD81: <i>Special Programs - MDA Technology</i>	-	61.371	36.685	-	36.685	39.736	42.726	46.310	47.213	Continuing	Continuing

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. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: Special Programs	-	61.371	36.685
Description: See Description Below			
FY 2011 Accomplishments: 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.			
FY 2012 Plans: 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.			
FY 2013 Plans: 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.			
Accomplishments/Planned Programs Subtotals	-	61.371	36.685

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	126.096	49.943	46.944	-	46.944	47.865	47.357	52.519	54.513	Continuing	Continuing
MD69: <i>Directed Energy Research</i>	122.806	46.257	44.560	-	44.560	45.450	45.045	49.929	51.748	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	3.290	3.686	2.384	-	2.384	2.415	2.312	2.590	2.765	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) is conducting research into the transmission and control of Directed Energy (DE) 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 exploring two promising laser technologies. 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 Diode Pumped Alkali Laser System (DPALS) and fiber combining laser technologies based on their efficiency and scaling potential. A 200 kilowatt class flight qualifiable laser prototype will be built and tested based on the selected technology for non-intercept Ballistic Missile Defense System (BMDS) enhancement. In parallel with laser development, a surrogate high altitude, long endurance (HALE) platform will be instrumented to collect high altitude flight environment data starting in FY 2012. A concept development contract to demonstrate the mission utility of a 200 kilowatt class laser integrated into a high altitude, low mach platform will follow and culminate in successful in-flight Command/Control, Ballistic Missile Defense System (C2BMDS) enhancement demonstrations. The successful completion of these demonstrations will establish the technical foundation for revolutionary technology.

The Airborne Laser Test Bed (ALTB) demonstrated a directed energy weapon's ability to destroy a boosting missile and provided valuable science and technology (S&T) data for the Nations DE knowledge base. The limited funding available for FY 2012 required that MDA stop ALTB S&T data collection. Flight tests were stopped and the aircraft is being prepared for storage and final disposition. This program element funds ALTB disposition.

The Directed Energy Research contributions to support Combatant Commanders' priorities include: Engage and re-engage a threat to include Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), Intermediate Range Ballistic Missiles (IRBM), Intercontinental Ballistic Missiles (ICBM), and address new and evolving Ballistic Missile discrimination threats.

MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i>	PE 0603901C: <i>Directed Energy Research</i>
BA 3: <i>Advanced Technology Development (ATD)</i>	

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	98.688	96.329	91.953	-	91.953
Current President's Budget	126.096	49.943	46.944	-	46.944
Total Adjustments	27.408	-46.386	-45.009	-	-45.009
• Congressional General Reductions	-0.844	-0.057			
• Congressional Directed Reductions	-	-46.329			
• Congressional Rescissions	-	-			
• Congressional Adds	25.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.192	-			
• SBIR/STTR Transfer	-1.940	-			
• Other Adjustment	-	-	-45.009	-	-45.009

Change Summary Explanation

FY 2011 increase of \$25.000M reflects a congressional increase (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)) and also SBIR/STTR transfer of \$1.940M and internal reprogrammings of \$5.192 for Department of Defense priorities.

FY 2012 decrease of \$46.386M reflects a congressional directed reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)) of \$46.329 and a congressional general reduction of \$.057.

FY 2013 decrease of \$45.009M reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>				R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>				PROJECT MD69: <i>Directed Energy Research</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD69: <i>Directed Energy Research</i>	122.806	46.257	44.560	-	44.560	45.450	45.045	49.929	51.748	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

MDA is partnering with the Federally Funded Research and Development Centers and the Defense Advanced Research Projects Agency to explore advanced laser technologies such as the Diode Pumped Alkali Laser System (DPALS) and fiber laser beam combining systems, and will monitor other emerging laser technologies for investment and development. During FY 2012 and 2013, MDA will demonstrate the efficiency, producibility and scaling potential of candidate laser architectures.

Based on successful knowledge point completion and high energy lethality analysis, MDA will select the best candidate laser and develop a 200 kilowatt class laser payload for integration and test on a high altitude, low mach platform. To characterize the high altitude, low mach flight environment a surrogate directed energy platform will be instrumented to provide vibration and jitter data.

MDA will transition the Airborne Laser Test Bed (ALTB) aircraft for permanent storage in FY 2012. Flight tests to characterize lethality, high energy laser beam propagation and to anchor system models for both Air Force and Missile Defense applications stopped in November 2011. The Agency will transition to the next generation Ballistic Missile Defense (BMD) Laser technology, while maintaining the critical skills required for the next generation directed energy platform development. Closeout tasks include: final collation and archiving of ALTB information and data, aircraft and property disposition and Birk Flight Test Center facility restoration at Edwards Air Force Base.

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

Title: Directed Energy Research	FY 2011	FY 2012	FY 2013
Description: See Description Below	122.806	46.257	44.560
FY 2011 Accomplishments:			
-Missile Defense Agency transitioned the Airborne Laser Test Bed (ALTB) aircraft to a national test platform for directed energy			
-Worked with the Office of the Assistant Secretary of Defense for Research and Engineering, the High Energy Laser Joint Technology Office, Defense Advanced Research Projects Agency and the Air Force in a Scientific Review Committee forum to plan and assess the ALTB flight campaign to characterize atmospheric propagation effects and boundary layer and jitter effects with varying engagement geometries			
-Collected field test data for model validation and verification			
-Anchored models for airborne directed energy assets			
-Investigated advanced technologies to increase efficiency of beam control			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>	PROJECT MD69: <i>Directed Energy Research</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Investigated software algorithms for improvements to beam control and fire control -Developed and experimented with diode-pumped gas lasers, fiber lasers, cryogenically-cooled solid state lasers and advanced high-power laser optics -Investigated lethality, beam propagation, modeling, laser beam combining and additional innovative areas <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -MDA will complete ALTB testing and collate/archive test data and documentation for future MDA and DoD directed energy program use -Complete ALTB directed energy model validation and verification -Prepare and store the ALTB -Conduct experiments to characterize high altitude low mach platform vibration with a next generation high altitude surrogate platform -Explore and develop directed energy technologies for use against current and future MDA threats -Demonstrate the architectural feasibility of Diode Pumped Alkali Lasers (DPALs) and combined fiber lasers for high power applications -Investigate lethality, countermeasures, beam propagation, modeling and laser beam combining as well as investigate additional innovative technologies <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Make investments to mature high power directed energy technology -Develop next-generation kilowatt-class fiber amplifiers -Develop high power diode-pumped amplifier systems -Develop fiber laser beam combining techniques to validate laser combining architectures -Evaluate concepts for improving technical readiness, reducing risk areas and improving next-generation platform reliability -Estimate life-cycle costs and assess viability for further development -Partner with the High Energy Laser Joint Technology Office, Universities and National Laboratories to improve high-power laser optics, optical coatings and directed energy modeling and simulation -Conduct experiments to characterize the high altitude, low mach flight environment -Remove/de-militarize ALTB hardware, fixtures, tooling and government furnished property 				
Accomplishments/Planned Programs Subtotals		122.806	46.257	44.560
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>	PROJECT MD69: <i>Directed Energy Research</i>

D. Acquisition Strategy

MDA Fiscal Year 2013 budget submission reflects an emphasis on high power laser technology research and development and application. The acquisition strategy to conduct this technology development effort consists of three pillars. First, leverage the technical expertise of National Laboratories, Federally Funded Research and Development Centers and University Applied Research Centers. Second, continue to leverage relevant existing contracts within limits of the Competition in Contracting Act (CICA), taking into account contractor past performance, scope, ceiling and period of performance. Third, for new technology initiatives, seek industry solutions via the Advanced Technology Broad Agency Announcement for competitive procurements. In addition, MDA will use existing contracts to retire the Airborne Laser Test Bed safely and efficiently.

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	3.290	3.686	2.384	-	2.384	2.415	2.312	2.590	2.765	Continuing	Continuing

Note

In FY 2013, Program Wide Support reflects a proportional decrease as a result of decreases to Directed Energy Research.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	3.290	3.686	2.384
Description: See Description Below			
FY 2011 Accomplishments: See Paragraph A, Mission Description and budget item justification			
FY 2012 Plans: See Paragraph A, Mission Description and budget item justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	3.290	3.686	2.384

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

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>	PROJECT MD40: <i>Program-Wide Support</i>

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	13.443	224.077	-	224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>	-	8.876	212.704	-	212.704	280.367	433.177	483.324	408.451	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	4.567	11.373	-	11.373	14.881	22.196	25.032	21.788	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

The Standard Missile-3 Block IIB (SM-3 IIB) is the key element to expanding the battle space by adding an additional layer to our homeland defense against Intercontinental Ballistic Missiles (ICBM). The goals of the program are to develop an operational, hit-to-kill missile fielded in the 2020 timeframe to counter first generation ICBMs targeted at the US homeland early in their flight. It will serve as the first tier of the layered defense of the U.S. Homeland. The SM-3 Block IIB missile will also provide a large defended area against regional, intermediate range ballistic missiles. Early intercept capability provides the benefit of forcing an adversary to release countermeasures earlier than optimum directly affecting their ability to initiate the deployment of penetration aids or submunitions.

The SM-3 Block IIB will be integrated into the Aegis BMD 5.1 Weapon System using Engage on Remote, leveraging the BMD distributed Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) network. Another goal is to reduce technical and programmatic risk by developing and testing key component technologies that increase the speed of the missile and provide flexible energy management to engage targeted ballistic missiles early in their trajectory. MDA will also conduct a competition to select the industry team that will execute the product development in FY 2014.

Contributions to Combatant Commanders Prioritized Capabilities List include:

- Engage a threat Intercontinental Ballistic Missile (ICBM)
- Engage a threat Intermediate Range Ballistic Missile (IRBM)
- Engage a threat Medium Range Ballistic Missile (MRBM)

MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of 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 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	123.456	433.106	-	433.106
Current President's Budget	-	13.443	224.077	-	224.077
Total Adjustments	-	-110.013	-209.029	-	-209.029
• Congressional General Reductions	-	-0.013			
• Congressional Directed Reductions	-	-30.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-80.000			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	-209.029	-	-209.029

Change Summary Explanation

FY 2012 decrease reflects a total congressional reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)) of -\$110.013M which includes a congressional general reduction of -\$0.013M; a congressional directed reduction of -\$30.000M; and a congressional directed transfer of -\$80.000M. (\$30M to the Aegis BMD Program Element (0603892C) for SM-3 Block IB production improvements and \$50M to the Aegis SM-3 Block IIA Co-Development Program Element (0604881C) for risk reduction and program adjustments.

FY 2013 decrease reflects an adjustment to the start of product development from the beginning of FY 2013 to FY 2014. The FY 2013 reduction of -\$209.039 reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>	-	8.876	212.704	-	212.704	280.367	433.177	483.324	408.451	Continuing	Continuing

Note

In FY 2011, a total of \$86.661 million was executed in various Program Elements, \$40 million of the High Performance Interceptor work, was appropriated to the BMD Aegis, 0603892C, Program Element. An additional \$14.972 million was executed from the BMD Technology, 0603175C, and \$31.689 million from the Enabling Technology, 0603890C, Project MD29. All FY 2011 accomplishments for SM-3 Block IIB work are captured in this Program Element description.

A. Mission Description and Budget Item Justification

During the technology development phase, MDA is executing a two-pronged strategy to reduce the technical risk and plan for the product development phase. The Standard Missile-3 Block IIB (SM-3 Block IIB) program is pursuing technology development with component vendors to mature key enabling technologies in preparation for product development. For example, investments in lighter weight structures and materials to reduce inert mass will increase missile velocity, and investments to improve the producibility of advanced focal plane arrays will reduce the cost of high performance seekers that improve containment of threat missiles. In parallel, MDA competitively awarded three Concept Definition and Program Planning contracts to explore viable and affordable missile configurations and define an executable development plan. In these contracts, MDA is assessing alternative missile architectures and technologies to define the trade space across cost, risk, and missile performance to establish missile requirements for product development that are feasible and affordable. The engineering trade space includes larger-diameter boosters with improved rocket propellants, lightweight missile structures, and control mechanisms in modified MK 41 Vertical Launch Systems able to achieve higher burnout velocities; missile communication concepts to enable communication with multiple sensors over several frequencies; design attributes for missile reliability and producibility, including production tolerances and minimizing single point failure; and innovative kill vehicle seekers and divert and attitude control systems. This comprehensive strategy of technology investments to reduce risk, exploit technology opportunities, and engage industry early provides the foundation for executable plans for the product development phase. The SM-3 Block IIB program enters the product development phase in FY 2014 to support deployment in the 2020 timeframe.

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

Title: SM-3 Block IIB	FY 2011	FY 2012	FY 2013
Description: See Description Below	-	8.876	212.704
FY 2011 Accomplishments: -Began concept definition and program planning with three industry teams to explore viable and affordable missile configurations and define an executable development plan for the SM-3 Block IIB. MDA is assessing alternative missile architectures and technologies to define the trade space across cost, risk, and missile performance to establish missile requirements that are feasible and affordable. -Completed technology risk reduction trade studies for divert and attitude control system and third stage rocket motor components. These efforts examined the technological maturity of component technologies in actuators, valves, high temperature			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
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<p>materials, structural insulators, propellants, and supporting items to identify opportunities for investments to reduce risk and improve SM-3 Block IIB performance.</p> <ul style="list-style-type: none"> -Began technology risk reduction design and development for third stage rocket motor component technology demonstrations including high temperature composite casing, an innovative solid propellant attitude control system, and higher energy solid rocket motor propellants applicable to near-term missile system development. -Began technology risk reduction design and development for two liquid propellant divert and attitude control system demonstrations including composite divert thrusters, integrated attitude control thrusters, propellant storage and delivery systems, fast-actuating valves and advance lightweight structural concepts applicable to near-term missile system development. -Fabricated and analyzed initial test lots for analog large format (512 by 512 pixel count), two color (long-wave infrared and short-long-wave infrared) focal plane arrays. Results of analyses on detector performance (signal to noise), operability (percent of pixels performing to specification), and clusters (grouping of non-operable pixels) are being incorporated into process and fabrication improvements to increase overall yield and decrease SM-3 Block IIB kill vehicle seeker cost and schedule risk. -Began development of digital large format (512 by 512 pixel count), two color (long-wave infrared and short-long-wave infrared) focal plane arrays. On-detector conversion of focal plane array image to digital data allows for increased frame rate, faster image summing to improve signal to noise ratio, and decreased weight and power requirements. -Completed integration of prototype components to support testing of a monolithic ring laser gyro Common Inertial Measuring Unit (CIMU). This CIMU mitigates potential obsolescence issues, and promises improved reliability and producibility. The reduced cost, size, weight, and power requirements as well as improved accuracy reduce the risk associated with a kill vehicle operating over longer duration missions in support of SM-3 Block IIB performance goals. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Conduct technical oversight for lightweight structural component design verification testing to demonstrate the ability to produce and incorporate lightweight components into the SM-3 Block IIB missile. -Continue interceptor system engineering trades and industry concept definition to support product development to refine achievable performance within risk, cost and schedule goals. -Continue to develop missile digital models and simulations to support comprehensive missile and system trades and definition of SM-3 Block IIB performance requirements. -Begin development of Request for Proposal (RFP) package for competition for Product Development Phase that will begin in FY 2014. <p>-Conduct technical oversight for continuing fabrication improvements on analog large format, two color focal plane arrays to increase overall yield and decrease SM-3 Block IIB (and other Standard Missile variants) kill vehicle seeker cost and schedule risk.</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
-Conduct technical oversight for continuing component development for technical risk reduction areas such as divert and attitude control systems, and third stage rocket motor that are common to the SM-3 IIA and IIB programs.			
FY 2013 Plans:			
-Continue development of Request for Proposal (RFP) package and begin source selection for competition for SM-3 Block IIB Product Development Phase that will begin in FY 2014.			
-Continue improvements to analog focal plane array producibility which also benefits other Standard Missile variants.			
-Continue development and demonstration of enabling components for divert and attitude control system concepts and for third stage rocket motor technologies, including an innovative solid propellant attitude control system.			
-Continue concept definition and program planning activities with three industry teams (Boeing, Lockheed Martin and Raytheon). The industry teams will each select a single design for detailed analysis, modeling, and program planning activities that will continue through the remainder of the year.			
-Initiate activities for Aegis Weapon System, canister, and Vertical Launch System modifications necessary to support the SM-3 Block IIB interceptor.			
Accomplishments/Planned Programs Subtotals	-	8.876	212.704

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing

D. Acquisition Strategy

MDA's fiscal year 2013 budget submission reflects an emphasis on early intercept research and development. The acquisition strategy to conduct this technology development effort consists of three focus areas. First, leverage the technical expertise of Federally Funded Research and Development Centers, University Applied Research Centers, and Universities and government laboratories. Second, continue component technology risk reduction initiatives, under Advanced Technology Initiative Broad Agency Announcement and competitive procurements. Third, complete three Concept Definition and Program Planning contracts with missile integration prime contractors and conduct a competition for product development.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	4.567	11.373	-	11.373	14.881	22.196	25.032	21.788	Continuing	Continuing

Note

FY 2013, Program Wide Support reflects a proportional increase as a result of increases to the Standard Missile-3 Block IIB (SM-3-IIB).

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	4.567	11.373
Description: See Description Below			
FY 2011 Accomplishments: The budget project in this Program Element did not exist in program wide support in FY 2011.			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and Budget Item Justification.			
Accomplishments/Planned Programs Subtotals	-	4.567	11.373

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

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD40: <i>Program-Wide Support</i>

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	420.839	290.076	316.929	-	316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
MD07: <i>THAAD</i>	398.748	276.291	229.869	-	229.869	218.373	250.200	198.752	192.538	Continuing	Continuing
MT07: <i>THAAD Test</i>	-	-	70.928	-	70.928	78.573	70.546	37.201	71.791	Continuing	Continuing
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	1.128	1.230	1.145	-	1.145	1.103	1.121	1.236	1.260	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	20.963	12.555	14.987	-	14.987	15.163	16.486	12.286	14.169	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

The Terminal Defense PE includes the Terminal High Altitude Area Defense (THAAD) development program, support of PATRIOT Advanced Capability-3 (PAC-3) participation in Missile Defense Agency activities, and Program Wide Support.

The THAAD element provides the only air transportable, fast reacting 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 Ft. Bliss, TX for initial fielding and training.

PATRIOT Advanced Capability (PAC 3) is an U.S. Army short range Ballistic Missile Defense System (BMDS) that interfaces with the BMDS. MDA funds PATRIOT participation in BMDS interoperability integration efforts.

THAAD has completed the development of the THAAD 1.0 configuration and will develop the THAAD Build 2.0 capability. Continued development and integration will provide for enhanced debris mitigation and interoperability with other BMDS elements.

Testing with other BMDS elements (including BMDS Command Control / Battle Management and Communication (C2BMC), PATRIOT and Aegis) will demonstrate integrated mission execution and provides flexibility to rapidly augment the stationary BMDS assets in the global Phased Adaptive Approach.

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	436.482	290.452	318.745	-	318.745
Current President's Budget	420.839	290.076	316.929	-	316.929
Total Adjustments	-15.643	-0.376	-1.816	-	-1.816
• Congressional General Reductions	-2.935	-0.376			
• Congressional Directed Reductions	-5.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-7.708	-			
• Other Adjustment	-	-	-1.816	-	-1.816

Change Summary Explanation

- FY 2011 decrease of \$15.643M reflects Congressional General Reduction (\$2.935M) and Congressional Directed Reductions (\$5.000M) (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)) and SBIR/STTR transfer (\$7.708M).
- FY 2012 decrease of \$0.376M reflects a Congressional General Reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).
- FY 2013 decrease of \$1.816M reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD07: <i>THAAD</i>	398.748	276.291	229.869	-	229.869	218.373	250.200	198.752	192.538	Continuing	Continuing
Quantity of RDT&E Articles	11	38	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

THAAD Baseline Capability Development (BCD) (THAAD 1.0) provides the fundamental capability against short and medium-range Ballistic Missiles and asymmetric threats inside and outside the atmosphere. Remaining work scope includes: 1) Ground and Flight Test the weapon system against complex Re-entry Vehicles (RV), background clutter, and Medium-Range Ballistic Missile (MRBM) threats; 2) Ground and Flight Test the initial Discrimination Capability; 3) Provide enhanced communication capability to support Link 16 compatibility with the Ballistic Missile Defense System (BMDS) and engagement coordination with other BMDS elements.

THAAD Advanced Capability Development (ACD) (THAAD 2.0) expands the capability of THAAD 1.0 system by 2018. New THAAD capabilities include: 1) Launch on Link 16 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; and 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.

THAAD supports fielded software through Post Deployment Software Support (PDSS). PDSS enhancements will include: 1) Information Assurance mandatory updates; 2) Warfighter requested corrections and enhancements; and 3) Upgrades to maintain interface with other BMDS software builds.

Through FY 2011, THAAD provided logistical support to field, operate, maintain, repair and replenish the weapon system. Beginning in FY 2012, these costs are resourced with O&M funding.

MDA Engineering integrates element development, test, and Modeling and Simulation work to optimize the capability of the BMDS.

THAAD provides institutional and unit training devices to support U.S. Army requirements for CONUS and OCONUS deployments based on the System Training Plan (STRAP).

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

	FY 2011	FY 2012	FY 2013
Title: Weapon Sys Engr Integ & Test (WSEIT)	72.371	98.084	171.433
Articles:	0	38	0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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Description: See Description Below

FY 2011 Accomplishments:

Weapon System Engineering Integration & Test (WSEIT) performs all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) requirements into THAAD requirements, incorporates those requirements into a THAAD design and capability, and verifies and validates THAAD capability. Activities include coordination and requirements analysis, system integration, software engineering to include independent verification and validation, configuration management, integration of the THAAD components into the THAAD element, and BMDS integration of the THAAD element. THAAD WSEIT performs risk management, system security, and information assurance. THAAD WSEIT updates THAAD interface specifications and interface control documents for required BMDS changes.

-Conducted pre-flight testing (trajectory, debris, nominal and tolerance scenario analyses) in the System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) facility for Flight Test THAAD (FTT)-12 (IOT&E) (THAAD Dual Simultaneous Intercept Flight Test against Short Range Ballistic Missile Targets) and FTO-01 (Integrated THAAD / PATRIOT / Aegis Flight test against three simultaneous targets) to ensure mission range and public safety; and to generate system performance predictions for post mission comparison

-Completed Element Verification of THAAD initial capability to verify weapon system meets THAAD System Specification
-Integrated and implemented THAAD and its components in the BMDS through participation in MDA Ground Test Campaign and Combatant Commander (COCOM) wargames, and exercises, and Performance Assessments to ensure THAAD interoperability with BMDS

-Demonstrated THAAD communications with Command and Control/Battle Management and Communications (C2BMC) and Aegis Ballistic Missile Defense over Extremely High Frequency (EHF) Satellite Communications (SATCOM) during flight testing at Flight Test Sea-Based X-Band Radar (FTX)-17, Flight Test Standard Missile (FTM)-16 and FTT-12 (IOT&E)

-Developed requirements and conducted preliminary design reviews for the Post Deployment Software Support (PDSS) builds for each THAAD component to ensure continued performance and operation of fielded Batteries

-Completed resolution process for correlation issues involving Link-16 Tracks to enhance engagement coordination for interoperability with BMDS

-Executed Reliability Confidence Testing and analysis to support reliability growth to meet U.S. Army requirements in support of THAAD Materiel Release

FY 2012 Plans:

Plans include scope that was previously documented in MD07 THAAD accomplishments/plans: System Engineering, THAAD Fire Control and Communication, Launcher, Interceptor, and Batteries #1 and #2.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Deliver 38 Interceptors for Batteries #1 and #2 that were purchased with FY 2007 through FY 2012 funds -Continue to support BMDS C2BMC in the integration of Extremely High Frequency (EHF) and Super High Frequency (SHF) communications capabilities into the THAAD weapon system -Continue in the design, development, qualification testing, release, field, and support incremental release of PDSS builds for each THAAD component -Continue the development of automated test tools for PDSS activities -Continue to provide real-time closed loop system and component testing utilizing THAAD hardware-in-the-loop (HWIL) facilities -Demonstrate THAAD's ability to interoperate with Aegis, AN/TPY-2, C2BMC, and PATRIOT in a live fire test -Conduct pre-mission analysis of THAAD performance in FTI-01 and FTO-01, operational scenarios testing THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2. Analysis ensures mission range and public safety and generates system performance predictions for post mission comparison. -Conduct analysis of Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data collected during flight testing -Determine impacts to Joint data link standard MIL-STD-3011 by assessing interoperability capabilities of THAAD system, concept of operations, and developed Software (S/W) -Continue development of Netted Embedded Training to enable THAAD Battery participation in common training scenarios, near real time with other THAAD Batteries, lower tier units, other elements of the Ballistic Missile Defense System (BMDS) (through Distributed Multi-Echelon Training Systems) -Continue to develop, maintain, and integrate THAAD Integrated Simulation and Tactical Software (ISTS) into BMDS digital framework and conduct Verification, Validation and Accreditation (VV&A) for Simulation-Over-Live-Driver (SOLD), ISTS at the THAAD Evaluation Center (TEC) HWIL facility -Continue Models and Simulations (M&S) development to support Element and BMDS events including all Integrated Master Test Plan (IMTP) M&S related activities to include System Pre Mission Tests (SPMTs) and System Post Flight Reconstruction (SPFRs) -Update THAAD interface specifications and interface control documents for required BMDS changes -Conduct threat assessments of the BMDS Adversary Development Package (ADP) -Continue THAAD interoperability planning with joint and coalition planning systems -Complete Ignition System Safety Review Board (ISSRB) testing of optical block re-design -Implement Mandatory Information Assurance Updates and perform Information Assurance Vulnerability Assessments (IAVA) on all THAAD component software -Initiate THAAD Build 2.0 development of non-organic intercept debris mitigation -Rehost, test, and qualify new Launcher Operating System to minimize Information Assurance vulnerabilities <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Continue THAAD Build 2.0 development of non-organic intercept debris mitigation 				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Conduct post-mission analysis of THAAD performance in FTI-01, an operational scenario testing THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2 -Continue pre-mission analysis for FTO-01, an operational scenario further testing THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2. Analysis ensures mission range and public safety and generates system performance predictions for post mission comparison. -Continue integration and implementation of THAAD and its components in the BMDS through participation in MDA Ground Test Campaign and Performance Assessments to evaluate system performance and interoperability within the integrated BMDS -Continue integration and implementation of THAAD and its components in the BMDS through participation in Combatant Commander (COCOM) wargames and exercises -Design, develop, qualification test, release, and field annual release of Post Deployment Software Support (PDSS) to ensure continued performance and operation of fielded Batteries -Implement Mandatory Information Assurance Updates and perform Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded Batteries -Develop software updates for Simulation-Over-Live Driver (SOLD) to enable testing and training of mass raid scenarios on tactical hardware and integrate into Ballistic Missile Defense System (BMDS) flight test and ground test campaign -Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, and integration activities to ensure effective use of appropriated resources -Provide contractor program management, and subcontract management to ensure effective use of appropriated resources -Execute Terminal High Altitude Area Defense program in compliance with internal and external direction, policies, and regulations to ensure effective use of appropriated resources -Provide technical and business support in the negotiation and award of the Battery contracts -Conduct Integrated Baseline Reviews to ensure prime contractor's baseline cost, schedule, and risk aligned with THAAD project office requirements <p>Variance Analysis: Increase from FY 2011 to FY 2012 caused by movement of scope from System Engineering, THAAD Fire Control and Communication, Launcher, and Interceptor to this budget activity. Increase from FY 2012 to FY 2013 includes scope to initiate THAAD Build 2.0 software and hardware and incorporation of the Integrated Master Test Plan.</p>			
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Title: THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)	13.829	-	-
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>The THAAD Fire Control and Communication (TFCC) is composed of two Tactical Station Groups (TSGs). Each TSG consists of a Tactical Operations Station, a Launch Control Station, and a Station Support Group. The TFCC serves as the interface with the Ballistic Missile Defense System (BMDS) and provides planning, control, coordination, execution, and communications of the THAAD weapon system.</p> <p>-Conducted TEMPEST Testing, using implemented hardware updates, to correct known vulnerabilities identified in previous TEMPEST test events</p> <p>-Developed Extremely High Frequency Warfighter Information Network - Tactical (WIN-T/EHF) upgrade to enable THAAD's connection to updated Army Signal Corps assets, as well as provide a more survivable, higher speed satellite connection to Aegis and Command and Control/Battle Management and Communications (C2BMC), enabling the development of enhanced engagement concepts</p> <p>-Continued assembly of four EHF WIN-T Modification Kits for the Battery #1 and #2 Tactical Station Groups to enable THAAD's connection to updated Army Signal Corps assets</p> <p>-Continued EHF WIN-T Modification Kits for two Tactical Test Beds in order to maintain tactical configuration in the labs to support fielded Batteries</p> <p>-Initiated Netted Embedded Training to enable THAAD Battery participation in common training scenarios, near real time with other THAAD Batteries, lower tier units, other elements of the BMDS (through Distributed Multi-Echelon Training System)</p> <p>-Implemented Post Deployment Software Support (PDSS) Planning and Analysis to incorporate THAAD Fire Control and Communication (TFCC) Soldier requested capabilities, software change requests, and improved interoperability by mitigating Track ID proliferation issues between THAAD and AEGIS BMD via Link 16</p> <p>-Updated TFCC software for use in Reliability Confidence Testing to meet U.S. Army reliability requirements</p> <p>FY 2012 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test and System Test.</p> <p>FY 2013 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test and System Test.</p>				
Title: Launcher		7.594	-	-
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>The THAAD Launcher consists of a U.S. Army M1120 Heavy Expanded Mobility Tactical Truck-Load Handling System variant that transports an integrated missile round pallet and supports and secures eight ready-to-launch interceptors.</p> <p>-Completed redesign of obsolete launcher components and qualification testing to ensure the Launcher met performance requirements</p> <p>-Updated Launcher software for use in Reliability Confidence Testing to meet U.S. Army reliability requirements</p> <p>-Supported verification of THAAD Launcher capability to meet requirements from the THAAD System Specification and THAAD Launcher Prime Item Development Specification</p> <p>-Completed Launcher rail impact test to ensure the weapon system to validate weapon system safety parameters</p> <p>FY 2012 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test and System Test.</p> <p>FY 2013 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test and System Test.</p>				
<p>Title: System Test</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: THAAD System Test conducts Ballistic Missile Defense System (BMDS) Flight Test, Ground Test, Mission Planning, Performance Assessment, Systems Analysis, and Range Safety analysis in accordance with BMDS Integrated Master Test Plan (IMTP). THAAD System Test coordinates with Operational Test Agencies (OTAs), conducts flight test operations, performs post-flight test analysis and reporting, and performs data distribution and data storage at Pacific Missile Range Facility (PMRF). Defines and interprets THAAD target requirements and assesses proposed target solutions for flight test program. THAAD System Test also conducts lethality assessments of the THAAD system.</p> <p>-Completed the Flight Test THAAD (FTT)-12 Initial Operational Test and Evaluation (IOT&E) to demonstrate near Simultaneous Engagement of a Mid-Endo Separating Target and a High-Endo Non-Separating Target. Additional objectives include: Demonstration of integrated Radar, Launcher, THAAD Fire Control and Communications (TFCC) and Interceptor closed loop operations, engagement functions, and high off-boresight Mid-Endo intercept of a separating target and High-Endo intercept of non-separating target; Demonstration of Interceptor endgame capability for targets intercept; Demonstration of acquisition, track</p>		<p>69.547</p> <p>Articles: 0</p>	<p>99.299</p> <p>0</p>	<p>-</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>and aim-point selection by the Interceptors seeker; and Demonstration of Link 16 Interoperability with 94th Army Air and Missile Defense Command (AAMDC) and Command and Control Battle Management and Communications (C2BMC).</p> <ul style="list-style-type: none"> -Conducted Insensitive Munitions/Final Hazard Classification (IM/FHC) testing to verify system compliance with safety standards. Testing included Fast Cook-off, Slow Cook-off, Drop Test, Bullet Impact and Fragment Impact testing of Interceptor configuration with Thermal Initiated Venting System (TIVS) to ensure safe transportation of Interceptor with TIVS in a Missile Round Pallet (MRP) and Single Missile Round Transport Container (SMRTC) -Completed Hot and Cold Full Spectrum Missile Safety Testing (MST) on two missile rounds at Redstone Test Center (RTC) to support issuance of a safety confirmation statement for THAAD fielding -Completed Government Ground Testing (GGT) to ensure the weapon system can be operated/shipped in all environments -Completed Battery Support Center Deployable Rapid Assembly Shelter (DRASH) regression rail impact test to validate weapon system safety parameters -Completed Launcher rail impact test to validate weapon system safety parameters <p>FY 2012 Plans: Plans include scope that was previously documented in MD07 THAAD plans/accomplishments: THAAD Fire Control and Communication, Launcher, and Interceptor.</p> <ul style="list-style-type: none"> -Support Flight Test, Ground Test, Mission Planning, Performance Assessment, Systems Analysis, and Range Safety analysis in accordance with Integrated Master Test Plan -Continue flight test planning, range interface, coordination with Operational Test Agencies (OTAs) and execution of flight test operations at Reagan Test Site (RTS) for FTI-01 (Ballistic Missile Defense System (BMDS) Integration Flight Test) demonstrating in an operational scenario THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with BMDS Command and Control / Battle Management and Communications (C2BMC) and forward-based AN/TPY-2 -Continue flight test planning, range interface, coordination with Operational Test Agencies (OTAs) at Reagan Test Site (RTS) for FTO-01 (BMDS Operational Flight Test) to further demonstrate in an operational scenario THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2 -Support planning and execution of BMDS interoperability exercises and overlays -Continue to provide pre-mission planning, pre and post mission analysis, reporting support, and execution to BMDS Ground Test campaigns -Provide data management, facilities operations, and post-test analysis and reporting support in support of BMDS System Tests -Monitor targets design, development, delivery, and execution to support flight test program -Support pre-flight testing in the System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) facility 			
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Conduct JITC and Army certification testing to support incremental release of Post Deployment Software Support (PDSS) builds for THAAD Fire Control & Communication (TFCC)</p> <p>-Collect and analyze Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data from flight testing</p> <p>-Onsite range support for THAAD component maintenance, repair and fueling</p> <p>FY 2013 Plans: Plans for this scope are included in MT07 THAAD accomplishments/plans: System Test.</p> <p>Title: Integrated Logistics Support (ILS)</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Provides each THAAD component with all aspects of logistics support. Responsible for transportability of all THAAD system equipment and ensuring the required Government Furnished Equipment (GFE) is available as required by contract. Additionally, works with the user in developing all aspects of training for the components and has a key role in the fielding of the THAAD System to the Army.</p> <p>-Completed New Equipment Training (NET) for Battery #2 to instruct the warfighter on individual soldier tasks and to prepare the warfighter for Unit Collective Training with the tactical hardware</p> <p>-Initiated production of a Mobile Training Device (MTD) to support New Equipment Training (NET) for multiple hardware and software configurations</p> <p>-Initiated Unit Collective Training for Battery #2 to support Battery Commander led training and assessment</p> <p>-Completed 8 Single Missile Round Transport Containers (SMRTC) for transport of Interceptors from Troy, AL Interceptor final assembly building</p> <p>-Procured and emplaced 36 Missile Round Dolly Sets at Anniston Army Depot (ANAD) to allow for the movement and storage of Interceptors at ANAD</p> <p>-Initiated development for Institutional Conduct of Fire Trainer (ICOFT) and THAAD Tabletop Trainer for Institutional Training Base to support U.S. Army requirements for CONUS and OCONUS deployments based on the System Training Plan (STRAP).</p> <p>-Executed Reliability Confidence Testing and analysis to support reliability growth to meet U.S. Army requirements in support of THAAD Materiel Release</p> <p>FY 2012 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Maintenance, Training and Transportation.</p> <p>FY 2013 Plans:</p>	<p>11.522</p> <p>0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Plans for this scope are included in MD07 THAAD accomplishments/plans: Maintenance, Training and Transportation.				
<p>Title: Interceptor</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: The THAAD Interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. The kill vehicle (KV) possesses a Divert and Attitude Control System (DACs) and an infrared Seeker used to destroy its target through hit-to-kill technology.</p> <ul style="list-style-type: none"> -Provided interceptors for Insensitive Munitions/Final Hazard Classification (IM/FHC) testing -Conducted the qualification testing of the Flight Sequencing Assemblies, Optical Blocks, and Automated Test Consoles to prove compliance with MIL-STD-331 requirements -Completed Optical Block and Flight Sequencing Assembly (FSA) design changes to satisfy Ignition System Safety Review Board (ISSRB) requirement -Inspected and refurbished Flight Test Vehicle and installed Range Safety Instrumentation System (RSIS) components to support flight testing -Conducted stockpile reliability test program and development of the Missile Stockpile Test Set (MSTS) to meet U.S. Army requirements -Initiated the procurement of additional Range Safety Instrumentation Safety (RSIS) kits to modify tactical missiles with range safety capability for flight testing -Completed Interceptor Block Qualification Testing (BQT) to validate weapon system safety parameters <p>FY 2012 Plans: Plans for this scope are now included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test and System Test (WSEIT).</p> <p>FY 2013 Plans: Plans for this scope are now included in MD07 THAAD accomplishments/plans: WSEIT and System Test.</p>		<p>23.545</p> <p>Articles: 0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>
<p>Title: Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p>		<p>12.331</p> <p>Articles: 0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>The AN/TPY-2 (THAAD Mode) Radar is a solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The radar utilizes fence, volume, and cued search modes, and provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The radar hardware is a transportable system composed of the Antenna Equipment Unit, Electronics Equipment Unit, Cooling Equipment Unit, and the Prime Power Unit (PPU).</p> <p>-Supported the Initial Operational Test and Evaluation (IOT&E) THAAD FTT-12 (THAAD Intercept Flight Test). This soldier led test consisted of dual simultaneous engagement of two short range Ballistic Missile targets</p> <p>-Provided Radar software for use in Reliability Confidence Testing to meet U.S. Army reliability requirements</p> <p>-Supported verification of Radar capability to meet requirements from the THAAD System Specification and Radar Prime Item Development Specification</p> <p>FY 2012 Plans: These plans are now in the Sensor Program Element (0603884C), budget project MD11.</p> <p>FY 2013 Plans: These plans are now in the Sensor Program Element (0603884C), budget project MD11.</p>				
<p>Title: Batteries #1 and #2</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Batteries #1 and #2 will include a basic load of 48 Interceptors, six Launchers (1 provided by the development contract), two Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode) Radars (provided by Sensors Directorate), 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (2 provided by the development contract), the required Peculiar and Common Support Equipment, and two Interceptors for flight test (provided to development contract). Delivery of Battery hardware began in FY 2009.</p> <p>-Delivered 10 Interceptors and 1 flight test vehicle</p> <p>FY 2012 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test</p> <p>FY 2013 Plans:</p>		<p>87.929</p> <p>Articles: 11</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>		PROJECT MD07: <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
None.					
Title: Sustainment		Articles:	62.065	-	-
			0	0	0
Description: See Description Below					
FY 2011 Accomplishments: THAAD provides logistical support to field, operate, maintain, repair and replenish the THAAD weapon system as it fielded to the Army. Contractor Logistics Support (CLS) technicians are responsible for maintenance and supply chain management of the required spares and repair parts. THAAD provides engineering support services and software maintenance support. The Operations & Sustainment Support associated with the Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars allocated to THAAD Batteries are provided for under the Sensors Program Element.					
-Designed, developed, conducted qualification testing, released, and fielded Post Deployment Software Support (PDSS) builds for each THAAD component					
-Procured replenishment spares for fielded hardware to maintain Battery operational capability					
-Provided Preventive Maintenance Check and Service for THAAD Battery #1 and #2 hardware to ensure continued performance and operation of fielded Batteries					
-Initiated Batteries #1 and #2 Replacement Training Pilot courses to maintain Battery operational capability after soldier rotations.					
FY 2012 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Maintenance, Training and Transportation, and Operation & Maintenance.					
FY 2013 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: Maintenance, Training and Transportation, and Operation & Maintenance.					
Title: Program Management		Articles:	14.300	-	-
			0	0	0
Description: See Description Below					
FY 2011 Accomplishments: Program Management provides strategic planning, program integration, cost estimating, contracting, and financial management for the THAAD Program Office. In addition, THAAD Program Management prepares financial statements, conducts internal					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>review and audit, performs earned-value management, performs program assessments, and is responsible for all aspects of risk management for the THAAD program.</p> <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 #3 & #4 contract</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 2012 Plans: FY 2012 activities are included in Procurement documents.</p> <p>FY 2013 Plans: FY 2013 activities are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test.</p>				
<p>Title: Modeling and Simulations</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: The THAAD element will support the Ballistic Missile Defense System (BMDS) Hardware-in-the-Loop (HWIL) and Digital Modeling and Simulation Program by providing and integrating into the BMDS system-level HWIL single stimulation framework (SSF) and system-level Digital Simulation Architecture (DSA) framework to support full-envelope BMDS performance assessment, ground test, flight test, and training events based upon Agency, OTA, DOT&E, and warfighter needs. BMDS HWIL provides development, integration, and test funding to both MDA and non-MDA Elements participating in the BMDS digital simulation events and ground test campaigns. BMDS Digital Modeling and Simulation and HWIL also provides the core Lethality and Phenomenology models for use in analysis and BMDS and Element mission requirements. BMDS HWIL additionally maintains the Advanced Research Center and Simulation Center High Performance Computing Capabilities to support test and Modeling and Simulation (M&S) requirements across MDA.</p> <p>-Developed, integrated, and tested a common BMDS HWIL stimulation framework with the Elements for the Ground Test, Integrated-04 (GTI-04), Ground Test, Distributed (GTD-04) ground tests</p>		<p>23.715</p> <p>Articles: 0</p>	<p>7.113</p> <p>0</p>	<p>-</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conducted BMDS HWIL stimulation framework Verification and Validation (V&V) for BMDS Ground Test Integrated (GTI)-04 and Ground Test Distributed (GTD)-04 ground tests -Defined and planned for enhancement to the Single Stimulation Framework (SSF) required for execution of the GT-05 campaign to include identification of interdependencies required for execution -Provided Development, Operations and Maintenance, and Independent V&V of standardized phenomenology and lethality tools and models for the common environmental toolset -Evolved and enhanced the SSF to provide increased Warfighter support, specifically Training and Exercises; Integrate the SSF with additional Allied/Coalition elements to expand Distributed Ground Test and Exercise venues; Initiate the technical integration of the SSF with the Digital Stimulation Architecture -Product Line development, sustainment, maintenance and product support for HWIL products -Planned, developed, integrated and tested a common BMDS Hardware-in-the-Loop (HWIL) stimulation framework with the Elements for GTI, GTD ground tests, Active Layered Theatre Ballistic Missile Defense (ALTBMD) exercises, Assured Response (AR) exercises, Foreign Exercises, Near-Term Discrimination (NTD) excursions tests, and Concurrent Test, Training, and Operations (CTTO) demos -Conducted Ballistic Missile Defense System (BMDS) HWIL stimulation framework V&V for BMDS GTX, GTI, GTD ground tests, ALTBMD exercises, Assured Response (AR) exercises, Foreign Exercises, and Concurrent Test, Training and Operations (CTTO) demos -Provided systems engineering support to upgrade the BMDS stimulation framework to support wide band debris for BMDS sensors -Initiated integration of the BMDS stimulation framework with the additional sensors; provided common threat representations and scenarios to meet specific event and customer requirements for BMDS HWIL Framework -Developed and delivered releases of M&S digital products: Digital Simulation Architecture framework for use in Technical Assessments; Missile Defense Space-warning Tool (MDST) for use in Technical Assessments and Warfighter Exercises; BMD International Simulation for use in International virtual BMD demonstrations, BMD education, and Warfighter wargames -Integrated, tested, functionally qualified, and delivered BMDS constructive Performance Assessment Simulation (utilizing DSA and MDST) to support full-envelope BMDS performance assessment for Technical Assessments -Continued software operations/maintenance of the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises -Provided software support for PATRIOT System Effectiveness Model (PSEM) for use in Technical Assessments -Provided transitional DSA framework/modeling support to Command and Control/Battle Management and Communications (C2BMC) software Spiral Testing for MDA's release of C2BMC v8.x development 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Procured, installed 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>FY 2012 Plans:</p> <p>-Develop and deliver major releases of M&S digital products: Digital Simulation Architecture framework for use in Performance Assessment as part of the CD04 Operational Test, real-time venues including Warfighter Exercises, Warfighter Training, C2BMC software Spiral Testing for MDA's release of C2BMC v8.x development, and Ground Test campaign; Missile Defense Space Warning Tool (models validated space-borne assets of BMDS) for use in Performance Assessments and Warfighter Exercises; BMD International Simulation for use in International virtual BMD demonstrations, BMD education, and Warfighter wargames</p> <p>-Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses: Performance Assessment Simulation (utilizing DSA, MDST, and Element-provided high-resolution models) to support full-envelope BMDS performance assessment for Performance Assessment events; Real-time Digital Simulation (utilizing DSA, MDST, and Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaign</p> <p>-Operate and maintain software of the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter Exercises</p> <p>-Provide software support for PATRIOT System Effectiveness Model (PSEM) for use in Performance Assessment events</p> <p>-Control and maintain Performance Assessment Simulation ``ensembles`` for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL</p> <p>FY 2013 Plans:</p> <p>FY 2013 activities are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test (WSEIT).</p>			
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<p>Title: Maintenance, Training and Transportation</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: All FY 2011 activities are funded in MD07 THAAD accomplishments/plans: Integrated Logistic Support and Sustainment.</p> <p>FY 2012 Plans: Plans include scope that was previously documented in MD07 THAAD accomplishments/plans: Integrated Logistics Support.</p> <p>This activity provides maintenance and transportation for each THAAD component and to ensure that Government Furnished Equipment (GFE) is available when required. It develops and maintains THAAD training programs and equipment and conducts training for THAAD Battery fielding. This activity develops the THAAD Objective Supportability Strategy that includes Depot</p>	<p>Articles:</p> <p>-</p> <p>0</p>	<p>49.956</p> <p>0</p>	<p>51.040</p> <p>0</p>
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>Maintenance Support Plan, Level of Repair Analysis, Core Logistics Assessment, Performance Base Agreement, Core Depot Assessment and Source of Repair Analysis, Depot Maintenance Study, and the Demilitarization/Disposal Plan.</p> <p>-The THAAD embedded Army Hybrid Cell is the staff and Internal Operating Budget that perform/execute the scope of the Maintenance, Training and Transportation activity; they are a separate staff from the Program Office Operations. It is composed of combined MDA and Army personnel providing Doctrine, Training, Leadership, Organization, Materiel, Soldier (DTLOMS) support for the THAAD system. The Hybrid Cell provides technical guidance, financial management, cost and schedule performance analysis, cost estimation and analysis, integration activities, and sub-contract management to ensure effective use of appropriated resources</p> <p>-Provide supportability planning & analysis, training oversight, peculiar support equipment, transportation controls, deployment and sustainment support</p> <p>-Complete Collective Training for Battery #2</p> <p>-Continue to plan for THAAD New Equipment Training (NET) and Collective Training for Batteries 3 through 6</p> <p>-Continue to plan for replacement training in support of fielded systems</p> <p>-Provide maintenance support on multiple hardware and software configurations of THAAD components</p> <p>-Continue maintenance, operations and transportation in support of the THAAD development</p> <p>-Continue production of Institutional Conduct for Fire Trainer (ICOFT)</p> <p>-Complete design and initiate production of Radar March Order & Emplacement Trainer (MOET)</p> <p>-Initiate design and production of Table Top Trainer (TT3)</p> <p>-Continue support of Army requirement for additional training devices For Institutional Training Base (ITB) based on update to System Training Plan (STRAP)</p> <p>FY 2013 Plans:</p> <p>-The THAAD embedded Army Hybrid Cell is composed of combined MDA and Army personnel providing Doctrine, Training, Leadership, Organization, Materiel, Soldier (DTLOMS) support for the THAAD system. The Hybrid Cell provides technical guidance, financial management, cost and schedule performance analysis, cost estimation and analysis, integration activities, and sub-contract management to ensure effective use of appropriated resources</p> <p>-Continue Launcher and Radar Embedded Training (ET) development to provide a capability to maintain soldier proficiency in the classroom and in fielded Batteries</p> <p>-Continue development for Institutional Conduct of Fire Trainer (ICOFT) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Continue development of Radar March Order & Emplacement Trainer (RMOET) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Complete production of Table Top Trainer (TT3)</p>			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Initiate spares procurement for Institutional Training Base (ITB) to maintain training devices</p> <p>-Refurbish one Launcher and one Launcher MOET for Institutional Training Base (ITB) to maintain Battery operational capability after soldier rotations</p> <p>-Complete the development of a System Level Interactive Electronic Technical Manual (IETM) for Battery Training to maintain warfighter proficiency</p> <p>Variance Analysis: Increase from FY 2011 to FY 2012 caused by creation of this budget activity to incorporate Integrated Logistic Support and Sustainment. Increase from FY 2012 to FY 2013 due to sustainment of a larger number of fielded assets.</p>			
<p>Title: Project Redwood- Details at a Higher Classification</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 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.</p> <p>FY 2013 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.</p>	Articles: -	21.839	7.396
	0	0	0
Accomplishments/Planned Programs Subtotals	398.748	276.291	229.869

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• O&M: <i>BMD Operations and Maintenance</i>	0.000	202.758	259.975		259.975	297.549	330.851	338.460	350.522	Continuing	Continuing
• Procurement: <i>THAAD Procurement</i>	0.000	709.150	460.728		460.728	565.938	447.427	490.197	463.739	Continuing	Continuing

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D. Acquisition Strategy

The planned acquisition strategy for Advance Capability Development (ACD) activities is for modification to the existing Development contract, award of ACD base contract in FY 2011, and award of an Engineering Services Task Order in FY 2012. The program is posturing for potential competitive awards of select components. Continuation of a Sole Source Task Order Delivery Order Contract for Field Support and Contractor Logistics Support is included.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Weapon Sys Engr Integ & Test (WSEIT) Lockheed Martin 14	SS/CPAF	LMSSC:Sunnyvale, CA; Huntsville, AL	134.165	73.211	Feb 2012	48.985	Nov 2012	-		48.985	Continuing	Continuing	Continuing
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) LMSSC and Raytheon	SS/CPAF	LMSSC and Raytheon:Huntsville, AL	90.256	-		-		-		-	0.000	90.256	0.000
Launcher Lockheed Martin 15	SS/CPAF	LMSSC:Huntsville, AL	31.401	-		-		-		-	0.000	31.401	0.000
Integrated Logistics Support (ILS) Lockheed Martin 17	SS/CPAF	LMSSC/Sunnyvale, CA:Huntsville, AL	79.812	-		-		-		-	0.000	79.812	0.000
Interceptor Lockheed Martin 18	SS/CPAF	LMSSC:CA/ TX,AL,MA,NH,IL,FL & MD	178.237	-		-		-		-	0.000	178.237	0.000
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar Lockheed Martin 19	SS/CPAF	Raytheon:Bedford, MA	294.251	-		-		-		-	0.000	294.251	0.000
Batteries #1 and #2 Lockheed Martin 20	SS/CPIF	LMSSC:Sunnyvale, CA; Huntsville, AL; NM & HI	634.318	-		-		-		-	0.000	634.318	0.000
Batteries #1 and #2 Raytheon	SS/CPIF	Raytheon :Woburn, MA; Huntsville, AL	56.000	-		-		-		-	0.000	56.000	0.000
Sustainment Lockheed Martin 21	SS/CPIF	LMSSC and Raytheon:CA/ TX,AL,MA,NH,IL,FL & MD	156.952	-		-		-		-	0.000	156.952	0.000
Program Management Lockheed Martin 15	SS/CPAF	LMSSC:Sunnyvale, CA; Huntsville, AL	66.846	-		-		-		-	0.000	66.846	0.000
Modeling and Simulations Teledyne Brown Eng	SS/CPAF	THAAD, Huntsville, AL:Huntsville, AL	47.235	7.113	Nov 2011	-		-		-	0.000	54.348	0.000
Subtotal			1,769.473	80.324		48.985		-		48.985			

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Weapon Sys Engr Integ & Test (WSEIT) Contract Support Services (CSS) 1	C/FFP	Dynetics, BAE & L3:Huntsville, AL & Salt Lake City, UT	36.811	13.641	Nov 2011	-		-		-	Continuing	Continuing	Continuing
Weapon Sys Engr Integ & Test (WSEIT) Other Government Agencies (OGA) 1	MIPR	RDEC :Huntsville, AL	63.056	5.477	Nov 2011	-		-		-	Continuing	Continuing	Continuing
Weapon Sys Engr Integ & Test (WSEIT) MDA Program Support 1	MIPR	MDA:Arlington, VA/ Huntsville, AL	46.225	5.755	Nov 2011	61.473	Nov 2012	-		61.473	Continuing	Continuing	Continuing
Weapon Sys Engr Integ & Test (WSEIT) Advanced Capability Development	SS/IDIQ	LMSSC:Sunnyvale, CA/ Huntsville, AL	-	-		38.934	Nov 2012	-		38.934	Continuing	Continuing	Continuing
Weapon Sys Engr Integ & Test (WSEIT) Models & Simulations	MIPR	US Army US Army AMRDEC:Huntsville, AL	-	-		22.041	Nov 2012	-		22.041	Continuing	Continuing	Continuing
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) Contract Support Services 2	C/FFP	Dynetics, DCD, & Davidson Tech:Silver Spring, MD & Huntsville, AL	5.499	-		-		-		-	0.000	5.499	0.000
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) Other Government Agencies 2	MIPR	NRDEC, RDEC :Natick, MA & Huntsville, AL	4.603	-		-		-		-	0.000	4.603	0.000
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) MDA Program Support 2	Various	MDA:Arlington, VA	15.865	-		-		-		-	0.000	15.865	0.000
Launcher Contract Support Services (CSS) 3	C/FFP	Teledyne Solutions:Huntsville, AL	3.514	-		-		-		-	0.000	3.514	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Launcher Other Government Agencies 3	MIPR	RDEC :Huntsville, AL	3.602	-		-		-		-	0.000	3.602	0.000
Launcher MDA Program Support 3	Various	MDA:Huntsville, AL	8.488	-		-		-		-	0.000	8.488	0.000
System Test Contract Support Services (CSS)	C/CPFF	Multiple to include Dynetics, L3 & TSI:Huntsville, AL	56.600	-		-		-		-	0.000	56.600	0.000
System Test Other Government Agency (OGA)	MIPR	Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC:NM, HI, VA & Huntsville, AL	208.366	-		-		-		-	0.000	208.366	0.000
System Test MDA Program Support	Various	MDA:Arlington, VA	31.445	3.300	Nov 2011	-		-		-	0.000	34.745	0.000
Integrated Logistics Support (ILS) Contract Support Services 5	C/FFP	Dynetics, TST.BAE:Huntsville, AL; & Rockville, MD	23.585	-		-		-		-	0.000	23.585	0.000
Integrated Logistics Support (ILS) Other Government Agencies 5	MIPR	IMMC & USAADASCH:Huntsville, AL; & Fort Bliss, TX	22.649	-		-		-		-	0.000	22.649	0.000
Integrated Logistics Support (ILS) MDA Program Support 15	MIPR	CECOM, TACOM, GSA, RDEC & SMDC:Ft. Monmouth, NJ; Warren, MI & Huntsville, AL	4.570	-		-		-		-	0.000	4.570	0.000
Interceptor Contract Support Services (CSS) 6	C/FFP	Dynetics & GA Tech:Huntsville, AL & GA	22.386	-		-		-		-	0.000	22.386	0.000
Interceptor Other Government Agencies 6	MIPR	RDEC & SMDC:Huntsville, AL	19.035	-		-		-		-	0.000	19.035	0.000
Interceptor MDA Program Support 5	Various	MDA:Huntsville, AL	7.463	-		-		-		-	0.000	7.463	0.000
Army Navy/Transportable Radar Surveillance - Model	Various	MDA:Arlington, VA	4.208	-		-		-		-	0.000	4.208	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
2 (AN/TPY-2) Radar MDA Program Support 6													
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar Other Government Agency	MIPR	Multiple to include CECOM, RDEC & SMDC:Ft. Monmouth, NJ & Huntsville, AL	1.598	-		-		-		-	0.000	1.598	0.000
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar Contract Support Services	C/CPFF	Multiple to include Dynetics & GA Tech:Huntsville, AL & GA	2.367	-		-		-		-	0.000	2.367	0.000
Batteries #1 and #2 GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & :Ft. Monmouth, NJ; Warren, MI & Huntsville, AL	1.945	-		-		-		-	0.000	1.945	0.000
Sustainment GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC:Huntsville, AL	0.424	-		-		-		-	0.000	0.424	0.000
Program Management Contract Support Services 4	C/FFP	Dynetics, BAE & Tecolote:Huntsville, AL	17.801	-		-		-		-	0.000	17.801	0.000
Program Management Other Government Agencies 4	MIPR	IMMC & USAADASCH:Huntsville, AL & Fort Bliss, TX	6.215	-		-		-		-	0.000	6.215	0.000
Program Management MDA Program Support 4	Various	MDA:Arlington, VA	9.494	-		-		-		-	0.000	9.494	0.000
Maintenance, Training and Transportation Lockheed Martin 30	SS/CPAF	LMSSC:Sunnyvale, CA/ Huntsville, AL	-	31.000	Nov 2011	-		-		-	Continuing	Continuing	Continuing
Maintenance, Training and Transportation Other Government Agency	MIPR	RDEC:Huntsville,AL/ FT Bliss, TX	-	16.900	Nov 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Maintenance, Training and Transportation MDA Program Support 10	Various	MDA:Huntsville, AL	-	2.056	Nov 2011	7.899	Nov 2012	-		7.899	Continuing	Continuing	Continuing
Maintenance, Training and Transportation Maintenance, Training, Transportation and Operations Support	Various	LMSSC:Sunnyvale, CA/ Huntsville, AL	-	-		35.231	Nov 2012	-		35.231	Continuing	Continuing	Continuing
Maintenance, Training and Transportation Army Cell to Hybrid Program Office	MIPR	Integrated Material Management Center, AMCOM:Huntsville, AL	-	-		7.910	Nov 2012	-		7.910	Continuing	Continuing	Continuing
Project Redwood- Details at a Higher Classification Special Programs	SS/FP	N/A:N/A	-	21.839	Oct 2011	7.396	Oct 2012	-		7.396	Continuing	Continuing	Continuing
Subtotal			627.814	99.968		180.884		-		180.884			

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test Flight Test Planning, Analysis, and Execution	Various	LMSSC:Sunnyvale, CA/ Huntsville, AL	82.457	95.999	Nov 2011	-		-		-	0.000	178.456	0.000
System Test Flight Test Range Infrastructure/ Execution	MIPR	Pacific Missile Range Facilities:Kauai, HI	-	-		-		-		-	0.000	0.000	0.000
System Test Flight Test Support and Planning	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	-	-		-		-		-	0.000	0.000	0.000
System Test BMDs Ground Testing	MIPR	US Army AMRDEC:Huntsville, AL	-	-		-		-		-	0.000	0.000	0.000
Subtotal			82.457	95.999		-		-		-	0.000	178.456	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		2,479.744	276.291		229.869	-		229.869			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
THAAD System B1 S/W Formal Release	▲																											
Block Qualification Test (BQT) Completion		▲																										
Advanced Capability Development Contract Award		▲																										
Insensitive Munitions/Hazards Confidence Testing		+	+																									
Interceptor Block Qualification Test-2		▲																										
Element Weapon System Verification				▲																								
Battery #1 8th Interceptor Delivery				▲																								
Interceptors (2) Deliver for FTT-12 (THAAD Intercept Flight Test)				▲																								
Conduct FTT-12 (THAAD Dual Simultaneous Intercept Flight Test)				▲																								
Battery #1 Interceptor Deliveries Complete				▲																								
Battery #2 Interceptor Deliveries Complete							△																					
Advanced Capability Development Element Requirements Review (ERR)								△																				
Conduct FTI-01 (GMD/Aegis/THAAD/PATRIOT Multiple Integration Flight Test)								△																				
Advanced Capability Development Element Design Review (EDR)												△																
Complete Institutional Conduct of Fire trainer (ICOFT)															△													
Complete Institutional Training Devices																△												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
THAAD System B1 S/W Formal Release	1	2011	1	2011
Block Qualification Test (BQT) Completion	2	2011	2	2011
Advanced Capability Development Contract Award	2	2011	2	2011
Insensitive Munitions/Hazards Confidence Testing	2	2011	3	2011
Interceptor Block Qualification Test-2	2	2011	2	2011
Element Weapon System Verification	4	2011	4	2011
Battery #1 8th Interceptor Delivery	4	2011	4	2011
Interceptors (2) Deliver for FTT-12 (THAAD Intercept Flight Test)	4	2011	4	2011
Conduct FTT-12 (THAAD Dual Simultaneous Intercept Flight Test)	4	2011	4	2011
Battery #1 Interceptor Deliveries Complete	1	2012	1	2012
Battery #2 Interceptor Deliveries Complete	3	2012	3	2012
Advanced Capability Development Element Requirements Review (ERR)	4	2012	4	2012
Conduct FTI-01 (GMD/Aegis/THAAD/PATRIOT Multiple Integration Flight Test)	4	2012	4	2012
Advanced Capability Development Element Design Review (EDR)	1	2014	1	2014
Complete Institutional Conduct of Fire trainer (ICOFT)	4	2014	4	2014
Complete Institutional Training Devices	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT07: <i>THAAD Test</i>	-	-	70.928	-	70.928	78.573	70.546	37.201	71.791	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note
N/A

A. Mission Description and Budget Item Justification

THAAD System Test conducts Ballistic Missile Defense System (BMDS) Flight Test and Ground Test, and Mission Planning in accordance with BMDS Integrated Master Test Plan. THAAD System Test coordinates with Operational Test Agencies, conducts flight test operations, performs post-flight test analysis and reporting, and performs data distribution and data storage at Pacific Missile Range Facility and the Reagan Test Site.

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

	FY 2011	FY 2012	FY 2013
Title: System Test	-	-	70.928
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Accomplishments for this scope are included in MD07 THAAD accomplishments/plans: System Test.			
FY 2012 Plans: Plans for this scope are included in MD07 THAAD accomplishments/plans: System Test.			
FY 2013 Plans: -Continue flight test planning, range interface, coordination with Operational Test Agencies (OTAs) and execution of flight test operations at Reagan Test Site (RTS) for FTO-01 (BMDS Operational Flight Test) to further demonstrate in an operational scenario THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with BMDS Command Control / Battle Management and Communications (C2BMC) and forward-based AN/TPY-2 -Conduct THAAD participation in MDA Ground Test Campaign and Combatant Commander (COCOM) war games, and exercises, as well as Performance Assessments to evaluate system performance and interoperability within the integrated BMDS			
Variance Analysis: Changes from FY 2012 (MD07) to FY 2013 (MT07) due to incorporation of Integrated Master Test Plan.			
Accomplishments/Planned Programs Subtotals	-	-	70.928

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• O&M: <i>BMD Operations and Maintenance</i>	0.000	202.758	259.975		259.975	297.549	330.851	338.460	350.522	Continuing	Continuing
• Procurement: <i>THAAD Procurement</i>	0.000	709.150	460.728		460.728	565.938	447.427	490.197	463.739	Continuing	Continuing

D. Acquisition Strategy

The planned acquisition strategy for Advance Capability Development activities is for modification to the existing Development contract and award of Task Order contract, targeted for award in FY 2012. The program is posturing for potential competitive awards of select components. Continuation of a Sole Source Task Order Delivery Order Contract for Field Support and Contractor Logistics Support is included.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test Flight Test Planning, Analysis, and Execution	Various	LMSSC:Sunnyvale, CA/ Huntsville, AL	-	-		18.583	Nov 2012	-		18.583	Continuing	Continuing	Continuing
System Test Flight Test Range Infrastructure/ Execution	MIPR	Reagan Test Site:Kwajalein Atoll	-	-		12.604	Nov 2012	-		12.604	Continuing	Continuing	Continuing
System Test Flight Test Support and Planning	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	-	-		20.428	Nov 2012	-		20.428	Continuing	Continuing	Continuing
System Test BMDs Ground Testing and Flight Test Support	MIPR	US Army AMRDEC:Huntsville, AL	-	-		19.313	Nov 2012	-		19.313	Continuing	Continuing	Continuing
Subtotal			-	-		70.928		-		70.928			

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Subtotal			-	-		-		-		-	0.000	0.000	0.000	

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		70.928		-		70.928			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct FTO-01 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)											△																	
Conduct FTT-11a (THAAD Intercept Flight Test)															△													
Conduct FTO-2 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)																				△								
Conduct FTT-15 (THAAD Intercept Flight Test)																											△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct FTO-01 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)	3	2013	3	2013
Conduct FTT-11a (THAAD Intercept Flight Test)	4	2014	4	2014
Conduct FTO-2 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)	4	2015	4	2015
Conduct FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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COST (\$ in Millions)	FY 2011		FY 2012		FY 2013		FY 2014		FY 2015		Cost To Complete	Total Cost
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017			
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	1.128	1.230	1.145	-	1.145	1.103	1.121	1.236	1.260	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0			

Note

N/A

A. Mission Description and Budget Item Justification

PATRIOT Advanced Capability (PAC 3) is one of the most mature elements of the Ballistic Missile Defense System 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 PATRIOT Advanced Capability-3 System was deployed to the Middle East as part of Operation Iraqi Freedom where it successfully engaged several ballistic missiles.

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. LTPO will utilize MDA funds to further the integration of PATRIOT into the BMDS. These funds are covering day to day tasks leveraged upon the LTPO by MDA to support meetings and RFIs. These funds are placed on contract to the SETA contractor.

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

	FY 2011	FY 2012	FY 2013
Title: General Support	1.128	1.230	1.145
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-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 2012 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 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-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.			
Accomplishments/Planned Programs Subtotals	1.128	1.230	1.145

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing

D. Acquisition Strategy

The design objective of the PATRIOT system is to provide an element of the Ballistic Missile Defense System capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
General Support General Support	C/FFP	ITT/CAS:Huntsville, AL	2.360	1.230	Jan 2012	1.145	Jan 2013	-		1.145	Continuing	Continuing	Continuing
Subtotal			2.360	1.230		1.145		-		1.145			

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Subtotal			-	-		-		-		-	0.000	0.000	0.000	

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	34.720	1.230		1.145		-		1.145			

Remarks
NA

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	20.963	12.555	14.987	-	14.987	15.163	16.486	12.286	14.169	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012, Program Wide Support reflects a proportional decrease as a result of adjustments to the BMD Terminal Defense Segment.

In FY 2013, Program Wide Support reflects a proportional increase as a result of increases to the BMD Terminal Defense Segment.

A. Mission Description and Budget Item Justification

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). Includes Government Civilians, Advisory and Assistance Services, Federally Funded Research and Development (FFRDC) contracts 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. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	20.963	12.555	14.987
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	20.963	12.555	14.987

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	MD40: <i>Program-Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	1,245.489	1,159.456	903.172	-	903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
MD08: <i>Ground Based Midcourse</i>	1,194.267	1,111.226	569.622	-	569.622	531.906	567.019	542.809	458.062	Continuing	Continuing
MT08: <i>Ground Based Midcourse Test</i>	-	-	80.381	-	80.381	131.304	132.956	142.869	143.823	Continuing	Continuing
MX08: <i>Ground Based Midcourse Development Support</i>	-	-	207.133	-	207.133	205.210	207.563	216.272	217.317	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	51.222	48.230	46.036	-	46.036	46.183	46.531	46.700	43.682	Continuing	Continuing

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 (silos, silo interface vaults, environmental control systems, command launch equipment, 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. GMD has the ability to quickly expand to 38 GBIs by FY 2015. 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 in FY 2015. The GMD capability leverages integration of Ballistic Missile Defense System sensors in Japan, Alaska, California, United Kingdom, Greenland, and Turkey. Development objectives for GMD include: testing and validating the performance of the Capability Enhancement I and II (CE-I and CE-II) GBIs, development and testing of capability upgrades (e.g., Near-Term Discrimination improvements), manufacturing additional GBIs in support of operational requirements, flight testing, the Stockpile Reliability Program including GBI upgrades to improve interceptor fleet reliability and sustaining the fielded system.

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management costs in support of 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1,346.181	1,161.001	1,040.949	-	1,040.949
Current President's Budget	1,245.489	1,159.456	903.172	-	903.172
Total Adjustments	-100.692	-1.545	-137.777	-	-137.777
• Congressional General Reductions	-8.926	-1.545			
• Congressional Directed Reductions	-35.000	-			
• Congressional Rescissions	-23.500	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.755	-			
• SBIR/STTR Transfer	-33.481	-			
• Other Adjustment	0.970	-	-137.777	-	-137.777

Change Summary Explanation

FY 2011 adjustments include Congressional reduction (DoD and Full year continuing Appropriation Act, Public Law 112-10) and reflects realignment to DoD priorities.

FY 2012 decrease of \$1.545M reflects a congressional general reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

FY 2013 adjustments reflects realignment to DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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COST (\$ in Millions)	FY 2013			FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
	FY 2011	FY 2012	Base								
MD08: <i>Ground Based Midcourse</i>	1,194.267	1,111.226	569.622	-	569.622	531.906	567.019	542.809	458.062	Continuing	Continuing
Quantity of RDT&E Articles	1	5	5		5	0	0	0	0		

Note

Changes from President's Budget FY 2012 Submission:

The Flight Test Ground Based Interceptor-06a (FTG-06a) Test Failure drove changes to the Ground-Based Midcourse Defense (GMD) development and test program. The test failure identified a technical issue with the Capability Enhancement-II (CE-II) Ground Based Interceptor (GBI) configuration, causing MDA to halt planned CE-II deliveries as root cause of the failure and resolution of the failure was confirmed. Having now identified root cause of failure through additional ground testing of the CEII EKV, GMD implemented the necessary design changes in order to support and conduct a non-intercept flight test, Controlled Test Vehicle-01 (CTV-01), to prove the resolution is effective and then re-conduct the intercept test mission, Flight Test Ground Based Interceptor-06b (FTG-06b).

Starting in FY 2013, the Sustainment accomplishment will move from Project MD08 into Project MX08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment.

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

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 GBIs and sensor architecture to ensure the probability of successful intercepts against first generation Intercontinental Ballistic Missiles (ICBMs).

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

In FY 2011, a Failure Review Board (FRB) determined the cause of unsuccessful intercept of Flight Test Ground-Based Midcourse Defense-06a (FTG-06a). GMD is executing a Return to Intercept program that addresses the root cause, develops modified designs, and confirms a solution to the issue through intensive ground testing and a non-intercept flight test, CTV-01. This will be followed by an intercept test mission, Flight Test Ground-Based Midcourse Defense-06b (FTG-06b).

GMD continued to build sub-assemblies that are not affected by FTG-06a root cause failure for the Interceptors (GBI) 34-44, and the Flight Test Interceptors required to support the Return to Intercept program (CTV-01 and FTG-06b). GMD will continue long lead development and manufacturing for GBIs 48-57 in support of operational

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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requirements incorporating FRB resolutions, flight testing, and the Stockpile Reliability Program. Once the corrective action is verified through ground testing and a controlled flight test (CTV-01), operational interceptor manufacturing will resume.

The Ground Based Midcourse Defense (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) Ground Systems 6B1.5 suite delivery to integrate an additional forward based Army/Navy Transportable Radar Surveillance-2 (AN/TPY-2) radar using the Ballistic Missile Defense System Command, Control, Battle Management, and Communications (C2BMC) System; 2) Ground Systems 6B2 suite delivery to provide expanded C2BMC essential elements of information for situational awareness, dynamic positioning capability for the In Flight Interceptor Communications System Data Terminal on the Sea Based X-Band Radar platform, Sea Based X-Band Radar version 3 interoperability, Warfighter requested changes, enables the use of data provided by up to 14 AN-TPY-2 radars; 3) Ground Based Interceptor Exoatmospheric Kill Vehicle (EKV) software version 9 (CE- II) and version 22 (CE-I) to incorporate in-flight performance improvements and support to the flight test program; 4) Fort Greely Power Plant, Missile Field-2, and 2nd GMD Fire Control Node delivery to improve operational reliability, survivability and availability; 5) Flight Test the weapon system against an Intermediate Range Ballistic Missile (IRBM) target with associated objects; 6) Ground Test the weapon system as a part of Ground Test - 04 (GT-04) campaign to assess Ballistic Missile Defense System capabilities.

GMD also continues to develop an Enhanced Homeland Defense capability against intermediate and long-range Ballistic Missiles threats. Work scope includes: 1) Ground Systems 6B3 suite delivery to use Near Term Discrimination data, integrate the Clear, AK Upgrade to Early Warning Radar (UEWR) and Ft. Drum, NY In-Flight Interceptor Communications System Data Terminals (IDT) assets, support Space-Based Infrared System interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes; 2) Ground Based Interceptor EKV software version 10 (CE-II) and version 23 (CE-I) to incorporate in-flight performance improvements and support to the flight test program; 3) Fort Drum IDT delivery to increase system performance in specific engagement scenarios; 4) Flight Test the weapon system against targets with increasing complexity and in a salvo launch sequence; 5) Demonstrate the ability to integrate future BMDS sensor improvements (e.g., Precision Tracking Space Surveillance); 6) Ground Test the weapon system as a part of Ground Test - 06 (GT-06) campaign to assess Ballistic Missile Defense System capabilities.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Ground Based Interceptor</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Due to the Flight Test Ground-Based Midcourse Defense-06a (FTG-06a) Test failure, delivery of Capability Enhancement-II (CE-II) Interceptors (Ground Based Interceptors 34-44) was put on hold. However, GMD continued to build sub-assemblies that are not affected by FTG-06a root cause failure for the Ground-Based Interceptors (GBI) 34-44, and the Flight Test Interceptors required to support the Return to Intercept program (CTV-01 and FTG-06b). Root cause of the FTG-06a failure has been determined and failure resolution development is ongoing for the CE-II GBI configuration. Flight Test Interceptor manufacturing continues and once the corrective action is verified through ground testing and a controlled test vehicle flight (CTV-01), operational</p>	<p>352.613</p> <p>0</p>	<p>446.679</p> <p>5</p>	<p>295.242</p> <p>5</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>interceptor manufacturing and delivery will resume. The GBI program supports defense of the Homeland by manufacturing both flight test and operational interceptors (GBIs 34-44) to both demonstrate interceptor performance as part of the Return to Intercept (RTI) program, and then to replace older fielded configuration GBIs to ensure a total of 30 operational assets are available to the Warfighter. To aid in the accomplishment of this mission, the GBI program provides developmental assets through conversion of older fielded GBIs to Flight Test configuration to support the Integrated Master Test Plan. Ground Based Interceptor software builds will also be initiated to implement Single Shot Probability of Kill improvements and booster software changes to accommodate the Fleet Avionics Upgrade / Obsolescence Program.</p> <ul style="list-style-type: none"> -Completed three limited upgrades of CE-I fielded GBIs and initiated 2 additional limited upgrades -Completed testing of Exoatmospheric Kill Vehicle (EKV) software version 9.4 (CE-II) and initiated software version 22.1 (CE-I) -Continued acquisition of eleven Interceptors (GBIs 34-44) to support both operations and testing for non-flight failure related assemblies, components, and boosters -Continued acquisition of booster and EKV components including motor sets for five additional new Interceptors (GBIs 48-52), mitigating manufacturing restart costs of the select group of warm GBI 3rd and 4th tier suppliers -Initiated flight test rotation plan of older fielded GBI to Flight Test configuration to support Integrated Master Test Plan requirements and Stockpile Reliability Program -Continued GBI Stockpile Reliability Program which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet and flight test rotation upgrade requirements -Completed FTG-06a Failure Review Board (FRB) and published report -Initiated Return-to-Intercept (RTI) component lab testing (failure resolution testing and risk reduction testing) with the completion of 6 different test series and initiation of one other test series -Initiated repurposing of three operational GBIs to support GMD RTI series: GM CTV-01, FTG-06b, and FTG-06b Backup -Initiated RTI EKV hardware mitigation / redesign efforts for Isolated Inertial Measurement Unit (IMU) Assembly. -Initiated EKV Divert and Attitude Control System (DACS) Alternate Thruster design <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Continue GBI Fleet Upgrade program to enhance reliability of the fielded GMD system and to support the Stockpile Reliability Program by providing hardware for data collection events, such as Aging & Surveillance testing -Continue acquisition of Interceptors (GBIs 34-44) (subject to FTG-06a Failure Review Board (FRB) findings and resolution) to support both operations and testing -Complete the repurposing of two operational Ground Based Interceptors (GBIs) to support GMD Return-to-Intercept (RTI) series: GM Controlled Vehicle Test-01 (CTV-01) and Flight Test Ground Based Interceptor-06b (FTB-06b) -Continue the repurposing of one operational GBI to support GMD RTI series: FTG-06b Flight Test Back-up 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Continue flight test rotation program of older fielded GBIs to support Integrated Master Test Plan requirements, Stockpile Reliability Program, and to increase operational reliability -Complete RTI component lab testing (failure resolution testing and risk reduction testing): complete Test E (Chamber Hot Fire) test series -Complete RTI Exoatmospheric Kill Vehicle (EKV) software mitigation / redesign efforts and Inertial Measurement Unit (IMU) firmware resolution / validation -Initiate incorporation of RTI resolution findings into GBI fleet -Initiate Upgrade Kit and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs to support flight test rotations of older GBIs as part of the program plan to sustain the GBI to FY 2032 and beyond -Complete purchase of booster and EKV components including motor sets for five Interceptors (GBIs 48-52), mitigating manufacturing restart costs of the select group of warm GBI 3rd and 4th tier suppliers -Initiate acquisition of 5 Interceptors (GBIs 48-52) that are supported by the completion of the booster and EKV component purchases -Continue GBI Stockpile Reliability Program which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet upgrade requirements -Continue EKV Divert and Attitude Control System Alternate Thruster design <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Continue acquisition of Interceptors (GBIs 34-44) (subject to FTG-06a Failure Review Board (FRB) findings and resolution) to support both operations and testing -Complete the repurposing of one operational GBI to support GMD RTI series: FTG-06b Backup -Continue incorporation of RTI resolution findings into GBI fleet -Continue GBI Software Builds and Sustainment to support operational and flight test objectives -Continue GBI Stockpile Reliability Program which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet upgrade requirements -Continue acquisition of five Interceptors (GBIs 48-52) that are supported by the completion of the booster and Exoatmospheric Vehicle component purchases -Continue EKV Divert and Attitude Control System (DACS) Alternate Thruster design -Initiate acquisition of five additional Interceptors (GBIs 53-57) to support enhanced GMD testing 			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
-Variance Analysis: FY 2011 budget increase to FY 2012 position due to RTI activities for Flight Test Ground Based Interceptor-06a (FTG-06a) hardware/software design resolutions and qualification in ground and flight test events. FY 2012 budget decrease to FY 2013 position due to completion of Return to Intercept (RTI) activities.				
Title: Ground Systems		205.790	73.301	69.975
		Articles: 1	0	0
Description: See Description Below				
FY 2011 Accomplishments: 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, Test Exerciser, and External Systems Interface (ESI), GMD Communications Network, In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Site Components (LSC) (silos, silo interface vaults (SIVs)), and Launch Support Systems (LSS) (Command Launch Equipment (CLE) and Launch Support Equipment (LSE)).				
-Fielded Ground Systems suite 6B1.5 to integrate additional forward based Army/Navy Transportable Radar Surveillance radar using the Ballistic Missile Defense System Command and Control, Battle Management, and Communications (C2BMC) with the GMD Ground System				
-Delivered Formal Qualification Tested (FQT) Ground Systems suite 6B2 for GMD to provide C2BMC essential elements of information for situational awareness, dynamic positioning capability for the In Flight Interceptor Communications System Data Terminal on the Sea Based X-Band Radar platform, Sea Based X-Band Radar version 3 interoperability, Warfighter requested changes, use of data provided by Army Navy/Transportable Radar Surveillance radars with the GMD Ground Systems, and supports activation of Fort Greely, Alaska Missile Field-2				
-Continued construction and integration of a new fourteen silo Missile Field-2 and Missile Field-2 Mechanical Electrical Building (MEB) to provide the Warfighter with an operationally configured Missile Field capability at Fort Greely, Alaska				
-Continued the Missile Defense Complex Communications infrastructure repairs at Fort Greely, Alaska to meet current DoD / Army operational standards				
-Completed construction of the Fort Greely Power Plant to improve operational reliability and survivability				
-Initiated design and installation of a second Fire Direction Center (FDC) Node at Fort Greely, Alaska to provide the Warfighter with continuous dual-node operations				
FY 2012 Plans:				
-Initiate Ground Systems suite 6B3 to utilize Near Term Discrimination (NTD) data, integrate the Clear, AK UEWR and Ft. Drum, NY IDT assets, support Space-Based Infrared System interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Deliver the new fourteen silo Missile Field-2 (MF-2) and Missile Field-2 Mechanical Electrical Building (MEB) to provide the Warfighter with a reliable and hardened Missile Field capability at Fort Greely, Alaska</p> <p>-Deliver the second Fire Direction Center (FDC) Node at Fort Greely, Alaska to provide the Warfighter with continuous dual-node operations</p> <p>-Initiate preliminary design in preparation for construction of an In Flight Interceptor Communications System (IFICS) Data Terminal (IDT) for Ft Drum, New York increased defensive capability against emerging threats</p> <p>-Initiate design efforts for storage state of MF-1 once MF-2 is complete and operational</p> <p>-Complete the deployment of the Fort Greely Power Plant</p> <p>FY 2013 Plans:</p> <p>-Continue Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK UEWR and Ft. Drum, NY IDT assets, support Space-Based Infrared System interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes</p> <p>-Complete the preliminary design and initiate construction efforts for an In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) at Fort Drum that will increase system performance in specific engagement scenarios</p> <p>-Continue storage state efforts for the Fort Greely, AK Missile Field-1 (MF-1)</p> <p> </p> <p>-Variance Analysis: FY 2011 budget decrease to FY 2012 position due to completion of: Missile Field 2, Fort Greely Power Plant, and Ground Systems suite 6B1.5 and 6B2. FY 2012 budget decrease to FY 2013 N/A.</p>				
<p>Title: Sustainment</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: The Operations and Sustainment mission provides for the operations, maintenance, repair, training, sustaining engineering (including stock pile reliability and logistics) of the Ground-Based Midcourse Defense (GMD) System. In addition to the above, provide base operations support for Ground-Based Midcourse Defense facilities in Colorado Springs, Colorado; Vandenberg Air Force Base, California; Fort Greely, Alaska; and Eareckson Air Station, Alaska. Execution of the Operations and Sustainment mission will be achieved through a combination of directed activities under the competitively awarded Performance Based Logistics contract (operations, maintenance, repair and training) and through direct placement of funding to mission essential activities (stockpile reliability, logistics, base operations costs and Government Furnished Equipment).</p>		182.184 0	198.138 0	- 0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Provided Ground Based Midcourse Defense (GMD) Element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all GMD sites</p> <p>-Continued utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability.</p> <p>-Continued on-site sustaining engineering, ensuring logistics analysis is incorporated in technical data products</p> <p>-Continued Stockpile Reliability Program (SRP) and component aging testing to understand the health of the deployed assets</p> <p>-Continued to train, educate, qualify and certify the Warfighter as well as develop and field technical manuals to maintain crew proficiency and support architecture baseline changes</p> <p>-Continued Base Operations Support at all GMD sites in accordance with host installation support agreements</p> <p>FY 2012 Plans:</p> <p>-Continue to provide Ground-Based Midcourse Defense (GMD) element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all Ground-based Midcourse Defense sites</p> <p>-Continue to support Base Operations at all Ground-Based Midcourse Defense Sites in accordance with host installation support agreements</p> <p>-Continue utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability</p> <p>-Continue on-site sustaining engineering, for real time trouble shooting and ensuring logistics analysis is incorporated in technical data products</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>-Continue to perform failure analysis and resolve systemic issues to reduce sustainment costs</p> <p>-Continue to identify and prioritize obsolescence issues for resolution to support Ground Systems Obsolescence Upgrade Program</p> <p>-Continue to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system</p> <p>-Continue to develop and field technical manuals to maintain crew proficiency and support architecture baseline changes</p> <p> </p> <p>-Variance Analysis: FY 2011 budget increase to FY 2012 N/A.</p> <p>FY 2013 Plans:</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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Starting in FY 2013, the Sustainment accomplishment will move into Project MX08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment.

Title: BMDS Level Testing	88.233	102.572	-
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

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

- Conducted Flight Test Ground-Based Midcourse Defense 06a (FTG-06a), a 3-stage intercept of Intermediate Range Ballistic Missile (IRBM) target based on results from the FTG-06 3-stage intercept engagement with associated objects, using a Ground Based Interceptor (GBI) launch from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS) but did not achieve planned intercept.
- Verified corrective actions from FTG-06 failure
- Collected Critical Engagement Conditions / Empirical Measurement Event data that validates Models and Simulations estimates on interceptor performance in medium closing velocity engagements and EKV performance with multiple competing objects
- Initiated the Flight Test Ground Based Interceptor-06a (FTG-06a) failure response, which includes the conduct of a non-intercept test in FY 2012, to verify FTG-06a corrective actions. The non-intercept test will be Controlled Test Vehicle-01 (CTV-01), a 3-stage Capability Enhancement II (CE-II) non-intercept test of the EKV, using a GBI launch from Vandenberg Air Force Base, California. There is no target planned for this test
- Demonstrated increased sensor coverage during Ground Test Integrated-04 (GTI-04) with the addition of the Thule Upgraded Early Warning Radar (UEWR) Hardware in the Loop (HWIL) capability
- Continued to support execution of Ballistic Missile Defense System (BMDS) Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors (e.g., additional AN TPY-2 and Thule)
- Initiated planning for Flight Test Ground-Based Midcourse Defense-06b (FTG-06b), a 3-stage intercept engagement with associated objects, using a Ground Based Interceptor (GBI) launch from Vandenberg Air Force Base against a target launched from Reagan Test Site (RTS)

FY 2012 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Continue to support execution of Ballistic Missile Defense System (BMDS) Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors</p> <p>-Conduct non-intercept flight test (GM CTV-01), to convincingly demonstrate corrective actions from flight test FTG-06a as part of the GMD Return to Intercept (RTI) Plan, a 3-stage Capability Enhancement II (CEII) non-intercept test of the Exoatmospheric Kill Vehicle (EKV), using a Ground-Based Interceptor(GBI) launch from Vandenberg Air Force Base, California. There is no target planned for this test.</p> <p>-Verify FTG-06a corrective actions</p> <p>-Collect critical Engagement Conditions / Empirical Measurement Event data that validates Models and Simulations estimates on EKV discrimination performance</p> <p>-Demonstrate upgrades on the EKV as a risk reduction in preparation for GMD intercept flight test FTG-06b</p> <p>-Conduct Flight Test Ground-Based Midcourse Defense-06b (FTG-06b) as early as FY 2012 but not later than 1QFY13, a 3-stage Capability Enhancement II (CEII) intercept engagement with associated objects, using a GBI launch from Vandenberg Air Force Base, California against a target launched from RTS</p> <p>-Collect critical Engagement Conditions / Empirical Measurement Event data that validates Models and Simulations estimates on booster, avionics and divert systems performance over time and EKV discrimination performance on new threat scene with more and different types of multiple competing objects</p> <p>-Variance Analysis: FY 2011 budget increase to FY 2012 position due to support of RTI program requirements through the addition of a Control Test Vehicle-01 (CTV-01) flight test and Flight Test Ground-Based Interceptor-06b (FTG-06b).</p> <p>FY 2013 Plans: Starting in FY 2013, the BMDS Level Testing accomplishment will move from Project MD08 into Project MT08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment.</p>				
Title: Element Engineering and Integration		157.675	133.721	85.466
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: Ground-Based Midcourse Defense (GMD) Element Engineering and Integration (EE&I) provides systems engineering and integration essential for the development and fielding of the Ground-Based Midcourse Defense hardware and software. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification efforts.				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated Ground-Based Midcourse Defense element capability.</p> <ul style="list-style-type: none"> -Continued requirements development, engineering analysis, capability integration, and performance verification for Ground-Based Midcourse Defense (GMD) development and Ballistic Missile Defense System (BMDS) integration, including GMD compliance with the BMDS Specification, BMDS Description Document, and Master Integration Plan -Continued Technical Performance Measurement program to assess the current GMD capabilities against the evolving BMDS threat -Continued modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments -Continued modeling and simulation verification and validation to establish high confidence in Warfighter assessments -Conducted GMD Build D Element Requirements Review for Ground Systems 6B3, Exoatmospheric Kill Vehicle (EKV) software version 10 Capability Enhancement-II (CE-II) and version 23 Capability Enhancement-I (CE-I) software development for successful integration and synchronization of future BMDS capabilities -Continued design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter -Utilized EKV Hardware-In-The-Loop 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing and Post Flight Reconstruction in support of Return-To-Intercept (RTI) -Continued to define requirements on the Ground Systems suite 6B2 of products for GMD to provide Command and Control, Battle Management and Communications essential elements of information for situational awareness, dynamic positioning capability for the In-Flight Interceptor Communications System Data Terminal on the Sea Based X-Band Radar platform, Sea Based X-Band Radar version 3 interoperability, Warfighter requested changes, use of data provided by Army Navy/Transportable Radar Surveillance radars with the GMD Ground Systems, and support activation of Fort Greely, Alaska Missile Field-2. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Continue requirements development, engineering analysis, capability integration, and performance verification for Ground-Based Midcourse Defense development and Ballistic Missile Defense System integration, including GMD compliance with the BMD System Specification, BMD System Description Document, and Master Integration Plan -Continue Technical Performance Measurement program to assess the current GMD capabilities against the evolving BMDS threat -Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments -Continue modeling and simulation verification and validation to establish high confidence in Warfighter assessments 			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Support Component Requirements Reviews and Preliminary Design Reviews for the Ground-based Missile Defense contribution to the Ballistic Missile Defense Systems Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and Ground Based Interceptor (GBI) hardware (e.g., Fleet Avionics Upgrade / Obsolescence Program) and software capabilities development to ensure delivery of a successful capability</p> <p>-Continue design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter</p> <p>-Utilize Exoatmospheric Kill Vehicle Hardware-In-The-Loop 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing (PMT) and Post Flight Reconstruction (PFR) in support of Return to Intercept</p> <p>-Conduct Exoatmospheric Kill Vehicle (EKV) Capability Enhancement II (CE-II) performance and flight environment analysis from Controlled Test Vehicle (CTV-1) flight test to assess EKV mitigations</p> <p>FY 2013 Plans:</p> <p>-Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration, including GMD compliance with the BMDS Specification, BMDS Description Document, and Master Integration Plan</p> <p>-Continue Technical Performance Measurement program to assess the current GMD capabilities against the evolving BMDS threat</p> <p>-Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments</p> <p>-Continue modeling and simulation verification and validation to establish high confidence in Warfighter assessments</p> <p>-Support Component Requirements Reviews and Preliminary Design Reviews 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., Fleet Avionics Upgrade / Obsolescence Program) and software capabilities development to ensure delivery of a successful capability</p> <p>-Continue design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter</p> <p>-Utilize EKV Hardware-In-The-Loop 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing and Post Flight Reconstruction in accordance with the Integrated Master Test Plan to reduce execution risks from additional data and gaining confidence that capabilities performed as expected</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
-Variance Analysis: FY 2011 budget decrease to FY 2012 position due to focus on GBI RTI and completion of systems engineering and integration activities on legacy contracts. FY 2012 budget decrease to FY 2013 position due to systems engineering and integration activities moving to MX08 and MT08 from MD08.				
Title: Program Integration and Control		207.772	156.815	118.939
Articles:		0	0	0
Description: See Description Below				
FY 2011 Accomplishments: Program Integration and Control provides for the prime contractor and 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 logistic support, and government manpower and infrastructure to develop, test and sustain the GMD system and components. -Provided 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 -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 -Ensured GMD program compliance with internal and external direction, policies, and regulations to deliver capability critical within a consistent and disciplined process -Conducted internal Baseline Execution Reviews to measure program progress against the six Missile Defense Agency approved baselines -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 -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 to the Warfighter				
FY 2012 Plans: -Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities -Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Ensure GMD program compliance with internal and external direction, policies, and regulations -Conduct Internal Baseline Reviews that align with the six Missile Defense Agency (MDA) approved baselines -Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety -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>FY 2013 Plans:</p> <ul style="list-style-type: none"> -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 -Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and test oversight to identify variances and initiate corrective actions to mitigate cost, schedule, or performance impacts -Ensure Ground-Based Midcourse Defense program compliance with internal and external direction, policies, and regulations to deliver capability critical 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>-Variance Analysis: FY 2011 budget decrease to FY 2012 position due to completion of program management activities on legacy contracts and transition to lower rate MDA contractor support services. FY 2012 budget decrease to FY 2013 position due to program management activities moving to MT08 and MX08 from MD08 and for Global Deployment support.</p>				
Accomplishments/Planned Programs Subtotals		1,194.267	1,111.226	569.622

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603888C: <i>Ballistic Missile</i> <i>Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637

D. Acquisition Strategy

The Ground-Based Midcourse Defense (GMD) program will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes 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. This acquisition approach minimizes the risk of obsolescence, 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.

Ground-Based Midcourse Defense (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 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

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Ground Based Interceptor Ground Based Interceptors 34-44	SS/CPAF	Boeing AL/AK/AZ:CA/ CO/TX/VA	429.644	146.702		116.956		-		116.956	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Upgrades & Operational Spares	C/CPIF	Boeing AL/AK/AZ:CA/ CO/TX/VA	95.159	82.162	Dec 2011	59.784		-		59.784	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Supplier Restart / Requalification	SS/CPAF	Boeing AL/AK/AZ:CA/ CO/TX/VA	90.029	18.765		-		-		-	0.000	108.794	0.000
Ground Based Interceptor Ground Based Interceptors Software Maintenance & Updates	C/CPIF	Boeing AL/AK/AZ:CA/ CO/TX/VA	9.590	10.074	Dec 2011	11.550		-		11.550	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors New Interceptor Development	C/CPIF	Boeing AL/AK/AZ:CA/ CO/TX/VA	39.114	21.007	Dec 2011	59.789		-		59.789	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Rotations for Ballistic Missile Defense System Level Testing	C/CPIF	Boeing AL/AK/AZ:CA/ CO/TX/VA	146.677	67.170	Dec 2011	23.095		-		23.095	Continuing	Continuing	Continuing
Ground Based Interceptor Stockpile Reliability Program	C/CPIF	Boeing AL/AK/AZ:CA/ CO/TX/VA	4.364	12.381	Dec 2011	12.607		-		12.607	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors 48-57	C/CPIF	Boeing AL/AK/AZ:CA/ CO/TX/VA	-	2.777	Dec 2011	11.461		-		11.461	Continuing	Continuing	Continuing
Ground Based Interceptor Return to Intercept Program	SS/CPAF	Boeing AL/AK/AZ:CA/ CO/TX/VA	27.317	85.641		-		-		-	0.000	112.958	0.000
Ground Systems Long Haul Communications Transfer to Defense Information Systems Agency	MIPR	MDA DISA:AL/AK/AZ/ CA/CO/TX/VA	32.967	5.585		-		-		-	0.000	38.552	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Systems Ground Systems Engineering Services	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	39.378	-	Dec 2011	1.359		-		1.359	Continuing	Continuing	Continuing
Ground Systems Ground Systems Software Development 6B.3	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	27.804	32.823	Dec 2011	33.183		-		33.183	Continuing	Continuing	Continuing
Ground Systems Fort Drum IDT	C/CPIF	Boeing AL:CO/NY/VA	-	4.100	Dec 2011	7.600		-		7.600	Continuing	Continuing	Continuing
Ground Systems Ground Systems Information Assurance	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	-	14.291	Dec 2011	7.714		-		7.714	Continuing	Continuing	Continuing
Ground Systems Ground Systems FAU/OP Hardware Development	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	-	-	Dec 2011	15.964		-		15.964	Continuing	Continuing	Continuing
Ground Systems Storage State MF-1	C/CPIF	Boeing AL/AK/AZ:CA/CO	-	-	Dec 2011	4.155		-		4.155	Continuing	Continuing	Continuing
Ground Systems FGA Future Power Plant Integration	SS/CPAF	Boeing AL/AK/AZ:CA/CO/VA	-	16.502		-		-		-	0.000	16.502	0.000
Subtotal			942.043	519.980		365.217		-		365.217			

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sustainment Maintenance of Primary System	C/CPIF	Boeing AL/AK/AZ:CA	340.137	71.028	Dec 2011	-		-		-	0.000	411.165	0.000
Sustainment Sustaining Support Services	C/CPIF	Boeing AL/AK/AZ:CA	309.149	47.379	Dec 2011	-		-		-	0.000	356.528	0.000
Sustainment Operations & Sustainment Repair and Maintenance Personnel	C/CPIF	Boeing AL/AK/AZ:CA	54.333	12.353	Dec 2011	-		-		-	0.000	66.686	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sustainment RAM-T	MIPR	Naval Surface Warfare Center:IN	51.047	3.780		-		-		-	0.000	54.827	0.000
Sustainment Fort Greely, Alaska Operations (Gov't Leases & Services)	MIPR	Army:Ft. Greely, AK	38.729	19.935		-		-		-	0.000	58.664	0.000
Sustainment Vandenberg Air Force Base Operations (Gov't Leases & Services)	MIPR	Air Force:Vandenberg, CA	4.500	3.925		-		-		-	0.000	8.425	0.000
Sustainment Colorado Springs Operations (Gov't Leases & Services)	MIPR	Air Force:COS, CO	8.200	3.920		-		-		-	0.000	12.120	0.000
Sustainment Government Furnished Equipment & Services (GFX)	MIPR	Military Traffic Management Command:Various AL/AK/AZ/CA/CO/TX/VA	33.797	10.684		-		-		-	0.000	44.481	0.000
Sustainment Storage State Missile Field 1 Planning	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	-	0.200		-		-		-	Continuing	Continuing	Continuing
Sustainment Information Assurance	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	20.996	4.064	Dec 2011	-		-		-	0.000	25.060	0.000
Sustainment Warfighter Training	C/FPIF	Boeing AL/AK:CA/CO/VA	-	20.870	Dec 2011	-		-		-	0.000	20.870	0.000
Element Engineering and Integration Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	68.402	32.845		25.748		-		25.748	Continuing	Continuing	Continuing
Element Engineering and Integration Modeling and Simulation	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	88.342	43.750	Dec 2011	30.740		-		30.740	Continuing	Continuing	Continuing
Element Engineering and Integration System Engineering and Integration	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	189.728	28.886	Dec 2011	15.764		-		15.764	Continuing	Continuing	Continuing
Element Engineering and Integration EKV HWIL Tests in Space Chamber	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	53.224	28.240	Dec 2011	13.214		-		13.214	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Integration and Control Global Deployment Support	MIPR	MDA:AL	53.847	22.218		-		-		-	0.000	76.065	0.000
Program Integration and Control Prime Program Management	SS/FPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	221.220	39.438	Dec 2011	17.024		-		17.024	Continuing	Continuing	Continuing
Program Integration and Control Govt Civilian Salaries	MIPR	MDA:AL/VA	73.750	31.616		39.083		-		39.083	Continuing	Continuing	Continuing
Program Integration and Control FFRDC Support	MIPR	MIT/LL:AL/VA/CO	16.742	3.949		2.107		-		2.107	Continuing	Continuing	Continuing
Program Integration and Control Contract Support Services	C/CPFF	Sparta, BCF, Quantech, Paradigm:AL/AK/CA/CO/VA	194.729	35.808		38.619		-		38.619	Continuing	Continuing	Continuing
Program Integration and Control Other Govt Agencies	MIPR	Various:AL/VA/FL/CO	15.300	5.034		3.154		-		3.154	Continuing	Continuing	Continuing
Program Integration and Control Travel	MIPR	MDA:AL/VA	-	1.913		1.346		-		1.346	Continuing	Continuing	Continuing
Program Integration and Control Misc Software/BB/ Change of Station	MIPR	MDA:AL/CA/VA/CO/AK	-	0.550		0.931		-		0.931	Continuing	Continuing	Continuing
Program Integration and Control Small Business Innovation Research (SBIR)	MIPR	MDA:AL/VA	-	15.863		16.675		-		16.675	Continuing	Continuing	Continuing
Program Integration and Control Safety and Quality	MIPR	MDA:AL/AK/CA/VA	-	0.426		-		-		-	Continuing	Continuing	Continuing
Subtotal			1,836.172	488.674		204.405		-		204.405			

Remarks
Starting in FY 2013, the Sustainment accomplishment will move from Project MD08 into Project MX08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMDS Level Testing Ground Test-04 Campaign (Focused-Integrated-Distributed)	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	15.640	11.013	Dec 2011	-		-		-	0.000	26.653	0.000
BMDS Level Testing Flight Test Range Costs	MIPR	VAFB, CA/RTS, Kwaj:PMRF, HI	24.486	6.400		-		-		-	0.000	30.886	0.000
BMDS Level Testing Flight Test Planning, Analysis & Execution	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	137.872	53.478	Dec 2011	-		-		-	0.000	191.350	0.000
BMDS Level Testing Test Infrastructure & Support	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	86.629	16.872	Dec 2011	-		-		-	0.000	103.501	0.000
BMDS Level Testing Flight Test Silo Turnaround	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	7.420	6.586	Dec 2011	-		-		-	0.000	14.006	0.000
BMDS Level Testing EKV HWIL Flight Tests in Space Chamber	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	-	8.223	Dec 2011	-		-		-	0.000	8.223	0.000
Subtotal			272.047	102.572		-		-		-	0.000	374.619	0.000

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

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

Remarks
N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,050.262	1,111.226	569.622	-	569.622			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks NA								
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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-06a (Ground Based Interceptor Asset)																												
FTG-06a (GM Intercept Flight Test)	▲																											
Ground Systems 6B2 (FQT)		▲																										
GTD-04b (BMDS Distributed Ground Test)		●																										
2nd FGA GMD Fire Control Node					▲																							
Fort Greely, Alaska Missile Field - 2	✦	✦	✦	✦	✦	✦																						
GM CTV-01 (GM Non-Intercept Flight Test)									○																			
FTG-06b (GM Intercept Flight Test)									○																			
Fort Greely, Alaska Power Plant	✦	✦	✦	✦	✦	✦	✦																					
Ground-based Midcourse Defense Ground Test-04 test campaign		✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground Based Interceptors (34-44)	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground Systems 6B3 (FQT)												△																
Fort Drum, NY IDT								✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground Based Interceptors (48-57)					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground Based Interceptors Rotation and Upgrades	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTG-06a (Ground Based Interceptor Asset)	1	2011	1	2011
FTG-06a (GM Intercept Flight Test)	1	2011	1	2011
Ground Systems 6B2 (FQT)	2	2011	2	2011
GTD-04b (BMDS Distributed Ground Test)	2	2011	2	2011
2nd FGA GMD Fire Control Node	1	2012	1	2012
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Fort Greely, Alaska Missile Field - 2	1	2011	2	2012
Ground Based Interceptor CTV-01 (GBI 42)	3	2012	3	2012
GM CTV-01 (GM Non-Intercept Flight Test)	3	2012	3	2012
Ground Based Interceptor FTG-06b (GBI 43)	4	2012	4	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
Ground Based Interceptor FTG-06b Back-up (GBI 44)	1	2013	1	2013
Fort Greely, Alaska Power Plant	1	2011	3	2012
Ground-based Midcourse Defense Ground Test-04 test campaign	2	2011	4	2013
Ground Based Interceptors (34-44)	1	2011	2	2014
Ground Based Interceptor 34	3	2013	3	2013
Ground Based Interceptor 35	3	2013	3	2013
Ground Systems 6B3 (FQT)	4	2013	4	2013
Ground Based Interceptor 36	4	2013	4	2013
Ground Based Interceptor 37	4	2013	4	2013
Ground Based Interceptor 38	1	2014	1	2014
Ground Based Interceptor 39	2	2014	2	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Based Interceptor 40	2	2014	2	2014
Ground Based Interceptor 41	3	2014	3	2014
Fort Drum, NY IDT	2	2012	1	2015
Ground Based Interceptors (48-57)	1	2012	4	2017
Ground Based Interceptor (48)	2	2016	2	2016
Ground Based Interceptor (49)	3	2016	3	2016
Ground Based Interceptors Rotation and Upgrades	1	2011	4	2017
Ground Based Interceptor (50)	4	2016	4	2016
Ground Based Interceptor (51)	4	2016	4	2016
Ground Based Interceptor (52)	1	2017	1	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT08: <i>Ground Based Midcourse Test</i>	-	-	80.381	-	80.381	131.304	132.956	142.869	143.823	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

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

Variance Analysis: FY 2012 budget decrease to FY 2013 position due to FTG-06b moving from FY 2013 to FY 2012 and Integration of Exoatmospheric Kill Vehicle Hardware-In-The-Loop and Space Chamber tests moving to Element Engineering and Integration.

A. Mission Description and Budget Item Justification

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 are intended to demonstrate the integrated missile defense capabilities under development and ensure the capabilities transferred to the Warfighter are operationally effective, suitable, and survivable.

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

	FY 2011	FY 2012	FY 2013
Title: Infrastructure	-	-	40.557
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Currently located in Budget Project MD08 (\$17.720M)			
FY 2012 Plans: Currently located in Budget Project MD08 (\$16.872M)			
FY 2013 Plans: 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, as well as flight test execution and post-flight analysis. -Provide test infrastructure and coordination of flight test range support from Vandenberg Air Force Base for all range activities, engineering, operators and GBI transportation			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Provide Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the Ground Based Midcourse Defense system from Colorado Springs, CO</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 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>Title: Flight Test</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Currently located in Budget Project MD08 (\$56.690M)</p> <p>FY 2012 Plans: Currently located in Budget Project MD08 (\$74.687M)</p> <p>FY 2013 Plans: 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 BMDS Element interoperability under operationally realistic conditions.</p> <p>-Complete post-mission analysis for Flight Test Ground-Based Midcourse Defense-06b (FTG-06b), a 3-stage Capability Enhancement II (CEII) intercept engagement with associated objects, using a GBI launch from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS)</p> <p>-Initiate planning for the Flight Test Ground-Based Midcourse Defense-08 (FTG-08), intercept engagement with associated objects, using a GBI launch from Vandenberg Air Force Base, California against an Intermediate Range Ballistic Missile target</p> <p>-Initiate planning for the Flight Test Ground-Based Midcourse Defense-11 (FTG-11), a salvo intercept test against one Intercontinental Ballistic Missile target with associated objects, using Ground-Based Interceptors launched from Vandenberg Air Force Base, California</p>		Articles:	-	-
		0	0	27.119
Title: Ground Test		-	-	12.705
		0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Currently located in Budget Project MD08 (\$13.823M)</p> <p>FY 2012 Plans: Currently located in Budget Project MD08 (\$11.013M)</p> <p>FY 2013 Plans: 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>-Complete support and execution of BMDS Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors -Initiate planning of BMDS Ground Test-06 test campaign</p>			
Accomplishments/Planned Programs Subtotals	-	-	80.381

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	0.000	2,763.751

D. Acquisition Strategy

The Ground-Based Midcourse Defense (GMD) program will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes 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. This acquisition approach minimizes the risk of obsolescence, 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	MT08: <i>Ground Based Midcourse Test</i>

Ground-Based Midcourse Defense (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 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

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Prime Program Management	C/FPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	1.004		-		1.004	Continuing	Continuing	Continuing
Infrastructure Systems Engineering	C/CPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	0.930		-		0.930	Continuing	Continuing	Continuing
Infrastructure Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-		7.753		-		7.753	Continuing	Continuing	Continuing
Flight Test Prime Program Management	C/FPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	1.067		-		1.067	Continuing	Continuing	Continuing
Flight Test Systems Engineering	C/CPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	0.988		-		0.988	Continuing	Continuing	Continuing
Ground Test Prime Program Management	C/FPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	0.543		-		0.543	Continuing	Continuing	Continuing
Ground Test System Engineering	C/CPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	0.503		-		0.503	Continuing	Continuing	Continuing
Subtotal			-	-		12.788		-		12.788			

Remarks

Starting in FY 2013, the BMDS Level Testing accomplishment moved from MD08 into Project MT08.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Infrastructure Test Communications	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	7.794		-		7.794	Continuing	Continuing	Continuing
Infrastructure Support Infrastructure	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	9.693		-		9.693	Continuing	Continuing	Continuing
Infrastructure Test Labs	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	12.916		-		12.916	Continuing	Continuing	Continuing
Infrastructure Additional Ground Test Activities	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	0.467		-		0.467	Continuing	Continuing	Continuing
Flight Test Integration EKV HWIL Tests in Space Chamber	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	-		-		-	Continuing	Continuing	Continuing
Flight Test Planning, Analysis & Execution	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	18.182		-		18.182	Continuing	Continuing	Continuing
Flight Test Flight Test Range Costs	MIPR	VAFB, CA:RTS, Kwaj PMRF, HI	-	-	Dec 2011	2.143		-		2.143	Continuing	Continuing	Continuing
Flight Test Flight Test Silo Turnaround	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	4.739		-		4.739	Continuing	Continuing	Continuing
Ground Test Ground Test-04 Campaign (Focused-Integrated-Distributed)	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	10.356		-		10.356	Continuing	Continuing	Continuing
Ground Test Ground Test-06 Campaign (Focused-Integrated-Distributed)	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	-	-	Dec 2011	1.303		-		1.303	Continuing	Continuing	Continuing
Subtotal			-	-		67.593		-		67.593			

Remarks

Starting in FY 2013, the BMDS Level Testing accomplishment moved from MD08 into Project MT08.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		80.381		-		80.381			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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		✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧																
Ground-based Midcourse Defense Ground Test-06 test campaign													✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧				
FTG-08 (GM Intercept Flight Test)														○														
FTG-11 (GM SALVO Intercept Flight Test)																		○										
FTG-13 (GM Intercept Flight Test)																						○						
Ground-based Midcourse Defense Ground Test-07 test campaign																									✧	✧	✧	✧
FTG-15 (GM Intercept Flight Test)																												○

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground-based Midcourse Defense Ground Test-04 test campaign	2	2011	4	2013
GTI-04e (BMDS Integrated HWIL Ground Test) (NORTHCOM/PACOM)	2	2013	2	2013
GTI-04e (BMDS Integrated HWIL Ground Test)	3	2013	3	2013
GTD-04e (BMDS Distributed Ground Test) (NORTHCOM/PACOM)	4	2013	4	2013
GTX-06a (Focused Strategic Ground Test)	1	2014	3	2014
Ground-based Midcourse Defense Ground Test-06 test campaign	1	2014	1	2017
FTG-08 (GM Intercept Flight Test)	3	2014	3	2014
GTI-06a (BMDS Integrated HWIL Ground Test)	1	2015	1	2015
GTD-06a (BMDS Distributed Ground Test) (NORTHCOM/PACOM)	2	2015	3	2015
GTX-06b (NORTHCOM/PACOM)	3	2015	1	2016
FTX-10	3	2015	3	2015
FTG-11 (GM SALVO Intercept Flight Test)	4	2015	4	2015
GTI-06b	1	2016	3	2016
GTD-06B (NORTHCOM/PACOM)	4	2016	1	2017
FTG-13 (GM Intercept Flight Test)	4	2016	4	2016
Ground-based Midcourse Defense Ground Test-07 test campaign	4	2016	4	2017
GTX-07b (Focused Strategic Ground Test) (NORTHCOM/PACOM)	2	2017	4	2017
FTG-15 (GM Intercept Flight Test)	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse Development</i> <i>Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MX08: <i>Ground Based Midcourse Development Support</i>	-	-	207.133	-	207.133	205.210	207.563	216.272	217.317	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

Starting in FY 2013, the Sustainment accomplishment will move from Project MD08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment, to Project MX08.

A. Mission Description and Budget Item Justification

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

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

	FY 2011	FY 2012	FY 2013
Title: Sustainment	-	-	207.133
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Currently located in Budget Project MD08, 0603882C (\$182.184M)			
FY 2012 Plans: Currently located in Budget Project MD08, 0603882C (\$198.138M)			
FY 2013 Plans: The Operations and Sustainment mission provides for the operations, maintenance, repair, training, sustaining engineering (including stock pile reliability and logistics) of the Ground-Based Midcourse Defense (GMD) System. In addition to the above, provide base operations support for GMD facilities in Colorado Springs, Colorado; Vandenberg Air Force Base, California; Fort Greely, Alaska; and Eareckson Air Station, Alaska. Execution of the Operations and Sustainment mission will be achieved through a combination of directed activities under the competitively awarded Performance Based Logistics contract (operations, maintenance, repair and training) and through direct placement of funding to mission essential activities (stockpile reliability, logistics, base operations costs and Government Furnished Equipment).			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Continue to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all GMD sites -Continue to support Base Operations at all GMD sites in accordance with host installation support agreements -Continue utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability -Continue on-site sustaining engineering, for real time trouble shooting and ensuring logistics analysis is incorporated in technical data products -Continue to collect Reliability, Availability, Maintainability and Test data and calculate and track performance metrics on the Operational System -Continue to perform failure analysis and resolve systemic issues to reduce sustainment costs -Continue to identify and prioritize obsolescence issues for resolution to support Ground Systems Obsolescence Upgrade Program -Continue to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system -Continue to develop and field technical manuals to maintain crew proficiency and support architecture baseline changes <p style="margin-top: 20px;">-Variance Analysis: FY 2012 budget decrease to FY 2013 position due to ramp down of Obsolescence Mitigation activities and transition of Stockpile Reliability Program to Ground Based Interceptor accomplishments. FY 2012 portion is located in Project MD08, Sustainment Accomplishment, 0603882C.</p>			
Accomplishments/Planned Programs Subtotals	-	-	207.133

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

N/A

D. Acquisition Strategy

The Ground-Based Midcourse Defense (GMD) program will continue to follow the Missile Defense Agency’s capability-based acquisition strategy that emphasizes 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. This acquisition approach minimizes the risk of obsolescence, 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	MX08: <i>Ground Based Midcourse Development</i> <i>Support</i>

Ground-Based Midcourse Defense (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 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse Development</i> <i>Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sustainment Maintenance of Primary System	SS/CPIF	Boeing AL/AK/AZ:CA/VA	-	-	Dec 2011	72.551		-		72.551	Continuing	Continuing	Continuing
Sustainment Sustaining Support Services	SS/CPIF	Boeing AL/AK/AZ:CA/VA	-	-	Dec 2011	54.466		-		54.466	Continuing	Continuing	Continuing
Sustainment Operations & Sustainment Repair and Maintenance Personnel	SS/CPIF	Boeing AL/AK/AZ:CA/VA	-	-	Dec 2011	11.310		-		11.310	Continuing	Continuing	Continuing
Sustainment RAM-T	MIPR	Naval Surface Warfare Center:IN	-	-		3.245		-		3.245	Continuing	Continuing	Continuing
Sustainment Fort Greely, Alaska Operations (Gov't Leases & Services)	MIPR	Army Ft. Greely:AK	-	-		19.196		-		19.196	Continuing	Continuing	Continuing
Sustainment Vandenberg Air Force Base Operations (Gov't Leases & Services)	MIPR	Air Force Vandenberg:CA	-	-		4.304		-		4.304	Continuing	Continuing	Continuing
Sustainment Colorado Springs Operations (Gov't Leases & Services)	MIPR	Air Force COS:CO	-	-		3.905		-		3.905	Continuing	Continuing	Continuing
Sustainment Government Furnished Equipment & Services (GFX)	MIPR	Military Traffic Management Command:Various AL/AK/AZ/CA/CO/TX/VA	-	-		8.081		-		8.081	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse Development</i> <i>Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sustainment Warfighter Training, Exercises, and Wargames	MIPR	MDA:AL/CO	-	-		12.669		-		12.669	Continuing	Continuing	Continuing
Sustainment Information Assurance	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	-	-	Dec 2011	3.312		-		3.312	Continuing	Continuing	Continuing
Sustainment Program Management	C/FPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	-	-	Dec 2011	7.334		-		7.334	Continuing	Continuing	Continuing
Sustainment Systems Engineering	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	-	-	Dec 2011	6.760		-		6.760	Continuing	Continuing	Continuing
Subtotal			-	-		207.133		-		207.133			

Remarks
Starting in FY 2013, the Sustainment accomplishment moved from Project MD08 into Project MX08.

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

Remarks
N/A

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency							DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>			PROJECT MX08: <i>Ground Based Midcourse Development</i> <i>Support</i>				
	Total Prior Years Cost		FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	-		-	207.133	-	207.133				

Remarks

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	51.222	48.230	46.036	-	46.036	46.183	46.531	46.700	43.682	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012 and FY 2013, Program Wide Support reflects proportional decreases as a result of decreases to the Ballistic Missile Defense Mid-Course Defense Segment.

A. Mission Description and Budget Item Justification

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). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts 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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	51.222	48.230	46.036
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	51.222	48.230	46.036

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD40: <i>Program-Wide Support</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	389.259	222.075	347.012	-	347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
MD11: <i>BMDs Radars</i>	374.436	211.682	257.656	-	257.656	225.300	240.853	248.890	225.505	Continuing	Continuing
MT11: <i>BMDs Radars Test</i>	-	-	72.388	-	72.388	85.892	103.909	76.015	84.058	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	14.823	10.393	16.968	-	16.968	16.150	17.758	16.875	16.532	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

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

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

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

- Development, delivery and deployment of remote, forward based Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) radars to provide early warning, track, and discrimination data through all phases of ballistic missile flight. Through the BMDs C2BMC and coalition datalinks, the AN/TPY-2 provides fire control data to enable remote 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.

The operation and sustainment of AN/TPY-2 software is maintained across the fleet of AN/TPY-2 radars, to include radars in Japan, Israel, and Turkey. Lessons learned from each radar are addressed in new software builds that are developed, tested, and subsequently installed at each radar.

AN/TPY-2 radars can be configured to operate either as a THAAD Fire Unit Radar (terminal mode) or Forward-Based Radar. These radars are transportable, adding flexibility to respond to geographical changes in threats. Under this Program Element, seven AN/TPY-2 radars have completed manufacturing. The AN/TPY-2 used in a forward-based role provides detection and tracking during the boost phase. This significantly reduces the uncertainty in target discrimination and reaction time,

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>
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increasing the probability of a successful BMDS engagement. In forward-based mode, the AN/TPY-2 also provides acquisition and track data via the Ballistic Missile Defense System Command, Control, Battle Management and Communications (C2BMC) and Link 16 to the Aegis missile defense system for cueing. The AN/TPY-2 used in terminal mode is an integral component of the THAAD Battery. The THAAD battery radar is capable of tracking multiple threats and multiple interceptors during engagements in the terminal phase. It provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The current and planned utilization of the AN/TPY-2 radars supports GMD, THAAD, and the Aegis Weapon System via C2BMC.

The BMDS network of sensors also includes the Cobra Dane Radar at Eareckson Air Force Station in Alaska, Upgraded Early Warning Radars at Beale Air Force Base, Fylingdales RAF Station, UK, and at Thule Air Force Station in Greenland.

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

The Clear EWR located at Clear Air Force Station, AK, is also being upgraded to include missile defense functionality. Upgrade activities will begin in FY 2012 and be completed in FY 2016. The addition of the Clear UEWR into the BMDS sensor architecture will improve BMDS sensor coverage and provide new engagement options against long-range missile threats and reduce reliance on the Cobra Dane asset.

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

- Participation in BMDS flight and ground test campaigns
- Modeling and simulation efforts to include: enhanced sensor models, development of radio frequency (RF) scene generators, integration of digital simulations into the BMDS modeling and simulation architecture, and verification, validation, and accreditation (VV&A) of radar models.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	454.859	222.374	357.271	-	357.271
Current President's Budget	389.259	222.075	347.012	-	347.012
Total Adjustments	-65.600	-0.299	-10.259	-	-10.259
• Congressional General Reductions	-2.660	-0.299			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-62.700	-			
• Reprogrammings	1.044	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-1.284	-	-10.259	-	-10.259

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

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

R-1 ITEM NOMENCLATURE
PE 0603884C: *Ballistic Missile Defense Sensors*

Change Summary Explanation

The FY 2011 decrease of \$65.600M .reflects a congressional reduction (Department of Defense and Full Year Continuing Appropriation Act, Public Law 112-10) and a congressional transfer of funds to MDA Test and Targets Program Elements 0603888C

The FY 2012 decrease of \$0.299M reflects a congressional reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

The FY 2013 reduction of \$10.259M reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD11: <i>BMDS Radars</i>	374.436	211.682	257.656	-	257.656	225.300	240.853	248.890	225.505	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Activities in this project include:

- Development of future AN/TPY-2 and UEWR radars 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 efforts to include: enhanced sensor models, development of RF scene generators, integration of digital simulations into the BMDS modeling and simulation architecture, and VV&A of radar models
- Participation in BMDS flight and ground test campaigns

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

	FY 2011	FY 2012	FY 2013
Title: UEWR (Beale, Fylingdales, Thule) & COBRA DANE Sustainment/Upgrades	20.253	-	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Continued UEWR/CD Common Mission software sustainment			
-Provided for program management office support personnel			
FY 2012 Plans:			
FY 2012 (\$15.600M) UEWR and Cobra Dane software sustainment transitioned to O&M. Funding for UEWR/CD program office (\$6.655M) support is found under the Sensors Directorate Operations accomplishment paragraph below.			
FY 2013 Plans:			
-Execute emerging software upgrades to UEWR`s			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
FY 2013 (\$13.400M) UEWR and Cobra Dane software sustainment transitioned to O&M. Funding for UEWR/CD program office support (\$3.375M) is found under the Sensors Directorate Operations accomplishment paragraph below.				
Title: X-Band Basic Program		59.632	12.847	29.725
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Completed Verification and Validation of the first selectable software build (CX-1) -Initiated development of the next generation processor replacing superdome units in AN/TPY-2 radars -Supported the THAAD Reliability Confidence Test (RCT) which demonstrated an established reliability growth curve by conducting a 200-hour plus endurance test to support a THAAD Conditional Materiel Release				
FY 2012 Plans: -Continue development of the Advanced Processor Platform (Superdome Obsolescence Program) -Continue development of selectable X-Band software builds				
FY 2013 Plans: -Continue Material Release Closure Plan for AN/TPY-2, including a Forward Based Mode (FBM) Material Release Reliability, Availability, and Maintainability (RAM) Get Well plan to promote reliability growth in the suite of AN/TPY-2 radars via incorporation of retrofit change notices -Support the Superdome Obsolescence program, including reliability enhancements to the AN/TPY-2 Signal Processor -Support RAM Scoring Conferences to validate radar reliability growth -Initiate Debris Mitigation Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3) and provide enhanced Warfighter capability in complex tactical environments -Conduct Threat Compliance Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3 Threats) -Initiate Enhanced Calibration Unit (ECU) Program development				
Title: BMDS Radars (Sustainment)		118.082	-	-
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Operated and sustained 7 AN/TPY-2 radars: three (3) forward-based radars (OCONUS), two (2) THAAD battery radars (US), one (1) AN/TPY-2 test asset (PMRF), and refurbishment of one AN/TPY-2				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Provided depot level logistics support for seven AN/TPY-2 radars supporting BMDS forward Based Radar Sites and THAAD Batteries</p> <p>-Operated and sustained radar during integration testing at Vandenberg Air Force Base (VAFB), White Sands Missile Range (WSMR), and Pacific Missile Range Facility (PMRF) or Reagan Test Site (RTS)</p> <p>-Provided AN/TPY-2 operational spares, repair, and replacement parts</p> <p>-Provided AN/TPY-2 Forward-based Radar operators/maintainers, site maintenance, fuel, utility, and communications support costs</p> <p>-Operated and sustained the Ground-based Radar - Prototype (GBR-P) in caretaker status</p> <p>-Completed AN/TPY-2 Transition and Transfer Annex</p> <p>-Achieved Material Release of AN/TPY-2 to lead service -- Army</p> <p>-Refurbished AN/TPY-2 Radar #4</p> <p>-Demonstrated X-Band resolution of FTG-06 problems in FTG-06A</p> <p>FY 2012 Plans: For FY 2012, operations and sustainment Contractor Logistical Support (CLS) of the AN/TPY-2 radars moves to O&M appropriation</p> <p>FY 2013 Plans: For FY 2013, operations and sustainment (CLS) of the AN/TPY-2 radars is funded with O&M appropriation.</p>				
<p>Title: BMDS Level Testing</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Planned and executed sensors participation in BMDS flight tests, including GMD Intercept Flight Test FTG-06a and Aegis flight test FTM-15, the first test to demonstrate Phased Adaptive Approach capabilities</p> <p>-Continued to plan and execute sensors participation in BMDS ground test campaign GT-04 (includes support to hardware-in-the-loop (HWIL) and Distributed testing for EPAA deployment)</p> <p>-Planned and executed HWIL #1 in support of the CENTCOM deployment</p> <p>-Continued to plan for testing in support of the EPAA and CENTCOM deployments</p> <p>-Initiated planning for sensors participation in FY 2012 BMDS flight tests and ground tests</p> <p>FY 2012 Plans:</p> <p>-Plan and execute sensors participation in BMDS flight tests IAW the BMDS Integrated Master Test Plan</p> <p>-Plan and execute sensors participation in BMDS ground test campaign in accordance with the BMDS IMTP</p>		<p>35.777</p> <p>Articles: 0</p>	<p>48.640</p> <p>0</p>	<p>-</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Plan and execute AN/TPY-2 support for THAAD flight tests in FY 2012 (previously funded in BMD Terminal Defense PE 0603881C).</p> <p>-Initiate planning for sensors participation in FY 2013 BMDS flight tests and ground tests</p> <p>FY 2013 Plans: Plans for FY 2013 are described in Budget Project MT11.</p>				
<p>Title: BMDS Radars Concurrent Test, Training & Operations (CTTO) Infrastructure</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Refined AN/TPY-2 and UEWR Single Stimulation Framework (SSF) interfaces to support BMDS ground test campaigns -Continued delivery of X-Band Simulator Test (XST) simulation model based on Radar Digital Signal Injection System (RDSIS) to provide hardware-in-the-loop (HWIL) service that will interface with the SBX and X-Band family of radars and provide more accurate debris modeling -Delivered UEWR CTTO capabilities at Beale, Thule, and Fylingdales in support of GTD-04b -Completed delivery of a COBRA DANE CTTO implementation design -Initiated upgrades of MDA test labs to implement the CTTO design</p> <p>FY 2012 Plans: This effort has been transferred to the C2BMC program element 0603896C Budget Project MD01.</p> <p>FY 2013 Plans: This effort has been transferred to the C2BMC program element 0603896C Budget Project MD01.</p>		<p>5.482</p> <p>Articles: 0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>
<p>Title: BMDS Radars Modeling & Simulation (M&S)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Completed V&V report and Certification Letter for the Common Software Simulation (CXSIM) v1.0 supporting AN/TPY-2 CX1.2 -Continued development of digital simulation of first generation common software for AN/TPY2 CXSIM (CX1.3) for participation in Technical Assessment 04 and Performance Assessment 04 (TA04/PA04) Event -Completed development of XST simulation model based on RDSIS to provide the diffuse cloud model and simple antenna motion -Completed V&V report and Certification Letter for the RDSIS supporting AN/TPY-2 CX1</p>		<p>10.299</p> <p>Articles: 0</p>	<p>4.900</p> <p>0</p>	<p>16.190</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDs Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Completed development of the Open Systems Architecture Sensor Models (OSM) with a focus on OSM-S version representing tactical software version SBX 3.1</p> <p>-Supported TA04 and PA04 planning, integration, risk reduction testing, and event execution, using OSM to represent SBX, CDU, and UEWR sensors and CXSIM representing AN/TPY2</p> <p>-Maintained digital and HWIL representations of the tactical versions of AN/TPY2 (CX1.3), SBX 3.1, UEWR 8.2.3, and CDU 2.6.6 and continued enhancements of these sensor models as required through application of critical engagement conditions and empirical measurement events (CEC/EMEs)</p> <p>FY 2012 Plans:</p> <p>-Continue to support Technical Assessments and Performance Assessments using OSM</p> <p>-Continue to maintain digital and HWIL representations of the tactical versions of AN/TPY2 (CX1.3), SBX 3.1, UEWR 8.2.3, and CDU 2.6.6 and CEC/EME implementation</p> <p>FY 2013 Plans:</p> <p>-Continue to support Technical Assessments and Performance Assessments, using Open Systems Architecture Sensor Models (OSM) and other models/tools, as appropriate</p> <p>-Continue to maintain digital and HWIL representations of the tactical versions of AN/TPY2 (CX1.3), SBX 3.1, UEWR 8.0.3, and CDU 2.6.7 and Critical Engagement Condition and Empirical Measurement Event implementation</p> <p>-Continue to fund and support all UEWR software updates tests in the HWIL simulations in Huntsville</p> <p>-Continue development of digital simulations of first generation common software and OSM models deferred from FY 2012</p>				
Title: Sensors Engineering		10.896	1.050	26.366
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments:				
<p>-Conducted Certification and Accreditation for all Sensors systems</p> <p>-Implemented DoD 8500 Information Assurance (IA) Policy/ Guidance</p> <p>-Conducted Information Assurance/Computer Network Defense (IA/CND) Engineering Requirements Development and Architecture Integration</p> <p>-Supported Bi-Annual Information Assurance testing for vulnerabilities and Third Party Information Assurance assessments of the systems</p>				
FY 2012 Plans:				
Continue to conduct IA certification and accreditation of all Sensors systems				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Continue to conduct engineering trade studies for sensor registration, discrimination, system track, battle management and other system functions FY 2013 Plans: -Continue to conduct IA certification and accreditation of all sensors systems -Support Bi-Annual Information Assurance (IA) testing for vulnerabilities and Third Party IA assessment of the systems -Provide debris mitigation and threat compliance engineering support to enable compliance with BMDS System Spec Threat Requirements -Provide Counter-countermeasures (CCM) Program Development engineering support				
Title: External Sensors Articles:		18.598 0	- 0	- 0
Description: See Description Below FY 2011 Accomplishments: -Initiated integration of GEO1 and Third Generation Infrared Sensor (3GIRS) data sources into ESL Baseline Release (EBR) software. The launch schedules for the GEO1 Air Force asset and 3GIRS commercial asset are such that on-orbit checkout will not be finished in time to support completing the EBR in FY 2011 -Demonstrated new Overhead Persistent Infrared (OPIR) sensor capabilities for cueing radar and ABIR assets -Conducted flight tests and hardware in the loop demonstrations of Airborne Infra-red (ABIR), OPIR, and Space Tracking and Surveillance System (STSS) data fusion -Developed, installed and demonstrated ESL capabilities on new Linux-based hardware FY 2012 Plans: Funds (\$17.560M) and plans are described in Advanced Technology PE 0603175C Budget Project MD25. FY 2013 Plans: Funds (\$18.087M) and plans are described in Advanced Technology PE 0603175C Budget Project MD25.				
Title: AN/TPY-2 C2BMC Fielding Articles:		12.383 0	- 0	- 0
Description: See Description Below FY 2011 Accomplishments: -Procured and prepared Command and Control, Battle Management, and Communications (C2BMC) Deployable Interface Node (CDIN) #3 in support of FY 2012 deployment of PAA Phase I AN/TPY-2 Radar (EUCOM)				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Supported Operational Mission Planning (OMP) development and testing for EUCOM PAA deployment in FY 2012</p> <p>-Completed the development of the Protected Anti-Jam/Anti-Scintillation Net-Centric System (PAAWNS)</p> <p>-Transported and installed the first Modernization of Enterprise Terminal (MET) to EUCOM</p> <p>-Integrated and certified BMDS Communications Systems</p> <p>-Supported exercises and tests of the AN/TPY-2 radar system with the BMDS Communications Networks (BCN) support systems (HBCN and CDIN)</p> <p>-Continued upgrades to support BCN at the teleports in the EUCOM and CENTCOM AOR's; Lago Patria, and Ramstein</p> <p>FY 2012 Plans: Funds (\$13.175M) and plans are described in the BMD C2BMC PE 0603896C, Project MX01 (Command and Control, Battle Management, Communications Development Support)</p> <p>FY 2013 Plans: Funds and plans are described in the BMD C2BMC PE 0603896C, Project MX01 (Command and Control, Battle Management, Communications Development Support)</p>				
<p>Title: BMDS Radars Communications (Sustainment)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: For FY 2011, this program plans to:</p> <ul style="list-style-type: none"> -Continue round-the-clock sustainment for Communications capabilities associated with 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 <p>FY 2012 Plans: Funds (\$13.988M) and plans are described in the BMD C2BMC PE 0603896C, Project MX01 (Command and Control, Battle Management, Communications Development Support)</p> <p>FY 2013 Plans: Funds and plans are described in the BMD C2BMC PE 0603896C, Project MX01 (Command and Control, Battle Management, Communications Development Support)</p>		<p>9.918</p> <p>Articles: 0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>
<p>Title: Sensors Directorate Operations</p>		<p>55.373</p> <p>Articles: 0</p>	<p>54.977</p> <p>0</p>	<p>62.068</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013	
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Provided Program Management Support across all BMDS Builds, including Concept Development.</p> <p>FY 2012 Plans: This effort will continue to provide operations support as described for FY 2011, but at reduced costs due to efficiencies from in-sourcing and implementation of a new Missile Defense Agency support services contract.</p> <p>FY 2013 Plans: This effort will continue to provide program management as described for FY 2012, with the exception of funding for UEWR program office support (\$3.400M), which transitions to O&M.</p>					
<p>Title: Element Test and Infrastructure</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Initiated element-level ground test campaign SNG-22-S to collect satellite data to support anchoring M&S for various CEC/EMEs -Upgraded sensor interfaces to support Single Stimulation Framework (SSF) integration -Supported evolving SSF (software upgrades) integration into Sensors HWIL Ground Test Infrastructure -Configured and maintained Sensors HWIL Ground Test Infrastructure to support BMDS Ground Tests</p> <p>FY 2012 Plans: For FY 2012, Sensors planned testing includes: -Plan and execute sensors participation in flight tests for additional data collection opportunities to support development progress -Execute element-level ground test campaign to support anchoring M&S for various CEC/EMEs -Support evolving SSF (software upgrades) integration into HWIL Ground Test Infrastructure -Configure and maintain Sensors HWIL Ground Test Infrastructure to support BMDS Ground Tests</p> <p>FY 2013 Plans: Plans for FY 2013 are described in Budget Project MT11, BMDS Radars Test.</p>		Articles:	15.853 0	15.198 0	- 0
<p>Title: Upgrade Clear Early Warning Radar</p> <p>Description: See Description Below</p>		Articles:	- 0	28.275 0	91.663 0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> NA</p> <p><i>FY 2012 Plans:</i> -Support engineering for BMDS Communications work at Clear -Purchase Long Lead fiber and SATCOM to support BMDS Communications -Support design and implementation of GCN connectivity and associated Network monitoring for integration into the GMD -Purchase Long Lead UEWR equipment --commercial-off-the-shelf (COTS) items and the UEWR receiver/exciter (REX) -Complete refinement of design, culminating with critical design review (CDR)</p> <p><i>FY 2013 Plans:</i> -Complete refinement of design, culminating with critical design review (CDR) for hardware and software. -Purchasing and manufacturing of Long Lead UEWR equipment, such as commercial-off-the-shelf (COTS) items and the UEWR receiver/exciter (REX) -Creation of software and adapting it to UEWR infrastructure -Continue facility design and work -Continue work related to fiber and SATCOM to support BMDS communications and architecture -Upgrade UEWR Huntsville System Test Lab</p>				
<p><i>Title:</i> AN/TPY-2 Radar Deployment / Site Activation</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> See Description Below</p> <p><i>FY 2011 Accomplishments:</i> N/A</p> <p><i>FY 2012 Plans:</i> -Package and ship AN/TPY-2 Radar #4 to forward-based radar site -Complete site survey, preparation and activation, including preparation of radar and communications equipment for deployment -Complete installation and deployment activities: radar installation, power installation, fuel tank installation -Complete CLS training of operators and maintainers</p> <p><i>FY 2013 Plans:</i> -No planned deployments in FY 2013.</p>		1.890 0	17.793 0	- 0
<p><i>Title:</i> Project Oak</p> <p align="right"><i>Articles:</i></p>		- 0	28.002 0	31.644 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Description: See Description Below			
FY 2011 Accomplishments: N/A			
FY 2012 Plans: 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 2013 Plans: 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.			
Accomplishments/Planned Programs Subtotals	374.436	211.682	257.656

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603891C: <i>Special Programs - MDA</i>	228.450	296.145	272.387		272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	55.351	41.174	55.550		55.550	53.139	53.718	59.291	60.540	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	151.032	176.831	9.730		9.730	9.725	9.739	9.725	9.728	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing

D. Acquisition Strategy

The Consolidated - Contractor Logistics Support (C-CLS) contract was awarded in FY 2008 to operate and maintain the AN/TPY-2 radars and provide logistical support for other radars in the BMDS Radars PE. The C-CLS contract provides the operations and support activities required for site surveys, planning, relocation, depot maintenance, forward-based system operations, repair, and replacement. The contract is an Indefinite Delivery/Indefinite Quantity (IDIQ) task order contract.

The BMDS radar (AN/TPY-2, Forward-Based) project used an existing radar design to minimize development costs and schedule. Design enhancements focus on software changes for the forward based algorithms and C2BMC connectivity.

MDA will conduct a full and open competition for the Clear EWR Upgrade. The Agency intends to issue a Request for Proposal (RFP) on this effort in 1QCY12 with award expected in 3QCY12.

The 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.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
X-Band Basic Program X-Band Software Enhancements/Development	SS/CPAF	Raytheon :AL	147.676	10.917	Oct 2011	21.559	Nov 2012	-		21.559	0.000	180.152	65.363
X-Band Basic Program Wildcat Software Development	SS/CPAF	Raytheon :MA	12.000	-		-		-		-	0.000	12.000	12.000
X-Band Basic Program Radar Discrimination Capability Common Advanced Algorithm Insertion (Budg Proj CX11)	C/CPAF	Raytheon AL:Boeing AL	11.658	-		-		-		-	0.000	11.658	12.447
X-Band Basic Program Discrete Event Simulation (DESIM) Phase 2&3 Spt to TA10, SW mod for SRR	SS/CPAF	Boeing :AL	8.583	-		-		-		-	0.000	8.583	8.583
X-Band Basic Program Discrete Event Simulation (DESIM) Phase 2&3, Open Systems Architecture (OSA) Sensor model	SS/CPAF	NG:AL	9.362	-		-		-		-	0.000	9.362	9.362
X-Band Basic Program TPY-2 Radar Field Upgrade (RAFU) Kit Install, Production readiness	SS/CPAF	LM, RDEC:AL	0.697	-		-		-		-	0.000	0.697	0.697
X-Band Basic Program Army Hybrid Program Office	MIPR	SMDC:AL	-	1.930	Oct 2011	0.963	Nov 2012	-		0.963	Continuing	Continuing	Continuing
X-Band Basic Program Counter-Countermeasure (CCM) Program	SS/CPAF	Raytheon:MA	-	-		-	Nov 2012	-		-	26.000	26.000	47.600
X-Band Basic Program Intercept Debris Mitigation	SS/CPAF	Raytheon:MA	-	-		0.303	Nov 2012	-		0.303	6.700	7.003	8.900
X-Band Basic Program Ground Based Radar Prototype (GBR-P) Caretaker	MIPR	SMDC:AL	-	-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDs Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
X-Band Basic Program Superdome Obsolescence	SS/CPAF	Raytheon:MA	-	-		4.300	Nov 2012	-		4.300	0.000	4.300	4.300
X-Band Basic Program Material Release Get Well Plan	SS/CPAF	Raytheon:MA	-	-		2.600	Nov 2012	-		2.600	0.500	3.100	3.100
BMDs Radars Modeling & Simulation (M&S) M&S Development	SS/CPAF	Raytheon:MA	12.213	2.650	Nov 2011	12.781	Nov 2012	-		12.781	84.181	111.825	99.466
BMDs Radars Modeling & Simulation (M&S) VV&A of Models	SS/CPAF	Raytheon:MA	11.200	2.250	Nov 2011	1.809	Nov 2012	-		1.809	87.592	102.851	89.401
BMDs Radars Modeling & Simulation (M&S) Legacy Models Support	SS/CPAF	Raytheon MA : Boeing AL	0.962	-		-		-		-	0.000	0.962	0.962
BMDs Radars Modeling & Simulation (M&S) Warfighter Exercises	SS/CPAF	Raytheon:MA	1.596	-		1.600	Nov 2012	-		1.600	4.817	8.013	6.417
Sensors Engineering Sensor Registration	SS/CPAF	Raytheon MA:Torch AL	21.801	-		21.501	Nov 2012	-		21.501	0.000	43.302	4.748
Sensors Engineering Sys Integration & Tech Assessments	SS/CPAF	Raytheon:MA, AL	10.085	1.050	Nov 2011	2.784	Nov 2012	-		2.784	14.317	28.236	14.317
Sensors Engineering Information Assurance AN/TPY-2 (C-CLS/GMD CCC/X00047)	SS/CPAF	Raytheon:MA	1.750	-		1.821	Nov 2012	-		1.821	5.180	8.751	8.751
Sensors Engineering Information Assurance SBX (C-CLS/GMD CCC/X00047)	SS/CPAF	Raytheon:MA	0.250	-		0.260	Nov 2012	-		0.260	1.040	1.550	1.550
Sensors Engineering BMD Sensor M&S	SS/CPAF	Raytheon/MA, APL/MD, NGC/VA, NTB:AL	10.006	-		-		-		-	0.000	10.006	10.553
Sensors Engineering BMDs Sensors V&V	SS/CPAF	APL/MD, MIT/MA, Raytheon/MA :AL	3.298	-		-		-		-	0.000	3.298	3.298

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
External Sensors External Sensors - Prime	SS/CPAF	NG (RaPID):CO	27.068	-		-		-		-	0.000	27.068	13.148
External Sensors Independent Analysis for ESL	MIPR	NSWC-DD:VA	1.901	-		-		-		-	0.000	1.901	1.103
External Sensors Truth Sources / Advanced Algorithms	MIPR	NASIC (WPAFB):OH	1.350	-		-		-		-	0.000	1.350	0.552
External Sensors ESL Support	SS/CPAF	MDIOC:CO	2.388	-		-		-		-	0.000	2.388	1.324
External Sensors Site 2	MIPR	Site 2:CO	1.103	-		-		-		-	0.000	1.103	1.103
External Sensors Technical Expertise	SS/CPAF	SCITEC STTR:CO	1.249	-		-		-		-	0.000	1.249	0.717
External Sensors Site 15	MIPR	Site 15:CO	0.552	-		-		-		-	0.000	0.552	0.552
External Sensors FFRDC	SS/CPAF	FFRDC:CO	0.815	-		-		-		-	0.000	0.815	0.443
AN/TPY-2 C2BMC Fielding AN/TPY-2 Teleport	MIPR	DISA, SPAWAR:VA	9.822	-		-		-		-	0.000	9.822	7.487
AN/TPY-2 C2BMC Fielding AN/TPY-2 US Comms/ PAAWNS	MIPR	DISA:VA	2.387	-		-		-		-	0.000	2.387	2.387
AN/TPY-2 C2BMC Fielding AN/TPY-2 Comms Fielding	MIPR	DISA:VA	6.806	-		-		-		-	0.000	6.806	3.106
AN/TPY-2 C2BMC Fielding AN/TPY-2 BMDS Deployable Interface Nodes	MIPR	PM DCATS, WIN-T, NRDEC, PMRF:VA, CA	9.123	-		-		-		-	0.000	9.123	9.123
AN/TPY-2 C2BMC Fielding AN/TPY-2 Teleport SATCOM	MIPR	DISA/PM DCATS/ NAVSEA:VA	23.479	-		-		-		-	0.000	23.479	15.669
AN/TPY-2 C2BMC Fielding AN/TPY-2 Comms Modems	MIPR	DISA:VA	4.110	-		-		-		-	0.000	4.110	4.110
Sensors Directorate Operations Govt Salaries, Travel, Training (MDA Sensors)	MIPR	MDA:AL, VA	29.667	15.750	Oct 2011	21.939	Nov 2012	-		21.939	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDs Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sensors Directorate Operations MiDAESS, FFRDC/UARC	SS/CPAF	CSS, APL, LL, OGA:AL/MA/VA/MD	79.137	31.580	Oct 2011	31.232	Nov 2012	-		31.232	Continuing	Continuing	Continuing
Sensors Directorate Operations Other Govt Agencies	MIPR	SMDC/AL, Hanscom AFB:MA	6.867	7.647	Oct 2011	8.897	Nov 2012	-		8.897	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar Design Refinement	C/CPAF	Raytheon, Boeing, or Other:MA, AK, AL	-	2.497	Dec 2011	-		-		-	0.000	2.497	8.276
Upgrade Clear Early Warning Radar Radar Upgrade -- Prime Contractor	C/CPAF	Raytheon, Boeing, or Other:MA, AK, AL	-	3.910	Dec 2011	47.420	Dec 2012	-		47.420	115.260	166.590	121.960
Upgrade Clear Early Warning Radar Program Office - OGA	MIPR	USAF:Hanscom AFB, MA	-	1.755	Dec 2011	5.345	Nov 2012	-		5.345	10.422	17.522	13.430
Upgrade Clear Early Warning Radar SPA Upgrade & Processor Rehost	MIPR	USAF:Hanscom AFB, MA	-	1.848	Dec 2011	15.981	Nov 2012	-		15.981	3.741	21.570	6.907
Upgrade Clear Early Warning Radar BCN Upgrades	MIPR	MDA C2BMC / DISA:MA, AK	-	15.600	Dec 2011	9.000	Nov 2012	-		9.000	10.000	34.600	39.479
Upgrade Clear Early Warning Radar DPF Site Activation/ Admin Comms	MIPR	MDA C2BMC:MA, AK	-	1.299	Dec 2011	2.117	Nov 2012	-		2.117	6.316	9.732	9.566
Upgrade Clear Early Warning Radar GMD Fire Control Integration	SS/CPAF	Boeing/AK/AL, Raytheon:MA	-	1.366	Nov 2011	4.300	Nov 2012	-		4.300	12.548	18.214	14.890
Upgrade Clear Early Warning Radar HSV UEWR Test Lab Upgrades & Clear Test Lab Representations	SS/CPAF	Raytheon:MA/AL	-	-		7.500	Nov 2012	-		7.500	15.928	23.428	23.428
AN/TPY-2 Radar Deployment / Site Activation Site Activation & Deployment	SS/CPAF	Raytheon:OCONUS	16.403	14.500	Dec 2011	-		-		-	0.000	30.903	16.382
AN/TPY-2 Radar Deployment / Site Activation DPW Primary Facilities	MIPR	MDA DPW:OCONUS, AL	-	3.293	Dec 2011	-		-		-	3.398	6.691	7.120

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Oak Project Oak	MIPR	Various:Various	-	28.002	Nov 2011	31.644	Nov 2012	-		31.644	Continuing	Continuing	Continuing
Subtotal			487.364	147.844		257.656		-		257.656			

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

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UEWR (Beale, Fylingdales, Thule) & COBRA DANE Sustainment/Upgrades COBRA DANE Upgrade Sustainment	SS/FFP	Raytheon:MA	13.167	-		-		-		-	0.000	13.167	7.900
UEWR (Beale, Fylingdales, Thule) & COBRA DANE Sustainment/Upgrades UEWR-CD Common Mission Software Sustainment	SS/CPAF	Raytheon:MA	14.976	-		-		-		-	0.000	14.976	7.184
UEWR (Beale, Fylingdales, Thule) & COBRA DANE Sustainment/Upgrades UEWR-CD Program Office Support	MIPR	Hanscom AFB:MA	14.168	-		-		-		-	34.106	48.274	49.202
UEWR (Beale, Fylingdales, Thule) & COBRA DANE Sustainment/Upgrades Thule Sustainment	SS/CPAF	Raytheon:MA	1.000	-		-		-		-	0.000	1.000	1.000
BMDS Radars (Sustainment) AN/TPY-2 #2 CLS (Shariki)	SS/CPAF	Raytheon:MA	27.937	-		-		-		-	164.703	192.640	223.021
BMDS Radars (Sustainment) AN/TPY-2 #3 CLS (Site 512)	SS/CPAF	Raytheon:MA	27.671	-		-		-		-	157.435	185.106	215.003

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Radars (Sustainment) AN/TPY-2 #4 CLS (PAA)	SS/CPAF	Raytheon:MA	-	-		-		-		-	128.535	128.535	155.452
BMDS Radars (Sustainment) AN/TPY-2 #4 Refurbishment	SS/CPAF	Raytheon:MA	25.200	-		-		-		0.000	25.200	12.442	
BMDS Radars (Sustainment) AN/TPY-2 #6 CLS (FBM @site TBD)	SS/CPAF	Raytheon:MA	22.530	-		-		-		163.851	186.381	220.208	
BMDS Radars (Sustainment) AN/TPY-2 #1 CLS (Test Asset)	SS/CPAF	Raytheon:MA	-	-		-		-		33.761	33.761	40.642	
BMDS Radars (Sustainment) AN/TPY-2 #5 CLS (THAAD)	SS/CPFF	Raytheon:MA	11.523	-		-		-		91.347	102.870	116.105	
BMDS Radars (Sustainment) AN/TPY-2 #7 CLS (THAAD)	SS/CPAF	Raytheon:MA	11.356	-		-		-		85.287	96.643	109.878	
BMDS Radars (Sustainment) Army Hybrid Program Office	MIPR	SMDC:AL	2.330	-		-		-		7.802	10.132	11.563	
BMDS Radars (Sustainment) AN/TPY-2 Radars Operation & Sustainment	SS/CPAF	Raytheon:MA	46.955	-		-		-		0.000	46.955	68.301	
BMDS Radars (Sustainment) AN/TPY-2 #2 Shariki Site Support	MIPR	US Army:Japan	0.800	-		-		-		0.000	0.800	0.800	
BMDS Radars (Sustainment) AN/TPY-2 PPU Refurbishment/Retrofit	SS/FPIF	Raytheon:MA	8.800	-		-		-		0.000	8.800	8.800	
BMDS Radars (Sustainment) AN/TPY-2 Parts International Transportation	MIPR	TACS HDAC Distro:CA	1.779	-		-		-		0.000	1.779	1.830	
BMDS Radars (Sustainment) AN/TPY-2 Fire Unit Radar Compliance Validation	SS/CPAF	GDIT:AL	0.176	-		-		-		0.000	0.176	0.176	
BMDS Radars (Sustainment) GBR-P Caretaker	SS/CPAF	Raytheon:CA	1.112	-		-		-		0.000	1.112	1.112	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Radars Communications (Sustainment) AN/TPY-2 Comms Sustainment	SS/CPAF	Lockheed Martin Team, DISA:VA	26.849	-		-		-		-	0.000	26.849	27.683
Subtotal			258.329	-		-		-		-	866.827	1,125.156	1,278.302

Remarks

For FY 2012 and FY 2013, operations and sustainment of UEWR/CD and AN/TPY-2 Radars (CLS) are O&M appropriations and are described in the MDA O-Docs.

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing AN/TPY-2 FT & GT	SS/CPAF	Raytheon:MA	46.959	24.715	Dec 2011	-		-		-	163.402	235.076	266.267
BMDS Level Testing UEWR/CD FT & GT	SS/CPAF	Raytheon/MA, Boeing:AL	15.660	15.500	Dec 2011	-		-		-	62.997	94.157	110.261
BMDS Level Testing Thule Upgrade FT & GT	SS/CPAF	Raytheon/MA, Boeing:AL	6.630	1.120	Dec 2011	-		-		-	4.133	11.883	13.081
BMDS Level Testing SBX FT & GT	SS/CPAF	Raytheon/MA, Boeing:AL	28.075	6.328	Dec 2011	-		-		-	46.715	81.118	85.499
BMDS Level Testing External Sensors Lab FT & GT Support	SS/CPAF	NG/CA, MDIOC:CO	1.248	0.977	Dec 2011	-		-		-	5.106	7.331	7.331
BMDS Level Testing Digital Signal Injection	SS/CPAF	Raytheon:MA	12.898	-		-		-		-	0.000	12.898	12.898
BMDS Level Testing Warfighter Exercises	SS/CPAF	Raytheon:MA	1.317	-		-		-		-	0.000	1.317	1.317
BMDS Level Testing Thule CTTO Infrastructure	SS/CPAF	Boeing:AL	8.781	-		-		-		-	0.000	8.781	8.781
BMDS Level Testing UEWR CTTO Infrastructure	SS/CPAF	Boeing:AL	4.037	-		-		-		-	0.000	4.037	10.537

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing X-Band Simulator Tester	SS/CPAF	Raytheon :MA	5.180	-		-		-		-	0.000	5.180	5.180
BMDS Level Testing SBX Infrastructure	SS/CPAF	Raytheon:MA	4.390	-		-		-		-	0.000	4.390	4.390
BMDS Radars Concurrent Test, Training & Operations (CTTO) Infrastructure AN/TPY-2 SSF/CTTO/RDSIS Upgrade	SS/CPAF	Raytheon:MA	29.860	-		-		-		-	5.587	35.447	39.962
BMDS Radars Concurrent Test, Training & Operations (CTTO) Infrastructure X-Band Simulator Tester (XST)	SS/CPAF	Raytheon:MA	6.000	-		-		-		-	53.761	59.761	59.761
Element Test and Infrastructure TPY-2 SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Raytheon:MA	6.368	7.382	Dec 2011	-		-		-	43.228	56.978	57.937
Element Test and Infrastructure UEWR/CD SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing/AL:Raytheon/MA	1.170	4.215	Nov 2011	-		-		-	27.090	32.475	33.022
Element Test and Infrastructure ESL SSF Integration	MIPR	AFSPC:CO	0.646	0.343	Dec 2011	-		-		-	1.709	2.698	2.742
Element Test and Infrastructure SBX SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing:AL	6.431	2.660	Dec 2011	-		-		-	11.426	20.517	20.862
Element Test and Infrastructure Thule SSF Integration & Sys Test Lab	SS/CPAF	Boeing:AL	1.500	0.598	Dec 2011	-		-		-	2.473	4.571	4.649
Subtotal			187.150	63.838		-		-		-	427.627	678.615	744.477

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date				
Project Cost Totals		932.843	211.682			257.656		-		257.656	

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity +
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity +

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 Intercept Flight Test FTG-06a	●																											
Initiate Development of Advanced Processor Platform (Superdome Obsolescence)		▲																										
Aegis Flight Test FTM-15			●																									
Deliver UEWB Simulator Tester (Beale, Fylingdales, Thule)				▲																								
Complete AN/TPY-2 Radar #4 Refurbishment				▲																								
GMD Intercept Flight Test FTG-06b								○																				
Aegis Flight Test FTM-23								○																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GMD Intercept Flight Test FTG-06a	1	2011	1	2011
Initiate Development of Advanced Processor Platform (Superdome Obsolescence)	2	2011	2	2011
Aegis Flight Test FTM-15	3	2011	3	2011
Deliver UEWR Simulator Tester (Beale, Fylingdales, Thule)	4	2011	4	2011
Complete AN/TPY-2 Radar #4 Refurbishment	4	2011	4	2011
GMD Intercept Flight Test FTG-06b	4	2012	4	2012
Aegis Flight Test FTM-23	3	2012	3	2012
THAAD Flight Test FTT-13	3	2012	3	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT11: <i>BMDS Radars Test</i>	-	-	72.388	-	72.388	85.892	103.909	76.015	84.058	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

The MT11 R-4/4A depicts only test events for which Sensors participation is ``planned``. For a full listing of 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 EPAA Phase I Initial integrated Defense supports the Integrated Master Test Plan (IMTP) for Operational Test and Evaluation of theater/ regional defense systems that was fielded at the end of Calendar Year 11 (CY 2011) and supports an Operational Assessment of the GMD weapon system. EPAA Phase I Initial integrated Defense testing (FY 2011-2012) demonstrated Aegis 3.6.1 SM-3 Block IA launch on remote (AN/TPY-2 FB) intercept of an IRBM target (FTM-15), will demonstrate C2BMC management of two AN/TPY-2 Forward-based mode (FBM) radars (GT-04) and will include sensors support for GMD engagement of an IRBM target (FTG-06b), and operational flight test engagements of SRBM and MRBM threats using a regional/theater BMDS architecture (FTO-01).

The Sensors test program for Robust MRBM Defense (FY 2012-2016) supports the IMTP for Operational Test and Evaluation of strategic and regional BMD systems that will be fielded at the end of CY15. Sensors testing includes BMDS Ground Testing (GT-06), a Cobra Dane Tracking Test during a simulated engagement of an IRBM by a ground-based interceptor (GBI) (FTX-10), and sensors support for Aegis 4.0.1 engagement of a Wildcat target (FTX-14/FTM-24), Aegis Ashore intercept of an MRBM using integrated fire control (AN/TPY-2) (AAFTM-01/AAFTM-02), Aegis 5.0 (emulating Aegis Ashore) intercept of an MRBM using launch on remote doctrine (FTM-20 E1), THAAD exoatmospheric engagement of an SRBM (FTT-11a), THAAD endoatmospheric engagement of a MRBM (FTT-15), GM salvo (2) intercept of a single ICBM target (FTG-11), operational flight test engagements of SRBM, MRBM and IRBM threats using a regional/theater BMDS architecture (FTO-02) and operational flight test engagement of an IRBM target with AOs using GMD (FTG-13(OT)).

The Sensors test program for Robust IRBM Defense testing (FY2016-2020) 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). Testing through FY17 includes BMDS Ground Testing (GT-07), and sensors support for Aegis 5.0 remote engagement (AN/TPY-2 FBM) of an MRBM (FTM-26 E3), THAAD Operational engagement of an IRBM with AOs using remote engagement (Aegis BMD) authorized (FTT-17), THAAD endoatmospheric engagement of a unitary SRBM (FTT-16), GMD operational test engagement of an ICBM with AOs (FTG-13) and GMD engagement of an IRBM using near term discrimination (FTG-15).

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

	FY 2011	FY 2012	FY 2013
Title: BMDS Level Testing	-	-	39.322
Articles:	0	0	0
Description: See Description Below			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> FY 2011 accomplishments are found in Budget Project MD11.</p> <p><i>FY 2012 Plans:</i> FY 2012 plans are found in Budget Project MD11.</p> <p><i>FY 2013 Plans:</i> -Plan and execute sensors participation in the BMDS GTI-04e hardware-in-the-loop (HWIL) and GTD-04e distributed ground tests in accordance with the BMDS Integrated Master Test Plan (IMTP) -Initiate planning for sensors participation in FY 2014 BMDS flight tests FTG-08, FTT-11a, FTX-14, AAFTM-01, FTM-24 and GTX-06 HWIL ground test -Plan for Near-Term Discrimination initial assessments in FY 2014 BMDS flight test FTG-08 and GTX-06 HWIL ground test</p>			
<p><i>Title:</i> Element Test and Infrastructure</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> See Description Below</p> <p><i>FY 2011 Accomplishments:</i> FY 2011 accomplishments are found in Budget Project MD11.</p> <p><i>FY 2012 Plans:</i> FY 2012 plans are found in Budget Project MD11.</p> <p><i>FY 2013 Plans:</i> -Execute FY 2013 element-level ground test campaign consisting of SNG-26-S (Strong Ionospheric Scintillation data collection), SNG-09-H (X-Band discrimination HWIL assessment) and SNG-39-H (satellite data HWIL / digital reconstruction) to support anchoring M&S for various Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME). -Support evolving SSF (software upgrades) integration into Sensors HWIL Ground Test infrastructure -Configure and maintain sensors HWIL Ground Test Infrastructure to support BMDS Ground Tests</p>	-	-	33.066
	0	0	0
Accomplishments/Planned Programs Subtotals	-	-	72.388

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	MT11: <i>BMDS Radars Test</i>

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603891C: <i>Special Programs - MDA</i>	228.450	296.145	272.387		272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	55.351	41.174	55.550		55.550	53.139	53.718	59.291	60.540	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	151.032	176.831	9.730		9.730	9.725	9.739	9.725	9.728	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing

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 2013 Missile Defense Agency **DATE:** February 2012

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

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
BMDS Level Testing AN/TPY-2 FT & GT	SS/CPAF	Raytheon:MA	-	-		24.901	Nov 2012	-		24.901	163.402	188.303	259.321	
BMDS Level Testing UEWR/CD FT & GT	SS/CPAF	Raytheon, Boeing:MA/AL	-	-		13.423	Nov 2012	-		13.423	62.997	76.420	107.580	
BMDS Level Testing Thule FT & GT	SS/CPAF	Raytheon, Boeing:MA/AL	-	-		0.998	Nov 2012	-		0.998	4.133	5.131	12.881	
Element Test and Infrastructure TPY-2 SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Raytheon:MA	-	-		27.839	Nov 2012	-		27.839	43.228	71.067	57.937	
Element Test and Infrastructure UEWR SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing, Raytheon:AL/MA	-	-		4.226	Nov 2012	-		4.226	27.090	31.316	33.022	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Element Test and Infrastructure ESL SSF Integration	MIPR	AFSPC:CO	-	-		0.356	Nov 2012	-		0.356	1.709	2.065	2.742
Element Test and Infrastructure Thule SSF Integration, Sys Test Lab	SS/CPAF	Boeing:AL	-	-		0.645	Nov 2012	-		0.645	2.473	3.118	4.649
Subtotal			-	-		72.388		-		72.388	305.032	377.420	478.132

Remarks

N/A

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

Remarks

N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base	FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		72.388	-		72.388	305.032	377.420	478.132

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity +
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity +

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 Operational Flight Test FTO-01																												
Aegis Flight Test FTM-20E1																												
THAAD Flight Test FTT-11a																												
Aegis Flight Test FTM-24																												
FY 2014 GM Intercept Flight Test																												
Aegis Flight Test AA FTM 01																												
BMDS Operational Flight Test FTO-2																												
FY 2015 GM SALVO Intercept Flight Test																												
FY 2016 GM Intercept Flight Test																												
THAAD Flight Test FTT-15																												
FY 2017 GM Intercept Flight Test																												
FTX-10																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMDS Operational Flight Test FTO-01	3	2013	3	2013
Aegis Flight Test FTM-20E1	3	2014	3	2014
THAAD Flight Test FTT-11a	4	2014	4	2014
Aegis Flight Test FTM-24	4	2014	4	2014
FY 2014 GM Intercept Flight Test	3	2014	3	2014
Aegis Flight Test AA FTM 01	4	2014	4	2014
BMDS Operational Flight Test FTO-2	4	2015	4	2015
FY 2015 GM SALVO Intercept Flight Test	4	2015	4	2015
FY 2016 GM Intercept Flight Test	4	2016	4	2016
THAAD Flight Test FTT-15	2	2017	2	2017
FY 2017 GM Intercept Flight Test	4	2017	4	2017
FTX-10	3	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	14.823	10.393	16.968	-	16.968	16.150	17.758	16.875	16.532	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012, Program Wide Support reflects a proportional decrease as a result of decreases to BMD Sensors.

In FY 2013, Program Wide Support reflects a proportional increase as a result of increases to BMD Sensors.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	14.823	10.393	16.968
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	14.823	10.393	16.968

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	MD40: <i>Program-Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	999.068	85.569	-	-	-	-	-	-	-	0.000	1,084.637
MD04: <i>Test Program</i>	419.722	-	-	-	-	-	-	-	-	0.000	419.722
MD05: <i>Targets Program</i>	545.209	85.569	-	-	-	-	-	-	-	0.000	630.778
MD40: <i>Program-Wide Support</i>	34.137	-	-	-	-	-	-	-	-	0.000	34.137

Note

Starting in FY 2012, as directed by the Consolidated Appropriation Act of FY 2012 (Public Law 112-74), BMD Test and Targets content transfers to the following Program Elements: BMD Test and Evaluation PE 0603914C (Budget Project MT04 and MX04), BMD Targets PE 0603915C (Budget Project MT05), BMD Command and Control, Battle Management, and Communications (C2BMC) 0603896C (Budget Project MX01) and Program Wide Support content transfers to BMD Enabling PE 0603890C (Budget Project MD40).

Starting in FY 2013, MD40 Program Wide Support content transfers to the following Program Elements: BMD Test and Evaluation PE 0603914C (Budget Project MD40) and BMD Targets PE 0603915C (Budget Project MD40).

A. Mission Description and Budget Item Justification

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>

flight test program. Targets are representative of feasible future threats and flight test requirements are derived from the CECs and EMEs and are documented in the Agency's IMTP.

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

BMDS Test Program Functions:

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

Major Test Program Goals:

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

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

BMDS Targets and Countermeasures Functions:

The Targets and Countermeasures (TC) program office is responsible for executing the development and procurement of targets to support testing of the BMDS. The multiple targets (3 types) provided by TC are across four target classes: Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), Intermediate

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>
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Range Ballistic Missiles (IRBM), and Intercontinental Ballistic Missiles (ICBM). It provides targets representative of feasible future threats for use in BMDS testing to verify models and simulations, as well as to verify BMDS performance across a broad range of operational conditions. TC has realized past and future savings by centralized competition and management of targets and countermeasures using efficient procurement and lot buys resulting in economies of scale and cost savings.

Targets and Countermeasures Contribution to the BMDS:

- Type-1 Targets are simple, baseline configurations
- Type-2 Targets have increased capability or complexity
- Type-3 Targets have a unique configuration and are procured in low unit quantities
- Provides the BMDS risk reduction through measurements of flight testing to include technology demonstration algorithms, model validation, and threat and countermeasures characterization.
- Collects and provides test data in order to support effectiveness, suitability, and interoperability assessments.

Major Targets and Countermeasures Goals:

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

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1,113.425	1,071.039	898.680	-	898.680
Current President's Budget	999.068	85.569	-	-	-
Total Adjustments	-114.357	-985.470	-898.680	-	-898.680
• Congressional General Reductions	-6.860	-0.121			
• Congressional Directed Reductions	-10.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-94.900	-985.349			
• Reprogrammings	-3.056	-			
• SBIR/STTR Transfer	-0.125	-			
• Other Adjustment	0.584	-	-898.680	-	-898.680

Change Summary Explanation

Change Summary Explanation:
The FY 2011 decreases reflect realignment of DoD priorities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>

The FY 2012 decrease reflects congressionally directed transfers to 0603914C, 0603915C, and 0603890C in the Consolidated Appropriation Act of FY 2012 (Public Law 112-74).

The FY 2013 decrease reflects realignment to other PEs as provided in the Consolidated Appropriation Act of FY 2012 (Public Law 112-74).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD04: <i>Test Program</i>	419.722	-	-	-	-	-	-	-	-	0.000	419.722
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

Starting in FY 2012, BMD Test and Targets content moves to the following Program Element: BMD Test and Evaluation PE 0603914C (Budget Project MT04).

A. Mission Description and Budget Item Justification

The Test Program provides consolidated Missile Defense Agency (MDA) capabilities and resources to support the management and execution of Ballistic Missile Defense System (BMDS) and Element-level testing. With the evolution of the BMDS, testing needs have expanded beyond those of the individual Elements to include testing of BMDS Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) to anchor models and simulations.

The Directorate for Test (DT) is responsible for all BMDS testing which relies on BMDS Systems Engineering to provide the system test objectives to define the test architecture. DT plans and executes BMD system test events and develops the necessary test policy, test plans, and test infrastructure to conduct an effective test program.

Test activities are grouped into four major areas: 1) Support to Operations, which provides for the Test Functional Management Office, flight and ground testing support, target launch operations, and Operational Test Agency assessments; 2) Infrastructure Support to Flight Test and Ground Test Programs, which sustains, and modernizes the core infrastructure assets required to support the BMDS System and Element-level flight and ground testing; 3) Flight Test and Ground Test Infrastructure Development, which provides for Integrated Master Test Plan infrastructure development, auxiliary sensors development, and component ground test lab development; and 4) Common Test Support, which provides for test planning and design, test data management, ground test lab support, test readiness and training, and the Pacific Range Support Team (PRST).

The goals of this budgetary project are to support and improve a robust testing program and to enhance modeling and simulation efforts to provide, in conjunction with flight and ground testing, confidence to the Combatant Commanders that the missile defense system works.

The MDA test program, along with the Army, Navy, Air Force, and Operational Test Agencies (OTA), conducts a rigorous review of BMDS models and simulations (M&S) to determine the data needed to verify, validate, and accredit the M&S efforts. Working with the Services, OTA, and with the support of the Director of Operational Test and Evaluation (DOT&E), the test program was restructured to improve confidence in the missile defense capabilities under development and ensure the capabilities transferred to the Warfighter are operationally effective, suitable, and survivable.

Test Engineering supports the analysis process by providing event leadership, tools, and processes to conduct pre- and post-mission system level analysis for all BMDS flight and ground test events. Analysis is performed and reported using the Joint Analysis Team (JAT) process. Pre-mission analysis provides essential risk reduction analysis used to optimize conditions for successful accomplishment of the primary mission objectives. Post-mission analysis is performed to assess the

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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primary and secondary test objectives and to identify mission-specific performance enhancements or failures that were observed. The BMDS performance assessment strategy is to develop M&S and compare their predictions to empirical data collected. The data collected through flight and ground testing is used to validate M&S accuracy, rather than physically testing all possible combinations of BMDS configurations, engagement conditions, and target phenomena.

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

	FY 2011	FY 2012	FY 2013
<p>Title: 1.0 Support to Operations and Testing</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Completed detailed test planning, mission management, and integration for FY 2011 Ballistic Missile Defense System (BMDS) level and other test events, including the successful execution of FTM-15, FTM-16E1, JFTM, FTX-17, FTX-16 E1, FTP-04, Arrow Intercept, and three Ground Tests. -Developed Integrated Master Test Plans (IMTP) which were coordinated and signed by Director, Operational Test & Evaluation (DOT&E), Developmental Test and Reaction (DT&E), Operational Test Agencies (OTA), Joint Function Component Command (JFCC) Integrated Missile Defense (IMD). -Developed and implemented test policy, standards, directives, and procedures for creating unified BMD test processes. -Coordinated budget planning and execution activities, as well as Test Functional Area (TFA) manpower activities. -Communicated and interacted with the BMDS development community and Operational Test Agencies (OTA). -Supported BMDS Elements in planning and integration of their program specific flight and ground tests. -Supported planning and execution of BMDS Contingency Operations. -Prepared and conducted all phase test readiness reviews and scheduled all executive test reviews. -Performed BMDS test configuration control and asset management. -Completed BMDS daily test status reports and integrated flight and ground test scheduling and deconfliction. -Supported end-to-end test cost oversight. -Integrated and supported all associated operations on flight and ground test events. -Integrated, developed, and executed all test event viewing plans and conduct all test event viewing. -Supported BMDS System Engineering and Warfighter requirements and integration of multiple Elements, OTA, and test support teams into BMDS system flight and ground test events. -Refined scenario designs for BMDS flight tests to support Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) identified in BMDS IMTP. -Initiated planning for FY 2012 BMDS level and other test events. <p>FY 2012 Plans:</p>	<p>138.948</p> <p>0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>		PROJECT MD04: <i>Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Refer to MT04 in 0603914C for FY 2012 Plans				
FY 2013 Plans: Refer to MT04 in 0603914C for FY 2013 Plans				
Title: 2.0 Infrastructure Support to Flight Test and Ground Test		105.978	-	-
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments:				
<ul style="list-style-type: none"> -Developed, maintained, and upgraded as needed MDA unique range facilities and instrumentation at the following ranges in accordance with the DoD Financial Management Regulation (FMR) and Test Resource Management Center Policy (TRCP): White Sands Missile Range (WSMR), Naval Air Warfare Center (NAWC), Kauai Test Facility (KTF), Wake Island, Pacific Missile Range Facility (PMRF), Reagan Test Site (RTS), Vandenberg Air Force Base (VAFB), and other test sites as required. -Operated, maintained, and upgraded as needed the Kwajalein Mobile Range Safety System (MRSS) and PMRF MRSS to support BMDS flight testing. -Operated High Altitude Observatory -I (HALO-I) and HALO-II to support optical data collection requirements on Ballistic Missile Defense (BMD) flight tests. Operated HALO-III to serve as an airborne diagnostic target for the Airborne Laser Test Bed (ALTB) technology program. Operated the Wide-body Airborne Sensor Platform (WASP) to support optical data collection requirements and provide captive carry capability for MDA sensor programs. -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 BMDS system-level ground tests, including basic ground test control as well as some Element representations. -Continued coordination with the Targets Program to develop and qualify common Flight Termination and Range Tracking Systems that will simplify target integration at the ranges. -Sustained the Pacific Collector telemetry instrumentation ship to support off-range BMDS testing and increasingly complex test scenarios. -Operated and maintained three Transportable Telemetry System (TTS) that provide long range missile telemetry acquisition, processing, and archiving capability. -Supported the Test and Evaluation Data Analysis Capability (TEDAC) Enterprise to provide test communications among the MDA ranges and test situational awareness to MDA. 				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
-Continued development of a range safety capability for the Pacific Collector. FY 2012 Plans: Refer to MT04 in 0603914C for FY 2012 Plans FY 2013 Plans: Refer to MT04 in 0603914C for FY 2013 Plans				
Title: 3.0 Flight Test and Ground Test Infrastructure Development Description: See Description Below FY 2011 Accomplishments: -Continued development of a second suite of hardware-in-the-loop (HWIL) equipment including the acquisition of additional hardware and digital element representations to support concurrent ground testing of current Ballistic Missile Defense System (BMDS) capability and that under development. -Identified and executed focused investments in the BMDS test infrastructure to support the Integrated Master Test Plan (IMTP). -Added hardware and digital element representations to support expansion of the existing HWIL capability as the BMDS evolves. -Completed development of the Pacific Tracker radar / telemetry instrumentation ship to support off-range BMDS testing and increasingly complex test scenarios. -Developed additional telemetry and instrumentation assets to support Ground based Midcourse Defense (GMD) salvo testing and increasingly complex flight test scenarios. -Developed dedicated Command and Control, Battle Management, and Communications (C2BMC) regional test bed and communication nodes to support IMTP test program. -Continued sustainment and development of the Kinetic HWIL facility to support next generation scene development efforts. FY 2012 Plans: Refer to MT04 in 0603914C for FY 2012 Plans FY 2013 Plans: Refer to MT04 in 0603914C for FY 2013 Plans		Articles: 117.794 0	- 0	- 0
Title: 4.0 Common Test Support Description: See Description Below FY 2011 Accomplishments:		Articles: 48.723 0	- 0	- 0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>		PROJECT MD04: <i>Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2011	FY 2012
<p>-Planned and managed the Ballistic Missile Defense system (BMDS) Test Baseline. Improved operational realism of test events by incorporating Warfighter and Operational Test Agencies (OTA) critical operational issues. Provided test scenario designs for the IMTP, requirements for long-range test architecture, and operational comparison analysis for MDA.</p> <p>-Conducted flight safety, trajectory, threat, collision avoidance, and mobile asset analysis, as well as sensor planning for all flight tests.</p> <p>-Provided ground test planning support for BMDS tests. Developed and designed ground test scenarios and feasibility. Developed initial test architectures and configurations.</p> <p>-Managed the MDA Data Center Program (DCP). Developed, modernized, and sustained the library, operations, and infrastructure providing centralized data management, archival, and distribution services to reduce the risks and costs of Ballistic Missile Defense System (BMDS) development and fielding.</p> <p>-Developed and maintained Information Assurance (IA) documentation, performed as IA manager for test data management networks and infrastructure and interfaced with MDA Information Management & Technology Operations team to coordinate and maintain test data management network operations capabilities.</p> <p>-Developed Truth Data Requirements Documents (TDRD) and delivered multiple Truth Data Packages (TDP) that included Best Estimate Trajectory (BETs), environmental data, optical data, radar cross section (RCS) data, and analysis documentation.</p> <p>-Provided truth-quick-look product development support for each flight and ground test event supporting analysis requirements for modeling and simulation validation and accreditation.</p> <p>-Developed and published the Integrated Data Management Plans (IDMPs) and Data Handling Plans (DHPs) that capture and satisfy Element and System level analysis data collection requirements.</p> <p>-Supported Phase-I (Engineering) activities associated with determining critical factors, data points, and Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) required for verification, validation, and accreditation (VV&A) of modeling and simulations (M&S).</p> <p>-Provided System Mission Managers (SMM) to lead integrated event test team mission management and readiness activities across all five test event phases for System and Element flight and ground tests, and contingency operations.</p> <p>-Developed MDA test program risk management standardization and supported risk assessment and mitigation of the BMDS test program. Established test lessons learned process to enable organizational learning.</p> <p>-Developed and codified test training materials to support test operations (trainers, evaluators, and operators/crews) and data management (data managers, element data managers, and data requestors) areas</p> <p>-Provided lab development, integration and event execution support to the IMTP-defined ground test campaign events.</p> <p>FY 2012 Plans: Refer to MT04 in 0603914C for FY 2012 Plans</p> <p>FY 2013 Plans:</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Refer to MT04 in 0603914C for FY 2013 Plans			
Title: Fielding and Integration Description: See Description Below FY 2011 Accomplishments: -Continued Ballistic Missile Defense System (BMDS) integration planning and capability delivery execution. -Managed BMDS Schedule Baseline. -Updated BMDS Technical Baseline documentation. -Continued to execute the BMDS Change Management process. FY 2012 Plans: Refer to MT04 in 0603914C for FY 2012 Plans FY 2013 Plans: Refer to Budget Project MD40 Program-Wide Support (PWS)	Articles: 8.279 0	- 0	- 0
Title: Facilities Siting, and Environmental Description: See Description Below FY 2011 Accomplishments: Refer to 0603890C, Budget Project MD24 FY 2012 Plans: Refer to 0603890C, Budget Project MD24 FY 2013 Plans: Refer to 0603888C Budget Project MD40 Program-Wide Support (PWS)	Articles: - 0	- 0	- 0
Accomplishments/Planned Programs Subtotals	419.722	-	-

C. Other Program Funding Summary (\$ in Millions)										Cost To	
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Complete</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>						
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing

D. Acquisition Strategy

The Directorate for Test acquisition strategy is consistent with the Missile Defense Agency (MDA) capabilities based acquisition strategy that emphasizes testing, evolutionary acquisition, and knowledge based funding. The Directorate for 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, a Federally Funded Research and Development Center (FFRDC), and other MDA programs to execute the various diverse efforts within the Ballistic Missile Defense System (BMDS) test program through competition. When a specific effort/activity being conducted, acquired, or maintained, requires the use of an executing agent, the acquisition strategy that conforms to their respective headquarters regulations are used. This combination of organizations forms an integrated team to accomplish the necessary testing for BMDS.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fielding and Integration Support Contracts	C/CPAF	Computer Sciences Corp.: Falls Church, VA	15.934	-		-		-		-	0.000	15.934	0.000
Subtotal			15.934	-		-		-		-	0.000	15.934	0.000

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
1.0 Support to Operations and Testing Support to Operations and Testing	Various	Various: Various	237.959	-		-		-		-	0.000	237.959	0.000
2.0 Infrastructure Support to Flight Test and Ground Test Infrastructure Support to Flight Test and Ground Test	Various	Various: Various	225.325	-		-		-		-	0.000	225.325	0.000
3.0 Flight Test and Ground Test Infrastructure Development Flight Test and Ground Test Infrastructure Development	Various	Various: Various	117.794	-		-		-		-	0.000	117.794	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
4.0 Common Test Support Common Test Support	Various	Various:Various	85.589	-		-		-		-	0.000	85.589	0.000
Subtotal			666.667	-		-		-		-	0.000	666.667	0.000

Remarks
FY 2012 Support to Operations and Testing includes target launch operations which was previously funded in MD05.

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

Remarks
N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	682.601	-	-	-	-	0.000	682.601	0.000

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity Planned Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Arrow Intercept Flight Test - FY11	+	+																											
FTG-06a (GM Intercept Flight Test)	●																												
JFTM-04 E1, E2, E3 (Aegis Simulated Intercept Flight Test)	◆																												
GTD-04b (BMDS Distributed Ground Test)			▲																										
FTX-16 E1 (Sensors Flight Test)			▲																										
FTM-16 (Aegis Flight Test) E1 (Simulated Intercept)			●																										
FTP-04 (7-3) (Patriot Intercept Flight Test)			◆																										
FTM-15 (Aegis Intercept Flight Test)				●																									
FTX-17 (Air Launched Target Return to Flight Flight Test)				◆																									
GTD-04d Part 1 (BMDS Distributed Ground Test)			+	+																									
GTI-04d (BMDS Integrated HWIL Ground Test)			▲																										
WFTP-04x (Ground Test) (Warfighter Trial Period)				▲																									
FTX-11 (FY11 Glory Trips) (GT-203, GT-205)				▲																									
FTM-16 (Aegis Flight Test) E2 (Intercept)				▲																									
FTT-12 (THAAD Intercept Flight Test) (MSE)				●																									
GTI-04 (ISR) (BMDS Integrated HWIL Ground Test)				+	+																								
GDEx-04d (Ground Test) (Warfighter Exercise)				▲																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD04: <i>Test Program</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Arrow Intercept Flight Test - FY11	1	2011	2	2011
FTG-06a (GM Intercept Flight Test)	1	2011	1	2011
JFTM-04 E1, E2, E3 (Aegis Simulated Intercept Flight Test)	1	2011	1	2011
GTD-04b (BMDS Distributed Ground Test)	2	2011	2	2011
FTX-16 E1 (Sensors Flight Test)	2	2011	2	2011
FTM-16 (Aegis Flight Test) E1 (Simulated Intercept)	2	2011	2	2011
FTP-04 (7-3) (Patriot Intercept Flight Test)	2	2011	2	2011
FTM-15 (Aegis Intercept Flight Test)	3	2011	3	2011
FTX-17 (Air Launched Target Return to Flight) Flight Test	3	2011	3	2011
GTD-04d Part 1 (BMDS Distributed Ground Test)	3	2011	4	2011
GTI-04d (BMDS Integrated HWIL Ground Test)	3	2011	3	2011
WFTP-04x (Ground Test) (Warfighter Trial Period)	4	2011	4	2011
FTX-11 (FY11 Glory Trips) (GT-203, GT-205)	4	2011	4	2011
FTM-16 (Aegis Flight Test) E2 (Intercept)	4	2011	4	2011
FTT-12 (THAAD Intercept Flight Test) (MSE)	4	2011	4	2011
GTI-04 (ISR) (BMDS Integrated HWIL Ground Test)	4	2011	1	2012
GDEx-04d (Ground Test) (Warfighter Exercise)	4	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD05: <i>Targets Program</i>	545.209	85.569	-	-	-	-	-	-	-	0.000	630.778
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

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

A. Mission Description and Budget Item Justification

The goal of the Missile Defense Agency (MDA) Targets and Countermeasures (TC) program is to provide a cost effective and reliable inventory of targets that are representative of feasible future threats and support demonstration of the evolving layered missile defense system capability in a simultaneous test and operating environment. Based on the Systems Engineering assessments of realistic threat scenarios, the targets and countermeasures program designs, develops, builds, and supports the launch of Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, Intercontinental Ballistic Missile (ICBM) targets, and the associated common payloads and components to test, verify, and validate the performance of the Ballistic Missile Defense System (BMDS). This project provides funding to the Targets and Countermeasures program office for the development and procurement of ballistic targets and countermeasures for the BMDS in support of the MDA flight test program. Target requirements are derived from the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) and are documented in the Agency's Integrated Master Test Plan. Targets and countermeasures are developed and built at multiple locations including: Courtland, AL; Orlando, FL; Chandler, AZ; and Albuquerque, NM. Storage and maintenance facilities are also located throughout the country including: Huntsville, AL; White Sands, NM; Ogden, UT; Camp Navajo, AZ; Hawthorne, NV; and Kodiak, AK.

Funding for the TC program supports the continuation of activities which include the requirements definition and design of BMDS targets, associated payloads, and flight missions. It also supports the maintenance, aging surveillance, refurbishment, and routine testing of existing government furnished equipment boosters and target components, as well as the purchase of long lead material assets and asset management items for short, medium, intermediate, and long-range target components.

TC is responsible for executing the development and procurement of targets to support testing of the BMDS and its components. The multiple targets (3 types) provided by TC are across four target classes: Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), Intermediate Range Ballistic Missiles (IRBM), and Intercontinental Ballistic Missiles (ICBM). It provides targets representative of feasible future threats for use in BMDS testing to verify models and simulations, as well as to verify BMDS performance across a broad range of operational conditions.

Target Types:

Type-1 Targets are simple, baseline configurations

Type-2 Targets have increased capability or complexity

Type-3 Targets have a unique configuration and are procured in low unit quantities

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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The TC program consists of three major areas: Program Operations, Target Support, and Target Hardware.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Program Operations</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Program Operations consisted of the government, contractor and Federally Funded Research and Development Center (FFRDC) workforce that managed the overall Targets and Countermeasures (TC) program, to include engineering, logistics, program management, business management, acquisition, contract administration, and quality assurance. The personnel for TC enabled the program to develop , build, and evaluate targets that responded to the changing threat and meet the requirements in the Integrated Master Test Plan. These personnel included the following:</p> <ul style="list-style-type: none"> -MDA Civilians in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality and Mission Assurance; Security; and Test -Other Government Agency (OGA) Civilians to provide support in the following functional areas: Business and Financial Management; Engineering; Logistics; Safety, Quality, and Mission Assurance; and Security -Travel for Government Civilians -Contractor Support Services pending Missile Defense Agency Engineering and Support Services (MiDAESS) task order awards -MiDAESS contractor support in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality, and Mission Assurance; Security; and Test -FFRDCs, Intergovernmental Personnel Act (IPAs), University Affiliated Research Center (UARC) staff, Detailees, and Liaisons to support the TC program office in Engineering -Operations support to include Change of Station requirements and Student Loan Repayments <p>FY 2012 Plans: Program Operations consisted of the government, contractor and Federally Funded Research and Development Center (FFRDC) workforce that managed the overall Targets and Countermeasures (TC) program, to include engineering, logistics, program management, business management, acquisition, contract administration, and quality assurance. The personnel for TC enable the program to develop , build, and evaluate targets that respond to the changing threat and meet requirements in the Integrated Master Test Plan. These personnel included the following:</p> <ul style="list-style-type: none"> -Other Government Agency (OGA) Civilians to provide support in the following functional areas: Engineering; Logistics; and Safety, Quality, and Mission Assurance 	65.713 0	0.956 0	- 0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Contractor support services in the following functional areas: Engineering; Readiness; and Safety, Quality, and Mission Assurance; Security</p> <p>-FFRDCs, Intergovernmental Personnel Act (IPAs), University Affiliated Research Center (UARC) staff, Detailees, and Liaisons to support the TC program office in Engineering</p> <p>Refer to Project MT05 in Program Element 0603915C for the balance of FY 2012 Plans.</p> <p>FY 2013 Plans: Refer to Project MT05 in Program Element 0603915C for FY 2013 Plans.</p>				
<p>Title: Target Support</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Target Support consists of three sub-elements. These are Systems Engineering/Program Management, Logistics, and Support Equipment.</p> <p>System engineering/program management effort includes activities by Targets and Countermeasures (TC) prime contractors as well as non-prime systems engineering efforts. This effort 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. Efforts not on the prime contracts in support of the TC program include Single Stimulation Framework (SSF)/Objective Stimulation Framework (OSF) compatible Modeling and Simulation (M&S) execution and improvements to evolve TC M&S capability; trajectory analyses; signature analyses and characterization; studies to assess alternative target and platform solutions; assessments of risk and mission assurance; and design approval of government furnished equipment.</p> <p>TC Logistics efforts provide the Missile Defense Agency with target storage, aging surveillance, and transportation of TC hardware in support of BMDS testing. These efforts are essential in providing a dependable and reliable target system that enables MDA to build more operational realistic targets to emulate known threats or potential threats. This effort includes integrated logistics support for all TC material including facilities, inventory maintenance, spare parts, aging surveillance, disposal, and special testing for government furnished equipment target rocket motor propellants and other hazardous material handling. This task provides</p>		72.993 0	17.897 0	- 0
		Articles:		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>all required facilities and monitoring for explosive storage and Foreign Materiel Acquisition (FMA). Finally, this task manages and oversees accountability of all government furnished equipment and contractor acquired property.</p> <p>Support equipment effort provides for the development and build of common support equipment for launch vehicles, re-entry vehicles, associated objects, and all up integrated target rounds. It also supports launch site activations through the transportation of support equipment to various test sites.</p> <p>FY 2011 Accomplishments: System Engineering and Program Management: Performed program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p> <ul style="list-style-type: none"> -Continued Program Management and Business Operations for target components to provide a framework for overall management of the Targets program -Continued Information Technology support for Other Government Agencies (OGAs) so that subject matter experts could be used to support Target requirements -Continued Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure targets representative of future feasible threats technology is being incorporated into the Targets program -Continued Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success -Continued information technology and classified network support to ensure sensitive target information is not compromised -Continued Software Independent Verification and Validation (IV&V) for targets, including the Extended Medium Range Ballistic Missile (eMRBM) and Launch Vehicle-2 (LV-2), and Medium Range Ballistic Missile Type 3 (MRBM T3) to provide risk reduction of flight missions -Continued Missile Defense Agency Engineering Directorate targets and countermeasures requirements support to ensure targets accurately represent the threat <p>Logistics and Sustainment: Provided maintenance, transportation, utilities, storage, license fees, aging surveillance, disposal and material handling for targets, target components, re-entry rebuilds, associated objects, and support equipment. Targets and Countermeasures (TC) utilized storage to acquire and preserve existing booster motors; and other target hardware from DoD inventory to build future targets with existing, flight qualified components, which helped reduce future development and manufacturing costs to include:</p> <ul style="list-style-type: none"> -C4 Motors - Storage, disposal, transportation, aging surveillance, and static fire support 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Castor IVB - Storage support</p> <p>-Lance - Missile sustainment, telemetry van sustainment and facilities sustainment support</p> <p>-M-57 - Storage, disposal, transportation, and aging surveillance support</p> <p>-Orbus 1A - Missile sustainment support</p> <p>-SR-19 - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Multi-Class Inventory storage, aging surveillance, and transportation support</p> <p>-Multi-Class Other - Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification support</p> <p>-Single Integration Capability Facility -Storage, target integration and logistics support</p> <p><i>FY 2012 Plans:</i></p> <p>System Engineering and Program Management: Perform program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p> <p>-Continue Program Management and Business Operations for target components to provide a framework for overall management of the Targets program</p> <p>-Continue Information Technology support for Other Government Agencies (OGAs) so that subject matter experts can be used to support Target requirements</p> <p>-Continue Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure representative of feasible future threats; technology is being incorporated into the Targets program</p> <p>-Continue Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success</p> <p>-Continue information technology and classified network support to ensure sensitive target information is not compromised</p> <p>-Continue Software Independent Verification and Validation (IV&V) for targets including the Extended Medium Range Ballistic Missile (eMRBM), Launch Vehicle-2 (LV-2), Air-Launched Intermediate Range Ballistic Missile, and Medium Range Ballistic Missile Type 3 (MRBM T3) to provide risk reduction of flight missions</p> <p>-Perform prime contractor program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests</p> <p>Logistics and Sustainment: Provides maintenance, transportation, utilities, storage, license fees, aging surveillance, disposal and material handling for targets, target components, re-entry rebuilds, associated objects, and support equipment. Targets and Countermeasures utilizes storage to acquire and preserve existing booster motors and other target hardware from DOD inventory to build future targets with existing, flight qualified components, which help reduce future development and manufacturing costs to include:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-C4 Motors - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Castor IVA - Transportation costs</p> <p>-Castor IVB - Storage costs</p> <p>-GEM-40 - Desiccant baffles and forward dome inspection costs</p> <p>-Lance -Transferred for de-militarization and disposal</p> <p>-Orbus 1A - Missile sustainment</p> <p>-Multi-Class Inventory storage, aging surveillance, and transportation costs</p> <p>-Multi-Class Other - Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification costs</p> <p>-Single Integration Capability Facility Storage, target integration and logistics support</p> <p>Refer to Project MT05 in Program Element 0603915C for the balance of FY 2012 Plans.</p> <p>FY 2013 Plans: Refer to Project MT05 in Program Element 0603915C for FY 2013 Plans</p>				
<p>Title: Target Hardware</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Target Hardware includes the design and build of Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, and common payloads and components. It provides for support of specific flight tests in the areas of pre-mission and post-mission analysis. Missile Defense Agency's Test Directorate is responsible for all target launch operations to include range coordination and use, transportation of equipment and target hardware to the range, and launch execution.</p> <p>Specifically, target development effort provides for the non-recurring engineering (NRE) development of Short Range Ballistic Missile (SRBM), Medium Range Ballistic Missile (MRBM), Intermediate Range Ballistic Missile (IRBM), reentry vehicle, and associated object systems to support Ballistic Missile Defense System (BMDS) flight testing. It includes short, medium, intermediate and long range target systems with air, sea, and ground launch capabilities as well as enhancements to legacy target systems for cost effective target solutions. Efforts include requirements decomposition, design, qualification testing, and characterization. It includes ensuring boosters, inter-stages, avionics systems, reentry vehicles, payload deployment modules, and associated objects adhere to interface specifications and meet reliability, mission assurance, and cost goals. Efforts address target producibility, manufacturing maturity, and affordability. Supporting this objective are the necessary modeling and simulation</p>		<p>406.503</p> <p>Articles: 0</p>	<p>66.716</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>efforts, analyses, configuration management, technical interchange meetings, and design reviews resulting in designs that meet BMDS requirements.</p> <p>The manufacturing of target hardware includes the development of full up targets and target components for SRBM, MRBM, and IRBM assets. It includes integrated or component ballistic missile flight test hardware (launch vehicles, reentry vehicles, associated objects, and kits); target characterization; quality and mission assurance; government furnished equipment and services; and transportation and logistics support.</p> <p>Target requirements are delineated in the MDA Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p> <p>FY 2011 accomplishments included developing, building, and supporting the launch of the following target types to enable BMDS testing and validation of the BMDS weapon system performance:</p> <p>Multi-Class Components: Developed, built, and supported common payloads and components, re-entry vehicles, booster motors, and associated objects to support the manufacturing of targets for SRBM, MRBM, and IRBM assets. Specifically, the funds were used for non-recurring engineering (NRE) and recurring engineering to accomplish the following:</p> <ul style="list-style-type: none"> -Continued Modified Ballistic Re-Entry Vehicle-7 (MBRV-7) development -Initiated development of MBRV-8 -Family 1C delivery and second successful deployment of associated objects in FTG-06A -Continued Family 1F development -Continued Family 1G development -Other Counter Measure/Associate Object Non-Recurring Engineering to include the United Kingdom Project Agreement -Continued production of SR-19 Flexseals -Provided funding for Special Targets <p>Intermediate Range Ballistic Missile (IRBM): Specifically, target development efforts provided for the non-recurring engineering (NRE) and recurring development of IRBM launch vehicles to support BMDS flight testing. Efforts included requirements decomposition, design, qualification testing, characterization, and build. This supported the Missile Defense Agency (MDA) objective to demonstrate the intermediate range ballistic missile threat and capabilities.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
<p>-Launch Vehicle 2 (LV-2) - Initiated/continued development of Ship Sets 3 thru 6 -Successful delivery and launch of Ship Sets 2 and 3 in support of BMDS flight tests -IRBM Type 1/Type 2(T1/T2) - Initiated/continued development of Ship Sets 1 thru 8</p> <p>Medium Range Ballistic Missile (MRBM): Specifically, target development efforts provided for the non-recurring engineering (NRE) and recurring development of MRBM launch vehicles to support BMDS flight testing. Efforts included requirements decomposition, design, qualification testing, characterization, and build. This supported the MDA objective to demonstrate the medium range ballistic missile threat and capabilities.</p> <p>-Extended Medium Range Ballistic Missile (eMRBM) - Initiated/continued development of Ship Sets 1 thru 5 -Extended Long Range Air Launch Target (ELRALT) - Initiated/continued development of Ship Sets 1 and 2 -Medium Range Ballistic Missile Type 3 (MRBM T3) - Initiated development of Ship Sets 1 thru 3</p> <p>Short Range Ballistic Missiles (SRBM): Specifically, target development efforts provided for the non-recurring engineering (NRE) and recurring development of SRBM launch vehicles to support BMDS flight testing. Efforts included requirements decomposition, design, qualification testing, characterization, and build. This supported the MDA objective to demonstrate the short range ballistic missile threat and capabilities.</p> <p>-Short Range Air Launched Target (SRALT) - Initiated/continued build of Ship Sets 2 and 3 -Successful delivery and launch of Ship Set 3 in support of Flight Test Tracking Exercise-17 (FTX-17) -Aegis Readiness Assessment Vehicle-C (ARAV-C) - Initiated/continued build of Ship Sets 1, 4, 5, and 6 -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Initiated/continued build of Ship Sets 9 thru 15 -Foreign Materiel Acquisition-2 (FMA-2) - Initiated/continued build of Ship Sets 3 and 4 -Foreign Materiel Acquisition-1 (FMA-1) - Initiated/continued build of Ship Set 10 -Medium Range Target (MRT) - Initiated/continued build of Ship Sets 7 and 10</p> <p>FY 2012 Plans: Target requirements are delineated in the MDA Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p> <p>FY 2012 Base Plans are to develop, build, and support the launch of the following target types to enable BMDS testing and validation of the BMDS weapon system performance:</p>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Multi-Class Components: Develop, build, and support common payloads and components, re-entry vehicles, booster motors, and associated objects to support the manufacturing of targets for SRBM, MRBM, IRBM, and ICBM assets. Specifically, the funds are used for non-recurring engineering (NRE) and recurring engineering to:</p> <ul style="list-style-type: none"> -Initiate/continue development and delivery of Modified Ballistic Re-Entry Vehicle-5 (MBRV-5) -Initiate/continue development and delivery of MBRV-7 -Initiate/continue development and delivery of Attitude Control Module (ACM) -Initiate/ continue development of all other Re-entry Vehicles, Associated Objects, and Motors in support of the current Integrated Master Test Plan. <p>Intermediate Range Ballistic Missile (IRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of IRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the intermediate range ballistic missile threat and capabilities.</p> <ul style="list-style-type: none"> -Launch Vehicle 2 (LV-2) - Deliver Ship Set 4, continue development of Ship Sets 5 and 6 -IRBM T1/T2 - Initiate/continue development of Ship Sets 1 thru 8 -Initiate/continue development of all other IRBMs in support of the current Integrated Master Test Plan (IMTP) <p>Medium Range Ballistic Missile (MRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of MRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the medium range ballistic missile threat and capabilities.</p> <ul style="list-style-type: none"> -Extended Medium Range Ballistic Missile (eMRBM) - Initiate/continue development of Ship Sets 1 thru 5 -Extended Long Range Air Launch Target (ELRALT) - Initiate/continue development of Ship Sets 1 and 2 -MRBM Type 3 (MRBM T3) - Initiate/continue development of Ship Sets 1 thru 4 -Initiate/continue development of all other MRBMs in support of the current IMTP <p>Short Range Ballistic Missiles (SRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of SRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the short range ballistic missile threat and capabilities.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Short Range Air Launched Target (SRALT) - Initiate/continue development of Ship Set 2 -Aegis Readiness Assessment Vehicle-C (ARAV-C) - Initiate/continue development of Ship Sets 1, 4, 5, and 6 -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Initiate/continue development of Ship Sets 9-15 -Aegis Readiness Assessment Vehicle-A (ARAV-A) - Initiate/continue development of Ship Sets 8-12 -Initiate/continue development of all other SRBMs in support of the current IMTP Refer to Project MT05 in Program Element 0603915C for the balance of FY 2012 Plans. FY 2013 Plans: Refer to Project MT05 in Program Element 0603915C for FY 2013 Plans.			
Accomplishments/Planned Programs Subtotals	545.209	85.569	-

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	0.000	2,763.751

D. Acquisition Strategy

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

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	MD05: <i>Targets Program</i>

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

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

The Aegis Readiness Assessment Vehicle (ARAV) target effort is managed by TC and the Naval Surface Warfare Center Port Hueneme Division White Sands (NSWC PHD WS). NSWC PHD WS has unique sounding rocket expertise and access to existing contracts managed by White Sands Missile Range that makes this a beneficial relationship for both parties. TC provides targets funding via Military Interdepartmental Purchase Orders that NSWC PHD WS expends on its hardware development and engineering contracts. In addition, TC provides funding to Sandia National Labs in support of the Attitude Control Module (ACM) development effort for the ARAV Group C target. NSWC PHD WS manages the integration of the ACM onto the launch vehicle. The MDA Test Directorate (DT) is responsible for funding all launch services of these targets in support of the IMTP.

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

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
<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. For example, a mobile launched ICBM Type 1 or Type 2 target is representative of a Type 3 configuration in the intercontinental range class.</p> <p>TC is in the process of transitioning from a `just-in-time` approach to delivering unique targets to meet specific flight test requirements to more of a production based strategy geared towards building an inventory of product lines able to meet multiple test requirements. Work under existing contracts/orders will run to completion rather than being transitioned to a new contractor(s).</p> <p>Future targets may be procured under the new acquisition competitive Request for Proposals unless the new acquisitions would result in higher cost, delivery delays, or less capable targets. TC will procure pre and post mission planning, data products, support to modeling and simulation and ground test, inventory sustainment and management, and flight test execution.</p> <p>E. Performance Metrics N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations Personnel Support - 1	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	45.481	0.249	Nov 2011	-		-		-	0.000	45.730	0.000
Program Operations Government Support - 1	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	2.226	0.059	Nov 2011	-		-		-	0.000	2.285	0.000
Program Operations Personnel Support - 6	FFRDC	Johns Hopkins University Applied Physics Lab:Laurel, MD	3.055	0.031	Nov 2011	-		-		-	0.000	3.086	0.000
Program Operations Personnel Support - 7	MIPR	US Air Force Space and Missile Systems Center (SMC):Kirtland AFB, NM	1.781	0.378	Nov 2011	-		-		-	0.000	2.159	0.000
Program Operations Personnel Support - 8	MIPR	US Army Aviation and Missile Command:Huntsville, AL	3.482	0.169	Nov 2011	-		-		-	0.000	3.651	0.000
Program Operations Personnel Support - 15	C/FFP	Colsa Corporation:Huntsville, AL	0.523	0.070	Nov 2011	-		-		-	0.000	0.593	0.000
Target Support Sys Eng - 1	C/CPAF	Lockheed Martin Space Systems:Courtland, AL	116.735	0.705	Nov 2011	-		-		-	0.000	117.440	0.000
Target Support Sys Eng - 2	C/FFP	The Analytic Sciences Corporation (TASC):Albuquerque, NM	6.103	1.671	Nov 2011	-		-		-	0.000	7.774	0.000
Target Support Sys Eng - 3	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	8.092	0.018	Nov 2011	-		-		-	0.000	8.110	0.000
Target Support Sys Eng - 4	C/FFP	Wyle Laboratories:Huntsville, AL	1.915	0.285	Nov 2011	-		-		-	0.000	2.200	0.000
Target Support Sys Eng - 5	FFRDC	Johns Hopkins University Applied Physics Lab:Baltimore, MD	5.942	0.500	Nov 2011	-		-		-	0.000	6.442	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Support Sys Eng - 6	FFRDC	Aerospace Corporation:El Segundo, CA	3.191	0.679	Nov 2011	-		-		-	0.000	3.870	0.000
Target Support Sys Eng - 7	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	7.726	0.650	Nov 2011	-		-		-	0.000	8.376	0.000
Target Support Sys Eng - 9	MIPR	US Air Force Space & Missile Systems Center (SMC):Kirtland AFB, NM	1.479	0.233	Nov 2011	-		-		-	0.000	1.712	0.000
Target Support Log - 1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	29.926	1.057	Nov 2011	-		-		-	0.000	30.983	0.000
Target Support Log - 2	C/CPFF	Alliant Techsystems:Magna, UT	2.674	0.791	Nov 2011	-		-		-	0.000	3.465	0.000
Target Support Log - 3	C/FFP	Aerojet Corporation:Albuquerque, NM	2.356	0.100	Nov 2011	-		-		-	0.000	2.456	0.000
Target Support Log - 4	C/FFP	Alliant Techsystems, Inc. (ATK):Magna, UT	18.392	0.941	Nov 2011	-		-		-	0.000	19.333	0.000
Target Support Log - 9	MIPR	Hill Air Force Base:Ogden, UT	3.583	0.400	Nov 2011	-		-		-	0.000	3.983	0.000
Target Support Log - 12	MIPR	New Mexico State Univ. Physical Sciences Lab:Las Cruces, NM	2.349	0.300	Nov 2011	-		-		-	0.000	2.649	0.000
Target Support Log - 13	MIPR	Naval Surface Warfare Center:Crane, IN	14.108	3.884	Nov 2011	-		-		-	0.000	17.992	0.000
Target Support Log - 18	MIPR	United States Property & Fiscal Office for Arizona:Phoenix, AZ	7.996	0.935	Nov 2011	-		-		-	0.000	8.931	0.000
Target Support Sys Eng - 13	MIPR	Missile Defense Agency:Arlington, VA	6.016	4.748	Nov 2011	-		-		-	0.000	10.764	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Hardware MRBM - 1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	77.328	19.977	Nov 2011	-		-		-	0.000	97.305	0.000
Target Hardware MRBM - 3	C/CPAF	L3 Communications/ Coleman Aerospace:Orlando, FL	115.462	2.970	Nov 2011	-		-		-	0.000	118.432	0.000
Target Hardware Multi-Class - 5	C/CPAF	Lockheed Martin Space Systems:Courland, AL	9.755	19.931	Nov 2011	-		-		-	0.000	29.686	0.000
Target Hardware SRBM - 1	C/CPAF	L3 Communications/ Coleman Aerospace:Orlando, FL	-	8.710	Nov 2011	-		-		-	0.000	8.710	0.000
Target Hardware SRBM-2	MIPR	Naval Surface Warfare Center, Port Hueneme:Port Hueneme, CA	-	14.188	Nov 2011	-		-		-	0.000	14.188	0.000
Target Hardware IRBM-1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	-	0.174	Nov 2011	-		-		-	0.000	0.174	0.000
Target Hardware IRBM-2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	0.766	Nov 2011	-		-		-	0.000	0.766	0.000
Subtotal			497.676	85.569		-		-		-	0.000	583.245	0.000

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

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Project Cost Totals		497.676		85.569		-		-		0.000	583.245	0.000

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)							△																					
FMA-2 (SRBM)Pre-Ship Readiness Review (Ship Set 4)	▲																											
FMA-2 (SRBM)Pre-Ship Readiness Review (Ship Set 3)				▲																								
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 7)				▲																								
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)							△																					
STRYPI (SRBM) Pre-Ship Readiness Review (Ship Set 1)	▲																											
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)							△																					
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)							△																					
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 8)			▲																									
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)							△																					
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 3)		▲																										
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)							△																					
SRALT (SRBM) Pre-Ship Readiness Review (Ship Set 2)								△																				
E-LRALT Pre-Ship Readiness Review (Ship Set 1)								△																				
e MRBM Preliminary Design Review			▲																									
e MRBM Critical Design Review				▲																								
MRBM Type 3 Contract Award (NRE)				▲																								
MRBM Type 3 Preliminary Design Review								△																				
LV-2 Pre-Ship Readiness Review (Ship Set 3)		▲																										
LV-2 Pre-Ship Readiness Review (Ship Set 4)								△																				
IRBM Type 1/Type 2 Contract Award (NRE)		▲																										
IRBM Type 1/Type 2 Critical Design Review								△																				
IRBM Type 1/Type 2 Preliminary Design Review							△																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
FMA-2 (SRBM)Pre-Ship Readiness Review (Ship Set 4)	1	2011	1	2011
FMA-2 (SRBM)Pre-Ship Readiness Review (Ship Set 3)	4	2011	4	2011
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 7)	4	2011	4	2011
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
STRYP1 (SRBM) Pre-Ship Readiness Review (Ship Set 1)	1	2011	1	2011
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)	3	2012	3	2012
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)	3	2012	3	2012
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 8)	3	2011	3	2011
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 3)	2	2011	2	2011
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)	3	2012	3	2012
SRALT (SRBM) Pre-Ship Readiness Review (Ship Set 2)	4	2012	4	2012
E-LRALT Pre-Ship Readiness Review (Ship Set 1)	4	2012	4	2012
e MRBM Preliminary Design Review	3	2011	3	2011
e MRBM Critical Design Review	1	2012	1	2012
MRBM Type 3 Contract Award (NRE)	4	2011	4	2011
MRBM Type 3 Preliminary Design Review	4	2012	4	2012
LV-2 Pre-Ship Readiness Review (Ship Set 3)	2	2011	2	2011
LV-2 Pre-Ship Readiness Review (Ship Set 4)	3	2012	3	2012
IRBM Type 1/Type 2 Contract Award (NRE)	2	2011	2	2011
IRBM Type 1/Type 2 Critical Design Review	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
IRBM Type 1/Type 2 Preliminary Design Review	2	2012	2	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	34.137	-	-	-	-	-	-	-	-	0.000	34.137
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012, Program Wide Support content transfers to BMD Enabling PE 0603890C (Budget Project MD40) as directed by the Consolidated Appropriation Act of FY 2012 (Public Law 112-74)

Starting in FY 2013, Program Wide Support content transfers to the following Program Elements: BMD Test and Evaluation PE 0603914C (Budget Project MD40) and BMD Targets PE 0603915C (Budget Project MD40).

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) consists of essential non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts.

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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	34.137	-	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: In FY 2012, Program Wide Support content transfers to BMD Enabling PE 0603890C (Budget Project MD40) as directed by the Consolidated Appropriation Act of FY 2012 (Public Law 112-74).			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD40: <i>Program-Wide Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Starting in FY 2013, Program Wide Support content transfers to the following Program Elements: BMD Test and Evaluation PE 0603914C (Budget Project MD40) and BMD Targets PE 0603915C (Budget Project MD40).			
Accomplishments/Planned Programs Subtotals	34.137	-	-

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	401.113	415.048	362.711	-	362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
MD24: <i>System Engineering & Integration</i>	139.703	133.890	88.315	-	88.315	90.534	95.782	99.527	99.369	Continuing	Continuing
MT23: <i>Enabling - Test</i>	-	-	32.386	-	32.386	28.277	52.276	44.979	39.393	Continuing	Continuing
MD28: <i>Intelligence & Security</i>	10.514	18.382	36.886	-	36.886	35.651	37.712	39.579	40.000	Continuing	Continuing
MD29: <i>Producibility & Manufacturing Technology</i>	30.565	-	-	-	-	-	-	-	-	0.000	30.565
MD30: <i>BMD Information Management Systems</i>	105.904	116.508	107.744	-	107.744	92.425	100.250	107.469	109.657	Continuing	Continuing
MD31: <i>Modeling & Simulation</i>	61.456	56.617	46.608	-	46.608	45.402	38.740	51.280	52.393	Continuing	Continuing
MD32: <i>Quality, Safety, and Mission Assurance</i>	27.476	33.045	34.388	-	34.388	31.454	32.477	35.097	35.254	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	25.495	56.606	16.384	-	16.384	15.454	16.109	17.419	18.019	Continuing	Continuing

Note

In FY 2012, funding from MD29 transferred to the Standard Missile-3 Block IIB, Program Element 0603902C, MD70

In FY 2012, funding from MD40 PE 0603888C transfers in as directed by the Consolidated Appropriation Act of FY 2012 (Public Law 112-74).

In FY 2013, funding from MD40 PE 0603892C Program Wide Support is transferred to the MD28 PE 0603890C Intelligence & Security Project in the amount of \$16.679 million dollars for Intelligence and Security civilian salaries and the Research, Development and Security Program.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense (BMD) System Enabling Programs provide the Missile Defense Agency (MDA) with the critical processes needed to integrate element missile defense systems into a layered Ballistic Missile Defense System (BMDS) providing the capability required by BMD Review, while improving protection performance with increased defended area, and minimizing force structure costs. The Enabling Programs, embedded within a single Program Element (PE), 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.

The MDA Enabling Programs are:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>

-(MD24) Systems Engineering and Integration - Systems Engineering and Integration (SE&I) 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 such as Aegis Ashore 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 Ballistic Missile Defense System test planning, execution and post-test assessment and provides critical data for proving that missile defense works.

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

-(MD29) Producibility and Manufacturing Technology - Producibility and Manufacturing focuses on technology development for future generation interceptors.

-(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.

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

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

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	402.769	373.563	331.203	-	331.203
Current President's Budget	401.113	415.048	362.711	-	362.711
Total Adjustments	-1.656	41.485	31.508	-	31.508
• Congressional General Reductions	-2.760	-0.483			
• Congressional Directed Reductions	-40.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	43.500	41.968			
• Reprogrammings	2.203	-			
• SBIR/STTR Transfer	-4.799	-			
• Other Adjustment	0.200	-	31.508	-	31.508

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

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

R-1 ITEM NOMENCLATURE
PE 0603890C: *BMD Enabling Programs*

Change Summary Explanation

FY 2011 changes include: -\$40.000 million Congressional Reduction; +\$43.500 million Congressional Transfer in from 0603888C Test and Targets engineering efforts as directed by the Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10); and SBIR/STTR -\$4.799 million. Other adjustments include General Provision reductions for 8024(f) FFRDC of -\$0.427 million, Economic Assumption 8117 of - \$2.065 million, and Civilian Pay - \$0.268 million.

The FY 2012 increase includes \$41.968 million Congressional transfer directed by the Consolidated Appropriation Act of FY 2012 (Public Law 112-74) transfer from MD40 Program Wide Support, BMDS Test and Targets Program Element 0603888C.

The FY 2013 \$31.508 million increase includes the transfer of a portion of the Intelligence and Security personnel from Program Wide Support (Budget Project MD40) from the BMD Aegis Program Element (PE) 0603892C to the Intelligence & Security Project MD28 in the Enabling Program Element (PE) 0603890C, plus realignment to Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD24: <i>System Engineering & Integration</i>	139.703	133.890	88.315	-	88.315	90.534	95.782	99.527	99.369	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

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 Ballistic Missile Defense engagements and develops the BMDS level Models and Simulations (M&S) necessary to support BMDS testing and delivery to the War-fighter. SE&I develops technical roadmaps, knowledge points, and capability trades at the Ballistic Missile Defense System level to balance integration and improvement efforts. The SE&I workforce, including Industry and Contractor Support Services (CSS), also provides analysis, decision-making and planning activities for real-world operations to the White House, Joint Staff, Military Services, North Atlantic Treaty Organization (NATO), Combatant Commanders (Military Utility Assessment), Operational Test Agencies, Director of Operational Test and Evaluation, Allies, and others. Systems Engineering and Integration is the single team that applies its technical expertise, tools, and facilities across many disciplines and specialties to lead the collaborative effort to define, design, test and integrate the Ballistic Missile Defense System.

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

- Develop, design, test and integrate the layered Ballistic Missile Defense System that provides the required Ballistic Missile Defense performance.
- Develop a four-phased European Phased Adaptive Approach (EPAA) architecture and requirements to respond to the proliferation of short and medium range ballistic missiles, provide a more effective missile defense capability for U.S. deployed forces, allies, and partners in Europe, and enhanced homeland defense.
- Provide system-level support to the Elements for definition, design, and integration of the Ballistic Missile Defense System capabilities
- Provide technical direction to Element and Component developers and provide System-level forums to track, assess, and improve hardware and software reliability
- Lead collaborative and cross-Element and cross-Component engineering
- Verify and Assess through testing and Ballistic Missile Defense System performance and capabilities
- Develop Ballistic Missile Defense System Performance Assessment parameters
- Identify the Critical Engagement Conditions and data required to develop the test campaigns that will demonstrate regional defense performance, and verify and assess the capability of each Phased Adaptive Approach
- Define the test objectives necessary to anchor Ballistic Missile Defense System-level models and simulations, enable independent verification and validation, and identify System issues occurring in ground and flight tests

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD24: <i>System Engineering & Integration</i>

- Identify Ballistic Missile Defense System capabilities and limitations
- Develop, manage and use BMDS level Modeling and Simulation (M&S) to verify BMDS performance in system operational regions outside the live fire testing regions.
- Analyze Architecture Alternatives and New Technologies
- Provide detailed analysis to support MDA leadership and US policy decisions
- Pursue architecture alternatives that are complementary to and interoperable with North Atlantic Treaty Organization systems and other theaters around the world and improve the System`s performance
- Establish technical roadmaps for future defense capabilities
- Evaluate mature capabilities using Engineering and Manufacturing Readiness Level assessments to analyze risks in advance of manufacturing processes
- Develop anti-tamper approaches to enable international fielding of the Ballistic Missile Defense System

Products: 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. Ballistic Missile Defense Systems Engineering provides significant and thorough guidance through the Ballistic Missile Defense System Description Document (BMD SDD) and Ballistic Missile Defense System Specifications (BMD SS) for Elements to design, build, and integrate the Ballistic Missile Defense System. The Ballistic Missile Defense System Interface Control Documents (SICDs), the Modeling and Simulation Master Plan (MSMP), and the Master Integration Plan (MIP) provide additional guidance to the Ballistic Missile Defense System Elements and Components.

The system engineering process defines required system-wide behavior, validates Element system designs, and assesses and verifies system capabilities in 5 stages: 1) Future concepts and planning; 2) Requirements and Design; 3) Integrated Master Test Plan (IMTP) Engineering; 4) Integration; and 5) Verification and Assessment. Additional engineering efforts which cross multiple stages of the system engineering process include the Countermeasures/Counter-countermeasures (CM/CCM), Threat Systems Engineering, Engineering Analysis and Quick Response Team, and Anti-Tamper, International Engineering, and Engineering Manufacturing Readiness Levels Development programs. This process occurs in a collaborative environment in close partnership with key stakeholders such as the Element developers, Combatant Commands, and international partners. Systems Engineering and Integration further collaborates with the Director for Operations on the system content and activities described in the Ballistic Missile Defense System Single Acquisition Master Plan (SAMP).

The Ballistic Missile Defense System Future Concepts directorate conducts the first step stage of the System Engineering and Integration process and directs the enterprise-wide lethality program, which ensures lethality, post-engagement assessment (miss/hit/kill assessment), collateral effects (such as debris) and consequences (identified for use by other agencies to determine management/mitigation strategies) are accounted for throughout the engineering process.

The Design and Specification directorate performs the second step of the engineering process using data developed during the planning process and collaborates with the Ballistic Missile Defense System Element and Component engineers to develop functional performance, interface, and design suitability requirements. Design and Specification activities culminate in System/Subsystem Requirements Reviews to ensure correct technical execution and understanding needed to realize the Phased Adaptive Approach (PAA) and increase the flexibility and capability of the Ballistic Missile Defense System.

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Integration and Assessment conducts the third, fourth, and fifth stages of the Systems Engineering and Integration process to prove that Missile Defense works: 3) horizontal integration of software and hardware; 4) test integration, verification and model validation; and 5) operational assessments with the Warfighter to facilitate fielding. During horizontal integration, Systems Engineering and Integration builds a time-phased Master Integration Plan and defines model data validation requirements that form the basis of the required test program in the Integrated Master Test Plan (IMTP) and Ballistic Missile Defense System Level Testing.

During test integration, verification, and model validation, engineering studies and analyses enable the allocation of test requirements to individual test events, design of test architectures, definition of target requirements, and generation of appropriate scenarios for ground and flight tests, in order to collect the required model validation data. Along with the support of the Director of Operational Test and Evaluation (DOT&E), System Engineering and Integration 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. System Engineering and Integration participates in test failure review boards, identifies shortfalls in data collection, and reallocates objectives to future test events until all identified model validation data is collected. Suitability 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 Ballistic Missile Defense System. 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 identify solutions that will ultimately improve BMDS reliability.

Finally, System Engineering and Integration uses a compilation of flight tests, ground tests, performance assessments and other analyses to perform a technical assessment of the incrementally delivered capability. This assessment activity links the Warfighter community and the Systems Engineering team, and provides sustaining engineering and analysis for configuration management, operations, and sustainment of Ballistic Missile Defense System capabilities.

Additional Systems Engineering and Integration efforts include the Countermeasures/Counter-countermeasures (CM/CCM) program, Threat Systems Engineering, Engineering Analysis/Quick Response Team support, and Technology Protection and Standards support. The Countermeasures/Counter-countermeasures program conducts tailored system engineering to facilitate Ballistic Missile Defense System capability improvement and works collaboratively with the Threat Systems Engineering team to synchronize and integrate adversary capability development efforts. Within the Countermeasures/Counter-countermeasures program, a Blue Team, comprised of Ballistic Missile Defense System, element, and Component technical experts, a White Team comprised of senior experts, and a Black Team comprised of adversary/conceptual countermeasures experts assessed Ballistic Missile Defense System performance and risk, identified mitigation approaches, and recommended priorities for MDA investments in counter-countermeasures. This effort concluded in FY 2011.

The Threat Systems Engineering team specifies adversary missile capabilities, defines parametric threat space, develops real world test scenarios, establishes system level and common and consistent threat data to support all five stages of the system engineering process, and provides threat input to key system engineering products. Threat Systems engineering products directly support the Phased Adaptive Approach (PAA) and International Cooperative Programs such as the enhanced Israeli Interceptor program, US-Japan Cooperative Program, and other North Atlantic Treaty Organization cooperative programs.

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<p>The Engineering Analysis and Quick Response Team provides force-on-force effectiveness analyses, identifies system level gaps and shortfalls, formulates system alternatives and their relative contributions, conducts engineering trade studies, provides Warfighter/war game analysis support, responds to Warfighter BMDS operational questions and builds rapid responses to senior Department (MDA Director/Deputy Director, Defense Secretary) and external (State Department, National Security Council) questions and scenarios. The team produces analyses for each stage of the systems engineering process, provides the technical basis and rationale for developing and balancing the integrated, layered Ballistic Missile Defense System, as well as performance predictions for each phase of the Phased Adaptive Approach.</p> <p>The BMDS Engineering Technology Protection and Standards includes Ballistic Missile Defense System, Anti-Tamper, and Engineering Manufacturing Readiness Level (EMRL) effort. The Ballistic Missile Defense System Anti-Tamper program provides protection against reverse engineering of Ballistic Missile Defense System critical technologies, supports coalition warfare, and extends the effective operational life of the Ballistic Missile Defense System. The Engineering and Manufacturing Readiness Levels effort provides a means of evaluating the maturity of the Ballistic Missile Defense System elements, systems, and components, by assessing the program or product against quantifiable criteria.</p> <p>BMDS Level Testing: In conjunction with the Director for Test, the Director for Engineering supplies test objectives that define the basic test 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 through definition and tracking of the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), as documented in the Integrated Master Test Plan (IMTP). The CECs and EMEs 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 Ballistic Missile Defense System 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.</p> <p>System Pre- and Post-Flight Reconstruction: System Engineering and Integration (SE&I) supports System Pre-Flight predictions for system level flight tests using the test framework set up with the Ballistic Missile Defense System configuration for a particular flight test. This provides confidence in Flight Test execution by predicting BMDS performance and exercising element interfaces. This work also ensures the flight test will collect the required data (including CECs and EMEs) and the data management plan will support System Post-Flight Reconstruction (SPFR) objectives. System Post-Flight Reconstruction uses a hardware-in-the-loop (HWIL) and/or a Digital Modeling and Simulation Environment to replicate the day of flight for the Ballistic Missile Defense System 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 Critical Engagement Conditions and Empirical Measurement Events. System Post-Flight Reconstruction is used for validation (anchoring) of the BMDS models and simulations.</p> <p>Interdependencies: Integrated ballistic missile defense capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide the most accurate track of enemy ballistic missile threats that may cross regions and fly higher and faster, as well as a more diverse and effective set of weapons and sensors for the Combatant Commander to defeat the attack; all connected by a unifying Command and Control Battle Management and Communications (C2BMC). Integrated Ballistic Missile Defense capabilities can result in an effort funded in one Program Element being critical to the success of efforts in other Program Elements. Such</p>		

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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results are referred to as interdependencies. Throughout the budget justification material, System Engineering`s interdependencies with the MDA directorates and the Ballistic Missile Defense System Elements and Components are highlighted in order to explain fully the relationship between different parts of the proposed program.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Future Concepts and Planning</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Completed the future capability System Concept review (Part 3) refining the baseline for the future Ballistic Missile Defense System (BMDS) architecture and the allocation of functional and performance requirements -Conducted analyses and supported analysis of alternatives for Precision Tracking Space System (PTSS), Standard Missile 3 (SM-3) Block IIB, and Advanced Remote Infrared planning, creating a foundation for System-Element architectural trade studies. -Updated the Future Systems Capability Document based on results of ongoing trade studies and architectural balancing activities -Updated the Capability Planning specifications for Precision Tracking Space System (PTSS) and the future Command and Control, Battle Management, and Communications (C2BMC) Components -Supported the execution of the Aegis Weapon System 5.1 BMD Standard Missile-3 (SM-3) Block IIA System Requirements Review -Conducted joint United States/United Kingdom virtual debris data benchmark testing that provides unique data points crucial in anchoring first principle and fast running debris prediction codes -Conducted two sub-scale virtual debris data benchmark tests against non-reentry vehicle objects -Completed work to add uncertainty estimation to virtual debris data predictions -Added ability to predict small debris to increase accuracy and fidelity of radar debris scene modeling -Provided 50+ virtual debris data sets to fill debris modeling data gaps -Assessed and added emerging threats to Missile Defense Agency lethality prediction models -Supported the North Atlantic Treaty Organization Consequence of Intercept Analysis Team (COIAT) with intercept consequence technical analysis -Maintained the Ballistic Missile Defense System (BMDS) System Engineering Plan ensuring synchronization of Element System Engineering Plans with the document <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Complete the ongoing Phased Adaptive Approach (PAA) Phase 3/4 architectural trade studies and update the concept capability documentation based on its results and the results of technology development experiments 	<p>13.238</p> <p>0</p>	<p>8.033</p> <p>0</p>	<p>10.181</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

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

	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Refine the Capability Planning specifications for Precision Tracking Space System (PTSS) and the future Command and Control Battle Management and Communications (C2BMC) components, leading to BMD System Requirements Reviews based on the architectural trade studies. -Support technology development reviews for Precision Tracking Space System (PTSS), and Standard Missile-3 (SM-3) Block IIB in support of follow on development efforts, leading to BMD System Requirements Reviews based on the architectural trade studies. -Develop the Capability Planning Specification for the Aegis 5.x weapon system and the Standard Missile 3 (SM-3) Block IIB -Produce an updated Ballistic Missile Defense System Lethality Program Plan to encompass lethality assessment, collateral effects and consequences -Assess and add emerging threats to Missile Defense Agency lethality prediction models -Support Defense Threat Reduction Agency (DTRA)/Missile Defense Agency efforts to provide consequence model predictive capabilities -Maintain the System Engineering Plan ensuring synchronization of Element System Engineering Plans with the System document -Countermeasures (CM)/Counter-countermeasures (CCM) Red Team: -Complete initial independent adversary (Red Team) perspective on Phased Adaptive Approach (PAA) capabilities -Complete independent adversary (Red Team) perspective on adversary attack strategy against PAA -Complete independent adversary (Red Team) selection of integrated countermeasure suites to be evaluated in FY 2013 <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete concept capability documentation updates based on the results of the Phased Adaptive Approach (PAA) Phase 3/4 architectural trade studies and technology development experiments -Refine the Capability Planning specifications for Precision Tracking Space System (PTSS) and the future Command and Control Battle Management and Communications (C2BMC) components -Support technology development reviews for Precision Tracking Space System (PTSS), and Standard Missile-3 (SM-3) Block IIB in support of follow on development efforts. -Develop the Capability Planning Specification for the Aegis 5.x weapon system and the Standard Missile 3 (SM-3) Block IIB -Produce an updated Ballistic Missile Defense System Lethality Program Plan to encompass lethality assessment, collateral effects and consequences -Assess and add emerging threats to Missile Defense Agency lethality prediction models -Support Defense Threat Reduction Agency (DTRA)/Missile Defense Agency efforts to provide consequence model predictive capabilities 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Maintain the System Engineering Plan ensuring synchronization of Element System Engineering Plans with the System document</p> <p>-Countermeasures (CM)/Counter-countermeasures (CCM) red Team:</p> <p>-Update independent adversary (Red Team) perspective on Phased Adaptive Approach (PAA)</p> <p>-Complete independent adversary (Red Team) evaluation of three integrated countermeasure suites against PAA</p> <p>-Complete independent adversary (Red Team) detailed evaluation of attack strategy against two selected PAA components</p>				
<p>Title: Countermeasures/Counter-Countermeasures (CM/CCM)</p> <p>Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Initiated the characterization of the Ballistic Missile Defense System architecture and elements assessed to be employed in the defense of Europe from ballistic missile attack based solely on open sources of information, basic scientific principles, and engineering judgment</p> <p>-Defined three generic threat systems that may be encountered in a defense of Europe</p> <p>-Assessed the European defense architecture for potential weaknesses and vulnerabilities</p> <p>-Initiated development of conceptual countermeasures to exploit assessed weaknesses</p> <p>-Initiated assessment of Ballistic Missile Defense System capabilities in regional engagement scenarios against short to intermediate range adversary ballistic missiles</p> <p>FY 2012 Plans:</p> <p>Please see FY 2012 Future Concepts and Planning accomplishments in MD24.</p> <p>FY 2013 Plans:</p> <p>Please see FY 2013 Future Concepts and Planning accomplishments in MD24.</p>		1.126 0	- 0	- 0
<p>Title: Requirements and Design</p> <p>Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Conducted Engineering Reviews for MDA Engineering:</p>		30.233 0	30.653 0	26.485 0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Conducted Ballistic Missile Defense 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</p> <p>-Continued technical evaluation of emerging adversary characteristics to be included within future Adversary Data Packages (ADP)</p> <p>-Developed updates to the Ballistic Missile Defense System Description Document, Ballistic Missile Defense System Specifications, and Ballistic Missile Defense System Interface Control Documents to document integrated system build content approved for design, development and integration</p> <p>-Conducted engineering analyses and performed trade studies for system design and development products to include Ballistic Missile Defense System Specification and Ballistic Missile Defense System Interface Control Documents</p> <p>-Provided updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common System/Element requirements interpretation</p> <p>FY 2012 Plans:</p> <p>-Conduct Engineering Reviews for MDA Engineering, which include new Phased Adaptive Approach capabilities:</p> <p>-Conduct Ballistic Missile Defense 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</p> <p>-Ensure requirements for the new Phased Adaptive Approach capabilities are adequately addressed</p> <p>-Continue technical evaluation of emerging adversary characteristics to be included within future Adversary Data Packages</p> <p>-Develop updates to the Ballistic Missile Defense System Description Document, Ballistic Missile Defense System Specification, and Ballistic Missile Defense System Interface Control Documents to document integrated system build content approved for design, development and integration, including new Phased Adaptive Approach capabilities (e.g., Phase III and IV documentation in the Ballistic Missile Defense System Description Document)</p> <p>-Conduct engineering analyses and perform trade studies for system design and development products, including the Ballistic Missile Defense System Specification and Ballistic Missile Defense System Interface Control Documents</p> <p>-Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common System/Element requirements interpretation</p> <p>FY 2013 Plans:</p> <p>-Conduct Engineering Reviews for MDA Engineering, which include new Phased Adaptive Approach capabilities:</p>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conduct Ballistic Missile Defense System/Subsystem Design Reviews following Element Requirement Reviews to assess the maturity of the technical baseline at both the System and Subsystem levels, as well as the plans for integration, test and verification prior to execution -Ensure requirements for the new Phased Adaptive Approach capabilities are adequately addressed -Continue technical evaluation of emerging adversary characteristics to be included within future Adversary Data Packages -Develop updates to the Ballistic Missile Defense System Description Document, Ballistic Missile Defense System Specification, and Ballistic Missile Defense System Interface Control Documents to document integrated system build content approved for design, development and integration, including new Phased Adaptive Approach capabilities (e.g., Phase III and IV documentation in the Ballistic Missile Defense System Description Document) -Conduct engineering analyses and perform trade studies for system design and development products, including the Ballistic Missile Defense System Specification and Ballistic Missile Defense System Interface Control Documents -Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common System/Element requirements interpretation 				
<p>Title: Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment</p> <p align="right">Articles:</p>		26.099	22.265	-
Description: See Description Below		0	0	0
<p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Updated the Master Integration Plan (MIP) to incorporate changes in planned delivery of Ballistic Missile Defense System 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 -Provided test definition, risk assessment, and anomaly and test incident report review, assessment, and closure to enable execution of the ground and flight test program -Allocated and tracked Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency for ground and flight tests in accordance with the Integrated Master Test Plan -Defined test objectives and evaluation criteria for all system level test events -Designed and certified scenarios for Ground Test Events to meet required data collection and satisfy System Engineering and Integration, Operational Test Agencies, and Warfighter objectives -Collected Ballistic Missile Defense System suitability data through the Joint Reliability and Maintainability Engineering Team (JRMET) Data Scoring Boards -Defined and executed required performance assessments to support incremental capability deliveries -Provided monthly updates for Ballistic Missile Defense System verification status 				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Performed System-level analysis and interoperability analysis on BMDS test events listed in the Integrated Master Test Plan (IMTP).</p> <p>-Developed Analysis Execution Plans (AEP) and final Test Analysis Reports (TAR) for BMDS test events listed in the IMTP.</p> <p>-Led Joint Analysis Teams (JAT) for BMDS test events listed in the IMTP.</p> <p>-Developed, delivered, and briefed Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Execution MDR (EMDR) for Ballistic Missile Defense System (BMDS) test events listed in the IMTP.</p> <p>-Incorporated software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability.</p> <p>-Continued to populate the MARS Analysis Database with most current test data to support analysis and capability assessments.</p> <p>-Led performance assessment to support Phased Adaptive Approach Phase I delivery.</p> <p>FY 2012 Plans:</p> <p>-Update the Master Integration Plan (MIP) to incorporate changes in planned delivery of Ballistic Missile Defense System content</p> <p>-Provide engineering inputs for Integrated Master Test Plan updates using the Planning Allocation Matrix (PAM) tool to identify integration, test, assessment, and verification activities</p> <p>-Collect Ballistic Missile Defense System Suitability Data through the Joint Reliability and Maintainability Engineering Team (JRMET) Data Scoring Boards</p> <p>-Provide pre- and post-test support for the Failure Reporting, Analysis, and Corrective Action System, which investigates BMDS test failures and identifies solutions that enhance reliability</p> <p>-Define and execute required performance assessments to support incremental capability deliveries</p> <p>-Provide monthly updates for Ballistic Missile Defense System verification status</p> <p>-Conduct BMD System Critical Design Review to document requirements used for performance assessments of incremental deliveries.</p> <p>-Perform System-level analysis and interoperability analysis on BMDS test events listed in the Integrated Master Test Plan (IMTP).</p> <p>-Develop Analysis Execution Plans (AEP) and final Test Analysis Reports (TAR) for BMDS test events listed in the IMTP.</p> <p>-Lead Joint Analysis Teams (JAT) for BMDS test events listed in the IMTP.</p> <p>-Develop, deliver, and brief Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR) for BMDS test events listed in the IMTP.</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>-Lead performance analysis planning and data collection to support upcoming capability deliveries.</p> <p>FY 2013 Plans:</p>				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
-FY 2013 plans are in budget project MT23 0603890C beginning in FY 2013 under accomplishment `IMTP Engineering, Integration, Verification and Assessment - SE&I`				
Title: Systems Engineering, Engineering Analysis and Quick Response Team		31.563	43.328	6.923
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Conducted system level performance analysis to support Ballistic Missile Defense System Architecture and Systems Engineering -Developed expected BMD System performance for each Phased Adaptive Approach (PAA) phase as input to System architecture and design effort, including extensive support for the Phased Adaptive Approach (PAA) Phase 3/4 architectural trade studies -Provided analysis in support of various BMD System Reviews -Updated the Element/Component Characterizations for Analysis (E/CCA) with latest performance data to improve capability -Maintained the Effective Metrics Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders -Provided engineering technical assessments in Ballistic Missile Defense System 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 2012 Plans: -Conduct overall Systems Engineering and Integration program operations and management. -Conduct system level performance analysis to support Ballistic Missile Defense System Architecture and Systems Engineering, including completion of the PAA Phase 3/4 architectural trade studies and System and Element Requirements Reviews -Develop expected performance for each Phased Adaptive Approach phase as input to System architecture and design effort -Conduct technical analyses and provide engineering assessments of the Standard Missile 3 Block IIB -Update the Element/Component Characterizations for Analysis (E/CCA) with latest performance data to improve capability -Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders -Provide engineering technical assessments in Ballistic Missile Defense System and Element programs to examine critical areas as designated by the Director for Engineering				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Provide analysis and assessment support to the Combatant Commands to respond to Warfighter requests for analyses and requests for information</p> <p>FY 2013 Plans:</p> <p>-Conduct overall Systems Engineering and Integration program operations and management</p> <p>-Conduct system level performance analysis to support Ballistic Missile Defense System Architecture and Systems Engineering</p> <p>-Develop expected performance for each Phased Adaptive Approach phase as input to System architecture and design effort</p> <p>-Conduct technical analyses and provide engineering assessments of the Standard Missile 3 Block IIB</p> <p>-Update the Element/Component Characterizations for Analysis (E/CCA) with latest performance data to improve capability</p> <p>-Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders</p> <p>-Provide engineering technical assessments in Ballistic Missile Defense System and Element programs to examine critical areas as designated by the Director for Engineering</p> <p>-Provide analysis and assessment support to the Combatant Commands to respond to Warfighter requests for analyses and requests for information</p>				
<p>Title: Threat Engineering</p> <p>Articles:</p>		11.238	3.205	8.788
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Developed a parametric threat space to support all phases of the BMDS Phased Adaptive Approach</p> <p>-Maintained and updated the agency-wide common and consistent Ballistic Missile Defense System threat to provide data for future Ballistic Missile Defense System design, verification, and assessment</p> <p>-Updated adversary missile capabilities and characterizations consistent with projected threat environment for the Ballistic Missile Defense System Phased Adaptive Approach (PAA)</p> <p>-Produced all the threat data required to enable Ballistic Missile Defense System Ground Tests for Phased Adaptive Approach Phase-1, Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the Ballistic Missile Defense System Integrated Master Test Plan</p> <p>-Produced parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach</p> <p>-Developed threat data for special projects</p>		0	0	0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Delivered analysis of threat representations of Ballistic Missile Defense System test targets, including analysis for Flight Test, Ground-Based Interceptor-06a (FTG-06a), Flight Test, Standard Missile-15 (FTM-15), and Flight Test, Terminal High Altitude Area Defense (THAAD)-24 (FTT-24)</p> <p>FY 2012 Plans:</p> <p>-Maintain and update the agency-wide common and consistent Ballistic Missile Defense System threat to provide data for future Ballistic Missile Defense System design, verification, and assessment</p> <p>-Update adversary missile capabilities and characterizations consistent with projected threat environment for the Ballistic Missile Defense System Phased Adaptive Approach</p> <p>FY 2013 Plans:</p> <p>-Maintain and update the agency-wide common and consistent Ballistic Missile Defense System threat to provide data for future Ballistic Missile Defense System design, verification, and assessment</p> <p>-Update adversary missile capabilities and characterizations consistent with projected threat environment for the Ballistic Missile Defense System Phased Adaptive Approach</p>				
<p>Title: Anti-Tamper and Engineering Manufacturing Readiness Levels Development</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Anti-Tamper:</p> <p>-Developed Anti-Tamper technologies to enable response and sensing capabilities for the Ballistic Missile Defense System (BMDS).</p> <p>Engineering and Manufacturing Readiness Levels (EMRLs):</p> <p>-Applied Engineering and Manufacturing Readiness Levels as a means of evaluating the engineering and manufacturing maturity of the Ballistic Missile Defense System elements, systems, and components, by assessing the program or product against quantifiable criteria</p> <p>-Used Engineering and Manufacturing Readiness Levels to assess the maturity of MDA development programs, and to report readiness for transition to production, in a standard format across all MDA Elements</p> <p>FY 2012 Plans: Anti-Tamper:</p>		<p>5.166</p> <p>0</p>	<p>6.521</p> <p>0</p>	<p>5.011</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Develop Anti-Tamper technologies to enable response and sensing capabilities for the Ballistic Missile Defense System (BMDS). Engineering and Manufacturing Readiness Levels (EMRLs):</p> <p>-Apply Engineering and Manufacturing Readiness Levels as a means of evaluating the engineering and manufacturing maturity of the Ballistic Missile Defense System elements, systems, and components, by assessing the program or product against quantifiable criteria -Use Engineering and Manufacturing Readiness Levels to assess the maturity of MDA development programs, and to report readiness for transition to production, in a standard format across all MDA Elements</p> <p>FY 2013 Plans: Anti-Tamper:</p> <p>-Develop Anti-Tamper technologies to enable response and sensing capabilities for the Ballistic Missile Defense System (BMDS). Engineering and Manufacturing Readiness Levels (EMRLs):</p> <p>-Apply Engineering and Manufacturing Readiness Levels as a means of evaluating the engineering and manufacturing maturity of the Ballistic Missile Defense System elements, systems, and components, by assessing the program or product against quantifiable criteria -Use Engineering and Manufacturing Readiness Levels to assess the maturity of MDA development programs, and to report readiness for transition to production, in a standard format across all MDA Elements</p>				
<p>Title: Independent Technical Assessment</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Performed independent analyses and assessments for the MDA Director and MDA Director for Engineering including Failure Investigations, system architecture studies, and test event data analysis. -Conducted non-advocate assessments of the Ballistic Missile Defense System (BMDS) capabilities and limitations prior to capability delivery decisions to determine fielding readiness. These assessments included Defense of the Homeland, Defense of Israel and Theater/Regional BMD.</p>		12.437 0	9.324 0	11.313 0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Conducted extensive, first-hand analysis of all data collected in Ballistic Missile Defense (BMD) test events (digital, hardware-in-the-loop, and flight test), resulting in analysis key to developing understanding of BMD operations and performance.

-Identified mitigation approaches for system performance issues uncovered during the course of analysis and assessment.

-Monitored the progress in improving digital simulation Performance Assessment events and produced an independent assessment of the validity of the models and simulations.

-Produced independent assessments of each Capability Delivery for Terminal High Altitude Defense, Patriot, Aegis Ballistic Missile Defense (BMD), forward-based Army-Navy Transportable Radar Surveillance (AN/TPY-2) and Command, Control, Battle Management and Communications (C2BMC) in support of fielding readiness for Phased Adaptive Approach.

FY 2012 Plans:

-Conduct non-advocate assessments of the BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness. These assessments include Defense of the Homeland, Phased Adaptive Approach (PAA), Defense of Israel and Theater/Regional BMD configurations (e.g., SITE B).

-Perform independent analyses and assessments for the MDA Director and MDA Director for Engineering including investment prioritization, system architecture studies, design reviews, and failure investigations.

-Monitor the development and recommend improvements to the digital simulation enterprise based on an evaluation of the validity of component-, Element- and System-level models (and frameworks) and participation in Performance Assessment and other digital Modeling and Simulation events.

FY 2013 Plans:

-Conduct non-advocate assessments of the BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness. These assessments include Defense of the Homeland, Phased Adaptive Approach (PAA), Defense of Israel and Theater/Regional BMD configurations (e.g., SITE B).

-Perform independent analyses and assessments for the MDA Director and MDA Director for Engineering including investment prioritization, system architecture studies, design reviews, and failure investigations.

-Monitor the development and recommend improvements to the digital simulation enterprise based on an evaluation of the validity of component-, Element- and System-level models (and frameworks) and participation in Performance Assessment and other digital Modeling and Simulation events.

Title: Knowledge Centers	8.603	9.443	13.686
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Identified and mitigated BMDS element (C2BMC, Interceptor, Space, and Sensor) technical risks, and served as independent technical advisors to the BMDS program offices.</p> <p>-Provided independent review of BMDS Knowledge Point closure, and participated in Failure Review Boards as necessary.</p> <p>FY 2012 Plans:</p> <p>-Identify and mitigate BMDS element (Command, Control, Battle Management and Communications, Interceptor, Space, and Sensor) technical risks, and serve as independent technical advisors to BMDS program offices</p> <p>-Provide independent review of BMDS Knowledge Point closure, and participate in Failure Review Boards as necessary</p> <p>-Provide program managers a mechanism to reach back to Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs) to support development of technical approaches to improve Command, Control, Battle Management and Communications (C2BMC), Interceptor, Space, and Sensor reliability</p> <p>FY 2013 Plans:</p> <p>-Identify and mitigate BMDS element (C2BMC, Interceptor, Space, and Sensor) technical risks, and serve as independent technical advisors to BMDS program offices</p> <p>-Provide independent review of BMDS Knowledge Point closure, and participate in Failure Review Boards as necessary</p> <p>-Provide program managers a mechanism to reach back to Federally Funded Research and Development Centers and University Affiliated Research Centers to support development of technical approaches to improve C2BMC, Interceptor, Space, and Sensor reliability</p>				
<p>Title: Risk Management</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Funding for Risk Management was not previously identified in FY 2011 (MD24)</p> <p>FY 2012 Plans: -Review, approve and configuration manage program risks across the BMDS.</p> <p>FY 2013 Plans: -Review, approve and configuration manage program risks across the BMDS.</p>		-	1.118	5.928
		0	0	0
Accomplishments/Planned Programs Subtotals		139.703	133.890	88.315

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Future Concepts and Planning Industry	C/CPAF	Boeing:AL	11.403	4.326	Oct 2011	5.481	Oct 2012	-		5.481	Continuing	Continuing	Continuing
Future Concepts and Planning CSS	C/CPAF	CSC:AL	10.292	1.385	Oct 2011	3.715	Oct 2012	-		3.715	Continuing	Continuing	Continuing
Future Concepts and Planning FFRDC / UARC	MIPR	SNL:CA	0.942	0.248	Oct 2011	0.314	Oct 2012	-		0.314	Continuing	Continuing	Continuing
Future Concepts and Planning FFRDC / UARC 1	MIPR	LLNL:CA	1.104	0.279	Oct 2011	0.354	Oct 2012	-		0.354	Continuing	Continuing	Continuing
Future Concepts and Planning Various	C/CPFF	Various:Various	0.794	0.249	Oct 2011	0.317	Oct 2012	-		0.317	Continuing	Continuing	Continuing
Future Concepts and Planning Planning CSS	C/CPFF	CSC:VA	-	1.546	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Countermeasures/Counter-Countermeasures (CM/CCM) CSS	C/CPFF	CSC:VA	0.813	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Countermeasures/Counter-Countermeasures (CM/CCM) CSS 1	C/CPFF	Cobham:CA	0.681	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Countermeasures/Counter-Countermeasures (CM/CCM) FFRDC/UARC	MIPR	IDA:VA	0.164	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Countermeasures/Counter-Countermeasures (CM/CCM) FFRDC/UARC 1	MIPR	MIT-LL:MA	0.480	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Countermeasures/Counter-Countermeasures (CM/CCM) CSS	C/CPFF	STS, LLC:VA	0.253	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Countermeasures/Counter-Countermeasures (CM/CCM) Industry	C/CPAF	Boeing:AL	0.716	-		-		-		-	Continuing	Continuing	Continuing
Requirements and Design Industry	C/CPAF	Boeing:AL	31.095	17.274	Oct 2011	18.210	Oct 2012	-		18.210	Continuing	Continuing	Continuing
Requirements and Design CSS	C/CPFF	CSC:various	9.979	6.174	Oct 2011	6.510	Oct 2012	-		6.510	Continuing	Continuing	Continuing
Requirements and Design FFRDC/UARC	MIPR	MIT/LL:MA	1.251	0.542	Oct 2011	0.573	Oct 2012	-		0.573	Continuing	Continuing	Continuing
Requirements and Design Other DoD	MIPR	NSWC:IN	2.784	1.032	Oct 2011	1.089	Oct 2012	-		1.089	Continuing	Continuing	Continuing
Requirements and Design FFRDC/UARC	MIPR	LLNL:CA	0.190	0.099	Oct 2011	0.103	Oct 2012	-		0.103	Continuing	Continuing	Continuing
Requirements and Design FFRDC/UARC 1	MIPR	JHU-APL:VA	2.274	-		-		-		-	Continuing	Continuing	Continuing
Requirements and Design CSS 1	C/CPFF	Cobham:CA	-	5.532	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment Industry	C/CPAF	Boeing:AL	16.979	15.371	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment CSS	C/CPFF	CSC:Various	13.601	2.000	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment FFRDC/UARC 1	FFRDC	JHU APL:VA	2.989	2.004	Oct 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment FFRDC/UARC 2	MIPR	MITRE:VA	0.664	0.445	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment FFRDC/UARC 3	MIPR	SNL:CA	0.765	0.445	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment FFRDC - 201112195672415	MIPR	Aerospace:CA	0.405	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment CSS 1	C/CPFF	Cobham:CA	-	2.000	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team Industry	C/CPAF	Boeing:AL	26.380	32.929	Oct 2011	5.263	Oct 2012	-		5.263	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team CSS	C/CPFF	CSC:various	10.548	7.799	Oct 2011	1.246	Oct 2012	-		1.246	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team FFRDC/UARC	MIPR	Aerospace:VA	0.487	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team FFRDC/UARC 1	MIPR	MITRE:VA	2.888	2.600	Oct 2011	0.414	Oct 2012	-		0.414	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and	FFRDC	JHU-APL:VA	0.767	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Quick Response Team FFRDC/UARC 2													
Systems Engineering, Engineering Analysis and Quick Response Team FFRDC/UARC 3	MIPR	MIT/LL:MA	0.434	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team FFRDC/UARC 4	MIPR	LLNL:CA	0.293	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Threat Engineering CSS	C/CPFF	Torch Technologies:Various	5.747	1.219	Oct 2011	3.344	Oct 2012	-		3.344	Continuing	Continuing	Continuing
Threat Engineering FFRDC/UARC	FFRDC	JHU APL:VA	1.565	0.226	Oct 2011	0.617	Oct 2012	-		0.617	Continuing	Continuing	Continuing
Threat Engineering FFRDC/UARC 1	MIPR	MIT-LL:MA	4.411	0.974	Oct 2011	2.671	Oct 2012	-		2.671	Continuing	Continuing	Continuing
Threat Engineering FFRDC/UARC 2	MIPR	SNL:CA	3.478	0.652	Oct 2011	1.787	Oct 2012	-		1.787	Continuing	Continuing	Continuing
Threat Engineering FFRDC/UARC 3	MIPR	LLNL:CA	0.865	0.134	Oct 2011	0.369	Oct 2012	-		0.369	Continuing	Continuing	Continuing
Threat Engineering CSS	C/CPFF	Schafer:VA	3.389	-		-		-		-	Continuing	Continuing	Continuing
Threat Engineering Industry	C/CPAF	Boeing:AL	2.783	-		-		-		-	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development Anti-Tamper Support	MIPR	NSWC Crane:IN	2.674	2.280	Oct 2011	1.751	Oct 2012	-		1.751	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development CSS/Travel	C/CPFF	DRC, Cobham:CA	2.092	0.798	Oct 2011	0.614	Oct 2012	-		0.614	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development Commonality and Standards	C/CPFF	DRAPER:MA	2.822	3.443	Oct 2011	2.646	Oct 2012	-		2.646	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Independent Technical Assessment FFRDC/UARC	MIPR	Aerospace:CA	8.605	2.331	Oct 2011	2.829	Oct 2012	-		2.829	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 1	FFRDC	JHU APL:VA	3.746	1.305	Oct 2011	1.583	Oct 2012	-		1.583	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 2	FFRDC	Draper :MA	1.446	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 3	MIPR	GTRI:GA	5.337	1.399	Oct 2011	1.697	Oct 2012	-		1.697	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 4	MIPR	JPL:CA	0.931	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 5	MIPR	MIT/LL:MA	10.416	2.704	Oct 2011	3.281	Oct 2012	-		3.281	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 6	MIPR	MITRE:VA	6.120	1.585	Oct 2011	1.923	Oct 2012	-		1.923	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 7	MIPR	ORNL:TN	0.746	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Independent Technical Assessment FFRDC/UARC 8	MIPR	LLNL:CA	0.240	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC	MIPR	Aerospace:CA	1.912	2.365	Oct 2011	3.428	Oct 2012	-		3.428	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 1	MIPR	MIT/LL:MA	1.050	1.298	Oct 2011	1.882	Oct 2012	-		1.882	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 2	FFRDC	MITRE:VA	0.812	1.004	Oct 2011	1.453	Oct 2012	-		1.453	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 3	FFRDC	JHU/APL:VA	0.967	1.195	Oct 2011	1.731	Oct 2012	-		1.731	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 4	FFRDC	SDL:MA	0.096	0.119	Oct 2011	0.172	Oct 2012	-		0.172	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 5	MIPR	Draper:MA	0.755	0.933	Oct 2011	1.350	Oct 2012	-		1.350	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 6	MIPR	GTRI:GA	1.009	1.247	Oct 2011	1.809	Oct 2012	-		1.809	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Knowledge Centers FFRDC/UARC 7	MIPR	JPL:CA	0.490	0.606	Oct 2011	0.878	Oct 2012	-		0.878	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 8	MIPR	ORNL:TN	0.382	0.472	Oct 2011	0.684	Oct 2012	-		0.684	Continuing	Continuing	Continuing
Knowledge Centers FFRDC/UARC 9	MIPR	SEI:PA	0.064	0.079	Oct 2011	0.116	Oct 2012	-		0.116	Continuing	Continuing	Continuing
Knowledge Centers OGA	MIPR	ARMDEC:AB	0.025	0.031	Oct 2011	0.047	Oct 2012	-		0.047	Continuing	Continuing	Continuing
Knowledge Centers Other	MIPR	Northrop Grumman:VA	0.076	0.094	Oct 2011	0.136	Oct 2012	-		0.136	Continuing	Continuing	Continuing
Risk Management CSS	C/CPFF	MEI:AL	-	0.656	Oct 2011	3.490	Oct 2012	-		3.490	Continuing	Continuing	Continuing
Risk Management Other	MIPR	DAU:VA	-	0.026	Oct 2011	0.139	Oct 2012	-		0.139	Continuing	Continuing	Continuing
Risk Management Other 1	MIPR	MDA/DOI:VA	-	0.044	Oct 2011	0.231	Oct 2012	-		0.231	Continuing	Continuing	Continuing
Risk Management FFRDC/UARC	MIPR	MITRE:VA	-	0.392	Oct 2011	2.068	Oct 2012	-		2.068	Continuing	Continuing	Continuing
Subtotal			227.466	133.890		88.315		-		88.315			

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment BMDS Level Testing	C/CPAF	Boeing:VA	12.057	-		-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment BMDS Level Testing 1	C/CPFF	CSC:VA	2.462	-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment BMDS Level Testing 2	FFRDC	JHU APL:VA	1.731	-		-		-		-	Continuing	Continuing	Continuing
Threat Engineering Industry	C/CPAF	Boeing:VA	4.585	-		-		-		-	Continuing	Continuing	Continuing
Threat Engineering CSS	C/CPFF	CSC:VA	1.974	-		-		-		-	Continuing	Continuing	Continuing
Threat Engineering CSS 1	C/CPFF	Cobham:CA	1.385	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			24.194	-		-		-		-			

Remarks

N/A

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

Remarks

N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	251.660	133.890		88.315		-		88.315			

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 2011		▲																										
Adversary Data Package (ADP) - FY 2012					△																							
Adversary Data Package (ADP) - FY 2013								△																				
Adversary Data Package (ADP) - FY 2014										△																		
Adversary Data Package (ADP) - FY 2015														△														
Adversary Data Package (ADP) - FY 2016																			△									
Aegis Ashore Critical Design Review							▲																					
Aegis Ashore Preliminary Design Review																												
Aegis Ashore System Design Review																												
Aegis Ashore System Requirements Review																												
Aegis BMD 5.1 Critical Design Review (CDR)																												
Aegis BMD 5.1 Preliminary Design Review (PDR)																												
Aegis BMD 5.1 System Design Review (SDR) #1																												
Aegis BMD 5.1 System Design Review (SDR) #2																												
Aegis BMD 5.1 System Design Review (SDR) #3																												
Aegis BMD 5.1 System Requirements Review #1 (SRR#1)																												
Aegis BMD 5.1 System Requirements Review #2 (SRR#2)																												
Aegis BMD 5.1 System Requirements Review #3 (SRR#3)																												
Airborne Infrared Sensors Program - Delta System Concept Review (SCR)																												
BMD System Requirements Review (SRR) Part 1																												
BMD System Requirements Review (SRR) Part 2																												
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2012																												
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014																												
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016																												
Ballistic Missile Defense System Design Review - FY 2011																												
Ballistic Missile Defense System Design Review - FY 2012																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 Design Review - FY 2013											△																	
Ballistic Missile Defense System Design Review - FY 2014														△														
Ballistic Missile Defense System Design Review - FY 2015																			△									
Ballistic Missile Defense System Design Review - FY 2016																												
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2012								△																				
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014																												
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016																												
Ballistic Missile Defense System Specification (BMD SS) - FY 2011/12								△																				
Ballistic Missile Defense System Specification (BMD SS) - FY 2013																												
Ballistic Missile Defense System Specification (BMD SS) - FY 2015																												
Element Preliminary Design Reviews - FY 2011																												
Element Preliminary Design Reviews - FY 2012																												
Element Preliminary Design Reviews - FY 2013																												
Element Preliminary Design Reviews - FY 2014																												
Element Preliminary Design Reviews - FY 2015																												
Element Preliminary Design Reviews - FY 2016																												
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2011																												
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2012																												
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2013																												
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2014																												
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2015																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012-C2BMC							△																					
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012								△																				
Phased Adaptive Approach (PAA) System Concept Review (SCR) 2011	▲																											
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #1								△																				
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #2												△																
Phased Adaptive Approach Quarterly Status Review #1				▲																								
Phased Adaptive Approach Quarterly Status Review #2				▲																								
Phased Adaptive Approach Quarterly Status Review #3							▲																					
Phased Adaptive Approach Quarterly Status Review #4								△																				
Phased Adaptive Approach Quarterly Status Review #7												△																
Phased Adaptive Approach Quarterly Status Review #8																△												
Precision Tracking Space System First Article Critical Design Review																				☆								
Precision Tracking Space System First Article Preliminary Design Review												☆																
Provide Independent Assessments to MDA - FY 2011				▲																								
Provide Independent Assessments to MDA - FY 2012								△																				
Provide Independent Assessments to MDA - FY 2013												△																
Provide Independent Assessments to MDA - FY 2014																△												
Provide Independent Assessments to MDA - FY 2015																								△				

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Update to Ballistic Missile Defense System Specification (BMD SS) - FY 2013											△																	
Update to Ballistic Missile Defense System Specification (BMD SS) - FY 2015																			△									
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2011		▲																										
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2012							△																					
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2011			▲																									
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2012								△																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Adversary Data Package (ADP) - FY 2011	2	2011	2	2011
Adversary Data Package (ADP) - FY 2012	2	2012	2	2012
Adversary Data Package (ADP) - FY 2013	1	2013	1	2013
Adversary Data Package (ADP) - FY 2014	1	2014	1	2014
Adversary Data Package (ADP) - FY 2015	1	2015	1	2015
Adversary Data Package (ADP) - FY 2016	1	2016	1	2016
Aegis Ashore Critical Design Review	1	2012	1	2012
Aegis Ashore Preliminary Design Review	3	2011	3	2011
Aegis Ashore System Design Review	2	2011	2	2011
Aegis Ashore System Requirements Review	2	2011	2	2011
Aegis BMD 5.1 Critical Design Review (CDR)	4	2014	4	2014
Aegis BMD 5.1 Preliminary Design Review (PDR)	4	2013	4	2013
Aegis BMD 5.1 System Design Review (SDR) #1	2	2012	2	2012
Aegis BMD 5.1 System Design Review (SDR) #2	1	2013	1	2013
Aegis BMD 5.1 System Design Review (SDR) #3	3	2013	3	2013
Aegis BMD 5.1 System Requirements Review #1 (SRR#1)	3	2011	3	2011
Aegis BMD 5.1 System Requirements Review #2 (SRR#2)	1	2012	1	2012
Aegis BMD 5.1 System Requirements Review #3 (SRR#3)	4	2012	4	2012
Airborne Infrared Sensors Program - Delta System Concept Review (SCR)	1	2011	1	2011
BMD System Requirements Review (SRR) Part 1	3	2012	3	2012
BMD System Requirements Review (SRR) Part 2	4	2012	4	2012
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2012	1	2012	1	2012

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Events	Start		End	
	Quarter	Year	Quarter	Year
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014	1	2014	1	2014
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016	1	2016	1	2016
Ballistic Missile Defense System Design Review - FY 2011	2	2011	2	2011
Ballistic Missile Defense System Design Review - FY 2012	3	2012	3	2012
Ballistic Missile Defense System Design Review - FY 2013	3	2013	3	2013
Ballistic Missile Defense System Design Review - FY 2014	3	2014	3	2014
Ballistic Missile Defense System Design Review - FY 2015	3	2015	3	2015
Ballistic Missile Defense System Design Review - FY 2016	3	2016	3	2016
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2012	3	2012	3	2012
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014	3	2014	3	2014
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016	3	2016	3	2016
Ballistic Missile Defense System Specification (BMD SS) - FY 2011/12	2	2012	2	2012
Ballistic Missile Defense System Specification (BMD SS) - FY 2013	2	2013	2	2013
Ballistic Missile Defense System Specification (BMD SS) - FY 2015	2	2015	2	2015
Element Preliminary Design Reviews - FY 2011	2	2011	2	2011
Element Preliminary Design Reviews - FY 2012	2	2012	2	2012
Element Preliminary Design Reviews - FY 2013	2	2013	2	2013
Element Preliminary Design Reviews - FY 2014	2	2014	2	2014
Element Preliminary Design Reviews - FY 2015	2	2015	2	2015
Element Preliminary Design Reviews - FY 2016	2	2016	2	2016
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2011	3	2011	3	2011
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2012	2	2012	2	2012
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2013	2	2013	2	2013
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2014	2	2014	2	2014
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2015	2	2015	2	2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2016	2	2016	2	2016
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2012	4	2012	4	2012
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2013	4	2013	4	2013
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014	4	2014	4	2014
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015	4	2015	4	2015
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016	4	2016	4	2016
Enhanced Command, Control, Battle Management, and Communications (C2BMC) Delta System Concept Review (SCR)	2	2011	2	2011
Enhanced Command, Control, Battle Management, and Communications (C2BMC) Delta System Requirements Review (SRR)/Preliminary Design Review (PDR)	2	2011	2	2011
Integrated Master Assessment Plan (IMAP) / Update - FY 2011	2	2011	2	2011
Integrated Master Assessment Plan (IMAP) / Update - FY 2012	2	2012	2	2012
Integrated Master Assessment Plan (IMAP) / Update - FY 2013	2	2013	2	2013
Integrated Master Assessment Plan (IMAP) / Update - FY 2014	2	2014	2	2014
Integrated Master Assessment Plan (IMAP) / Update - FY 2015	2	2015	2	2015
Integrated Master Assessment Plan (IMAP) / Update - FY 2016	2	2016	2	2016
Master Integration Plan (MIP) - FY 2011	4	2014	4	2014
Master Integration Plan (MIP) - FY 2012	4	2012	4	2012
Master Integration Plan (MIP) - FY 2013	4	2013	4	2013
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2011-PTSS	2	2011	2	2011
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012-C2BMC	3	2012	3	2012
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012	4	2012	4	2012
Phased Adaptive Approach (PAA) System Concept Review (SCR) 2011	1	2011	1	2011
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #1	3	2012	3	2012

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Events	Start		End	
	Quarter	Year	Quarter	Year
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #2	4	2012	4	2012
Phased Adaptive Approach Quarterly Status Review #1	4	2011	4	2011
Phased Adaptive Approach Quarterly Status Review #2	4	2011	4	2011
Phased Adaptive Approach Quarterly Status Review #3	1	2012	1	2012
Phased Adaptive Approach Quarterly Status Review #4	2	2012	2	2012
Phased Adaptive Approach Quarterly Status Review #7	1	2013	1	2013
Phased Adaptive Approach Quarterly Status Review #8	2	2013	2	2013
Precision Tracking Space System First Article Critical Design Review	1	2015	1	2015
Precision Tracking Space System First Article Preliminary Design Review	1	2013	1	2013
Provide Independent Assessments to MDA - FY 2011	4	2011	4	2011
Provide Independent Assessments to MDA - FY 2012	4	2012	4	2012
Provide Independent Assessments to MDA - FY 2013	4	2013	4	2013
Provide Independent Assessments to MDA - FY 2014	4	2014	4	2014
Provide Independent Assessments to MDA - FY 2015	4	2015	4	2015
Provide Independent Assessments to MDA - FY 2016	4	2016	4	2016
System Engineering Plan (SEP) Update - FY 2011	3	2011	3	2011
System Engineering Plan (SEP) Update - FY 2012	2	2012	2	2012
System Engineering Plan (SEP) Update - FY 2013	2	2013	2	2013
System Engineering Plan (SEP) Update - FY 2014	2	2014	2	2014
System Engineering Plan (SEP) Update - FY 2015	2	2015	2	2015
System Engineering Plan (SEP) Update - FY 2016	2	2016	2	2016
System/Subsystem Requirements Review - FY 2011	2	2011	2	2011
System/Subsystem Requirements Review - FY 2013	1	2013	1	2013
System/Subsystem Requirements Review - FY 2015	1	2015	1	2015
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2012	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2013	4	2013	4	2013
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014	4	2014	4	2014
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2015	4	2015	4	2015
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016	4	2016	4	2016
Update Phased Adaptive Approach Capability Planning Specifications (CPS) - FY 2013	4	2013	4	2013
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2013	1	2013	1	2013
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2015	1	2015	1	2015
Update to Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2011	3	2011	3	2011
Update to Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2013	3	2013	3	2013
Update to Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2015	3	2015	3	2015
Update to Ballistic Missile Defense System Specification (BMD SS) - FY 2013	2	2013	2	2013
Update to Ballistic Missile Defense System Specification (BMD SS) - FY 2015	2	2015	2	2015
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2011	2	2011	2	2011
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2012	2	2012	2	2012
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2011	4	2011	4	2011
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2012	4	2012	4	2012

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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT23: <i>Enabling - Test</i>	-	-	32.386	-	32.386	28.277	52.276	44.979	39.393	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

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

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

During test integration, verification, and model validation, engineering studies and analyses enable the allocation of test requirements to individual test events, design of test architectures, definition of target requirements, and generation of appropriate scenarios for ground and flight tests, in order to collect the required model validation data. Along with the support of the Director of Operational Test and Evaluation (DOT&E), System Engineering and Integration 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. System Engineering and Integration participates in test failure review boards, identifies shortfalls in data collection, and reallocates objectives to future test events until all identified model validation data is collected. Suitability 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 Ballistic Missile Defense System. 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 identify solutions that will ultimately improve BMDS reliability.

BMDS Level Testing: In conjunction with the Director for Test, the Director for Engineering supplies test objectives that define the basic test 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 through definition and tracking of the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), as documented in the Integrated Master Test Plan (IMTP). The CECs and EMEs ensure that the design of the BMDS test includes data collection to show proper system operation; they also provide validation,

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verification, and assessment data for the digital models and simulations used to predict Ballistic Missile Defense System performance. These models and simulations, along with the rigorous test and verification process, will be used to demonstrate BMDS performance in areas where no live-fire-testing is performed and provide direct support to the fielding decisions and BMDS deployed operations.

System Pre- and Post-Flight Reconstruction: System Engineering and Integration (SE&I) supports System Pre-Flight predictions for system level flight tests using the test framework set up with the Ballistic Missile Defense System configuration for a particular flight test. This provides confidence in Flight Test execution by predicting BMDS performance and exercising element interfaces. This work also ensures the flight test will collect the required data (including CECs and EMEs) and the data management plan will support System Post-Flight Reconstruction (SPFR) objectives. System Post-Flight Reconstruction uses a hardware-in-the-loop (HWIL) and/or a Digital Modeling and Simulation Environment to replicate the day of flight for the Ballistic Missile Defense System 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 Critical Engagement Conditions and Empirical Measurement Events. System Post-Flight Reconstruction is used for validation (anchoring) of the BMDS models and simulations.

Modeling & Simulation (M&S) Integrated Master Test Plan (IMTP) Mission Description:

Testing: The distinct capabilities of the MDA's M&S systems and products are ingrained throughout the MDA Elements 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 works to validate 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 threat, phenomenology, lethality, communications, and environmental modeling. 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 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.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Title: Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: FY 2011 accomplishments are reported under MD24 (\$26.099 million).</p> <p>FY 2012 Plans:</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>	<p>18.136</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
FY 2012 planned accomplishments are reported under MD24 (\$22.265 million). FY 2013 Plans: -Update the Master Integration Plan (MIP) to incorporate changes in planned delivery of Ballistic Missile Defense System content -Provide engineering inputs for Integrated Master Test Plan updates using the Planning Allocation Matrix (PAM) tool to identify integration, test, assessment, and verification activities -Collect Ballistic Missile Defense System Suitability Data through the Joint Reliability and Maintainability Engineering Team (JRMET) Data Scoring Boards -Provide pre- and post-test support for the Failure Reporting, Analysis, and Corrective Action System, which investigates BMDS test failures and identifies solutions that enhance reliability -Define and execute required performance assessments to support incremental capability deliveries -Provide monthly updates for Ballistic Missile Defense System verification status -Conduct BMD System Critical Design Review to document requirements used for performance assessments of incremental deliveries.				
Title: Modeling & Simulation (M&S) Verification, Validation and Accreditation (VV&A) and Test Operations Description: See Description Below FY 2011 Accomplishments: FY 2011 accomplishments are reported under MD31 / MD09 (\$38.119 million). FY 2012 Plans: FY 2012 planned accomplishments are reported under MD31 (\$15.002 million). FY 2013 Plans: -Event Support Operations		Articles:	-	-
		0	0	14.250
				0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Collaborate with Elements, Test Community, System Engineering, and Operational Test Agencies (OTAs) to ensure Modeling and Simulation (M&S) for each event meet intended uses and objectives, and have proper Verification, Validation, and Accreditation (VV&A) documentation and evidence, to include benchmarking/anchoring pedigree</p> <p>-System Level Education, Validation and Accreditation (VV&A)</p> <p>-Planned/On-going: Develop integrated Verification, Validation and Accreditation (VV&A) event Plans and Reports for Focused Ground Tests, Integrated Ground Tests, Performance Assessments, Assured Response and Global Defender Exercises in accordance with events planned per the current approved Integrated Master Test Plan (IMTP)</p> <p>-Provide Annual Accreditation Assessment, Report and Briefing with Recommendations for critical M&S Improvements to align with end of year BMDS Operational Test Agency (OTA) Accreditation reporting and MDA President’s Budget (PB) investment strategy efforts.</p> <p>-Planned/On-going: Plan and specify system post-flight reconstructions events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level VV&A associated with Digital and Hardware-in-the-loop (HWIL) System Post Flight Reconstructions, in accordance with activities prioritized, funded and resourced per the current approved Integrated Master Test Plan (IMTP)</p> <p>-Planned/On-going: Work closely with Elements, Test Community, System Engineering, and Operational Test Agency (OTA) to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree</p> <p>-Planned/On-going: Conduct system-level verification and validation of threat trajectory and signature, of end-to-end environmental implementation (consistent and correct), of modeled communications and architecture (behave properly) and evaluate that M&S interoperability is adequately addressed</p> <p>-Planned/On-going: Update or develop M&S Directives, Policies, Standards and Methodology Guides to support advancements in VV&A process and methodology to maximize improvement to M&S Accreditation.</p> <p>-Planned/On-going: Conduct annual review of BMDS Element VV&A programs and provide recommendations for improvements in M&S capabilities and planned Verification and Validation (V&V) activities to accelerate and optimize M&S Accreditation</p> <p>-Planned/On-going: Lead BMDS VV&A working group (VVAWG) and Verification, Validation and Accreditation Control Board (VVICB) to improve VV&A operations and ultimately improve BMDS M&S performance and accreditation</p> <p>-Planned/On-going: Ensure that individual BMDS elements and components properly VV&A their own models</p> <p>-Planned/On-going: Develop and present M&S objectives, event requirements, Accreditation status and strategic VV&A plans as part of MDA BMDS Integrated Master Test Plan (IMTP) development.</p> <p>-Planned/On-going: Develop and/or update additional chapters/volumes of the Integrated Master VV&A Plan (IMVP) to align long-range VV&A planning with MDA long-range planned events, assessments and fielding decisions.</p>			
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Develop threat trajectories and integrated threat packages to support Modeling and Simulation (M&S) frameworks and execute MDA Integrated Master Test Plan (IMTP) events to include Performance Assessments (PAs), Ground Tests, Operational Tests, Flight Tests and Combatant Command (COCOM) Exercises -Complete integration of National Air and Space Intelligence Center (NASIC) missile model capability into Threat Modeling Simulation System (TMSS) to produce intelligence-credible threat products for IMTP events -Support accreditation for Kinetic Impact Debris Distribution (KIDD) as post-intercept debris modeling tool -Support accreditation for Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS) as engagement lethality modeling tool for Patriot PAC-3, THAAD, and GM -Plan and produce re-entry vehicle (RV) and kill vehicle (KV) model products using M&S lethality tools, KIDD and PEELS, for Flight Test, Ground Test, Performance Assessments/Technical Assessments (PA/TAs), wargames, and exercises -Event Integration/Support Operations -Product Level Verification, Validation & Accreditation (VV&A) -Conduct requirements management for product VV&A (e.g., OSC, OPTISIG, KIDD, PEELS, PEGEM) -Conduct Independent Verification & Validation (IV&V) on Core Lethality Models (PEELS, KIDD) product modifications -Develop missile model and integrated threat package Verification & Validation (V&V) reports to support Integrated Master Test Plan (IMTP) events 			
Accomplishments/Planned Programs Subtotals	-	-	32.386

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	929.072		929.072	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	93.937	4.548		4.548	9.806	10.825	10.109	10.454	0.000	1,138.747
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I Industry	C/CPAF	Boeing:AL	-	-		12.521	Oct 2012	-		12.521	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I CSS	C/CPFF	CSC:various	-	-		3.258	Oct 2012	-		3.258	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I FFRDC/ UARC 1	FFRDC	JHU APL:VA	-	-		1.632		-		1.632	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I FFRDC/ UARC 2	MIPR	MITRE:VA	-	-		0.362	Oct 2012	-		0.362	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I FFRDC/ UARC 3	MIPR	SNL:CA	-	-		0.363	Oct 2012	-		0.363	Continuing	Continuing	Continuing
Modeling & Simulation (M&S) Verification, Validation and	C/CPAF	Northrop Grumman:CO	-	-		7.784	Oct 2012	-		7.784	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Accreditation (VV&A) and Test Operations Performance Assessment VV&A													
Modeling & Simulation (M&S) Verification, Validation and Accreditation (VV&A) and Test Operations Ground Test VV&A	C/CPAF	Northrop Grumman:CO	-	-		3.040	Oct 2012	-		3.040	Continuing	Continuing	Continuing
Modeling & Simulation (M&S) Verification, Validation and Accreditation (VV&A) and Test Operations M&S Accreditation	C/CPAF	Northrop Grumman:CO	-	-		3.426	Oct 2012	-		3.426	Continuing	Continuing	Continuing
Subtotal			-	-		32.386		-		32.386			

Remarks
N/A

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

Remarks
N/A

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Remarks N/A														
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			-	-		32.386		-		32.386				

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTM-20 Aegis Flight Test																												
Master Integration Plan (MIP) - FY 2013												△																
Master Integration Plan (MIP) - FY 2014												△																
Master Integration Plan (MIP) - FY 2015																												
Master Integration Plan (MIP) - FY 2016																												
System Engineering Assessment Report (SEAR) - FY 2013												△																
System Engineering Assessment Report (SEAR) - FY 2014																												
System Engineering Assessment Report (SEAR) - FY 2015																												
System Engineering Assessment Report (SEAR) - FY 2016																												
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2013																												
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2014																												
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2015																												
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2016																												
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2013																												
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2014																												
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2015																												
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2016																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>

Schedule Details

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD28: <i>Intelligence & Security</i>	10.514	18.382	36.886	-	36.886	35.651	37.712	39.579	40.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2013, funding from Program Wide Support Projects is transferred to the MD28 Intelligence & Security Project in the amount of \$16.679M for Intelligence and Security salaries and the Research, Development and Security Program.

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 information assurance requirements for Continental United States (CONUS) and non-CONUS based BMDS assets. Define Information Assurance/Computer Network Defense (IA/CND and cyber security infrastructure intelligence requirements to focus Intelligence Community collection, analysis and production to target MDA/BMDS cyber vulnerabilities, and incorporate cyber security engineering requirements into the systems engineering process.

The Security and Intelligence Project captures four specific areas:

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

Collectively, these efforts provide critical information regarding threat ballistic missile system capabilities (via intelligence); protection of personnel, activities, and technology from espionage and terrorism through active and passive activities (via counterintelligence); and BMDS system vulnerabilities (via Cyber Security Engineering). Specifically, the Intelligence and Security program activities support the overarching MDA objectives of defending the homeland against a limited ballistic missile attack; defending U.S. forces, allies and partners against regional threats; and developing flexible capabilities that can be adapted as threats evolve.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
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<p>1) Intelligence: The MDA Intelligence Requirements Division serves as a clearing house for MDA`s requirements for the Intelligence Community collection, analysis and production. The MDA Intelligence Requirements Division serves as the quality control and dissemination agent of Intelligence Community products for all properly cleared Government and contractor personnel and provides feedback to the Intelligence Community on subsequent questions, issues and other requirements resulting from Intelligence Community reporting. The intelligence process begins when the Intelligence Community collects and analyzes data on foreign threat missiles. Resulting threats and threat changes are provided to the BMDS System Engineer, who uses the threats to develop and change the BMDS. This information reduces risk and improves system performance. It enables MDA Program Managers to achieve a sufficiently accurate understanding of the threat environment to respond to relevant capabilities of immediate importance, make informed decisions, and invest limited resources on countering the most significant aspects of potential adversary capabilities. Other aspects of the Intelligence Division are designed to gain access to, and leverage unique Intelligence Community developed, owned and operated capabilities for the benefit and advocacy of the Missile Defense Community. Numerous Intelligence Community capabilities are highly classified and require both access and expertise to exploit.</p> <p>2) Counterintelligence: Pursuant to Executive Order 12333, (US Intelligence Activities), DoD Directive O-5240.2 (DoD Counterintelligence), and other DoD Counterintelligence policy issuances, the MDA Counterintelligence Division is charged with undertaking activities as part of an integrated DoD and national effort, to detect, identify, assess, exploit, degrade and counter or neutralize foreign intelligence collection efforts, sabotage, espionage, sedition, subversion, terrorist and other intelligence activities directed against MDA personnel, information, materials, facilities, and activities or against U.S. national security. As a member of the DoD Counterintelligence Community, the Counterintelligence Division`s portfolio includes the following missions and functions:</p> <p>-Counterintelligence Investigative Inquiries: Pursuant to DoD Instruction 5240.21, the Counterintelligence Division conducts counterintelligence investigative inquiries into reported or suspected clandestine relationships between MDA personnel and agents of a foreign power and/or individuals associated with international terrorist organizations; failure to report contact with a foreign intelligence service and/or failure to comply with DoD reporting requirements pursuant to DoD Instruction 5240.6. Counterintelligence inquiries establish or refute a reasonable belief that a particular person was acting for or on behalf of, or an event was related to, a foreign power engaged in spying or committing espionage, sabotage, treason, sedition, subversion, assassinations, or international terrorist activities. When such allegations are substantiated, the Counterintelligence Division refers them to the appropriate Title 10, U.S. Code jurisdiction (Army, Navy or United States Air Force Counterintelligence Organization, Defense Criminal Investigative Services or Federal Bureau of Investigation) for further investigative action.</p> <p>-Counterintelligence Collection and Reporting: Pursuant to DoD Instruction S-5240.17, the Counterintelligence Division systematically collects counterintelligence information from U.S. and foreign partner intelligence, counterintelligence, security and law enforcement entities through routine liaison and other activities associated with multi-national Ballistic Missile Defense (BMD) conferences overseas, RDT&E activities and BMDS deployments worldwide. The Counterintelligence Division also conducts briefings and debriefings of MDA personnel who travel overseas and passes on any relevant information to the U.S. Intelligence Community via Intelligence Information Reports, as appropriate, to answer validated DoD Counterintelligence collection requirements.</p> <p>-Counterintelligence Analysis and Production: Pursuant to DoD Instruction 5240.18, the Counterintelligence Division conducts unclassified and classified web-based research and prepares tailored, timely and relevant analytical products that address threats from espionage, international terrorism, subversion, sabotage, assassination, other clandestine or covert activities, and any other similar activities targeting MDA that are reasonably believed to have a foreign nexus. This includes threats to MDA personnel, property, flight tests, RDT&E activities, and worldwide conferences in addition to intelligence collection threats to MDA critical program information, Ballistic Missile Defense System (BMDS) technologies, administrative and mission networks or infrastructure.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
<p>-Counterintelligence Functional Services: Pursuant to DoD Instruction 5240.16, the Counterintelligence Division conducts specialized defensive counterintelligence activities to identify and counter terrorism, espionage, sabotage and other related activities of foreign intelligence services in support of MDA flight tests, Special Access Programs, continental U.S. (CONUS)/Outside CONUS (OCONUS) BMD conferences, BMDS field deployments and initiatives and other worldwide initiatives. Specialized defensive counterintelligence activities include the conduct of Technical Surveillance Countermeasures surveys/inspections pursuant to DoD Instruction 5240.5, and computer forensics examinations in support of investigations resulting from reported insider threats and/or foreign computer intrusions.</p> <p>-Counterintelligence Awareness, Briefing and Reporting Program: Pursuant to DoD Instruction 5240.6, the Counterintelligence Division provides initial (MDA Newcomer's briefing) and periodic Counterintelligence Awareness briefings to DoD military, civilian and contractor personnel assigned to MDA. These briefings focus on the threats posed by foreign intelligence services, international terrorists, computer intruders and unauthorized disclosures, in addition to individual reporting responsibilities. The Counterintelligence Division also provides mandatory foreign travel threat briefings to all MDA outside the continental U.S. (OCONUS) travelers to familiarize them with potential terrorism, criminal, health, political and foreign intelligence and security service threats they may encounter. Follow-up debriefings are conducted to capture pertinent counterintelligence information that is shared with other MDA travelers and the U.S. Intelligence Community, as appropriate.</p> <p>-Counterintelligence in Cyberspace: Pursuant to DoD Instruction 5240.LL and other DoD policy guidance, the Counterintelligence Division conducts defensive cyber activities and computer forensics using specialized gear and software toolsets to detect, identify, assess, deter, neutralize or exploit the activities of individuals, organizations, international terrorists and foreign intelligence and security services attempting to extricate information from MDA administrative or mission networks or using the MDA cyberspace domain to conduct espionage, other intelligence activities, sabotage, and assassinations against MDA personnel, facilities, programs and/or activities.</p> <p>3) Cyber Security Engineering Division: This division assists the Ballistic Missile Defense System (BMDS) to manage and deploy Cyber Security engineering requirements and solutions to fulfill DoD and Warfighter mandates, while enhancing the robustness and resilience of the cyber infrastructure. Develop and coordinate near-term and long-term engineering changes to the BMDS that advances the confidentiality, integrity, and availability and counter cyber threats posed by our adversaries. To fulfill this role, the BMDS Cyber Security Engineering Division works in concert with Information Assurance Engineers, Intelligence and Counter Intelligence to obtain a comprehensive picture of the overall threat and cyber security engineering at all levels of the BMDS, then influence the design by 1) identifying and developing Core Standards and Requirements to implement Defense-in-Depth within planned development cycles (Builds); 2) providing oversight, coordination and management of key technical requirements development, and policy-mandated responsibilities; 3) providing contract acquisition support to BMDS Elements ensuring cyber security is addressed throughout the procurement process and; 4) interfacing with the Intelligence Community to define cyber security threats relevant to the BMDS. To fulfill stated mission requirements, the division interfaces with relevant Cyber Security Engineering experts to assess requirements, documentation and cyber security system design.</p> <p>4) Research, Development Acquisition (RDA) Security manages the MDA Information, Industrial, Operations Security, and Defense Critical Infrastructure Protection programs to protect acquisition, test, development, and fielding of BMDS capabilities. The Information Safeguards office conducts security reviews for all Congressional, General Accountability Office (GAO), budget, Freedom of Information Act (FOIA), Public Release actions; develops and coordinates Security Classification Guides (SCGs) and resolves questions regarding security classification; manages MDA Industrial Security program to develop Contract Security Classification Specifications (DD-254s) for all MDA contracts and to resolve Foreign Ownership, Control, and Influence (FOCI) issues; and conducts Information Security (INFOSEC) program reviews for all MDA offices; and conducts security inquiries as required. The Acquisition Security office supports program offices in assessing acquisition programs to identify critical program information (CPI), recommend security measures to protect CPI; and develop Program Protection Plans.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
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Systems Security provides planning support for BMDS deployments by coordinating site security infrastructure requirements for deploying BMDS assets with the Combatant Commanders (COCOMs) and Services and developing and coordinating site security designs to protect critical BMDS assets. The Declassification Program office manages the MDA Declassification Program in compliance with Executive Order 13526, requiring mandatory review of 25 year-old missile defense documents to ensure classified and sensitive but unclassified information is not inadvertently released into the public domain.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Cyber Security Engineering Program</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: FY 2011 Ballistic Missile Defense System (BMDS) Cyber Security Engineering Program:</p> <ul style="list-style-type: none"> -Fulfill Deputy Assistant Secretary of Defense (DASD) Cyber Identify and Information Assurance Strategy and DoD Instruction 8580.1 -Define Cyber Security Engineering requirements for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively and definitively -Continue to assess the Cyber Security Engineering architecture to address gaps/disconnects, to enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` Cyber Security Architectural Concepts to support technical assessments and design solutions and implementation recommendations. -Develop and document technical requirements and interfaces to execute an integrated Cyber Security Engineering Net-centric Architectural Concept. -Continue to enhance the Cyber Security Engineering posture of the BMDS by delivering expert, responsive, relevant Cyber Security Engineering products and services supporting the Program Managers to meet BMDS and Information Assurance/ Computer Network Defense (IA/CND) needs and requirements. -Continue to assist in the sustainment of an acceptable Cyber Security posture for the MDA Director, through various initiatives at each stage of the program`s lifecycle. <p>FY 2012 Plans: FY 2012 Ballistic Missile Defense System (BMDS) Cyber Security Engineering Planned Program:</p> <ul style="list-style-type: none"> -Continue to fulfill DASD Cyber identify and Information Assurance Strategy and DoD Instruction 8580. -Develop and coordinate near-term and long-term engineering changes to the BMDS that advances the confidentiality, integrity, and availability and counter cyber threats posed by our adversaries. -Continue to define Cyber Security Engineering requirements for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively, and definitively. 	<p>1.777</p> <p>0</p>	<p>2.798</p> <p>0</p>	<p>4.201</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Continue to assess the Cyber security architecture to address gaps/disconnects, to enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` Cyber Security Engineering Concepts to support technical assessments and Cyber Security design solutions and implementation recommendations.

-Develop and document technical requirements and interfaces to execute an Integrated Cyber Security Engineering Net-centric Architectural Concept.

-Continue to enhance the Cyber Security posture of the BMDS by delivering expert, responsive, Cyber Security Engineering products and services supporting the Program Managers to meet BMDS and Cyber Security Engineering needs and requirements.

-Continue to assist in the sustainment of an acceptable Cyber Engineering security posture for the MDA Director, through various initiatives at each stage of the program`s lifecycle.

FY 2013 Plans:
FY 2013 Ballistic Missile Defense System (BMDS) Cyber Security Engineering Planned Program:

-Continue to fulfill DoD Instruction 8500.2 and 8510.01 policy-mandated roles of the Information Assurance Manager and Information Assurance Officer for the overarching Ballistic Missile Defense System (BMDS).

-Continue to define Information Assurance/Computer Network Defense (IA/CND) requirements for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively and definitively.

-Continue to assess the IA/CND security architecture to address gaps/disconnects, to enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` IA/CND Architectural Concepts to support technical assessments and IA/CND design solutions and implementation recommendations.

-Develop and document technical requirements and interfaces to execute an Integrated IA/CND Net-centric Architectural Concept.

-Continue to enhance the information assurance posture of the BMDS by delivering expert, responsive, relevant IA/CND products and services supporting the Program Managers to meet BMDS and IA/CND needs and requirements.

-Continue to assist in the sustainment of an acceptable IA/CND security posture for the MDA Director, through various initiatives at each stage of the program`s lifecycle.

Title: Counterintelligence	2.884	4.503	6.203
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:
FY 2011 Counterintelligence Program:

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Served as the single point of contact with Federal, State and Local Law Enforcement and Counterintelligence Organizations. To this end, the Counterintelligence Division 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.</p> <p>-Counterintelligence Division deployed organic counterintelligence teams to conduct defensive counterintelligence activities in support of MDA fielding initiatives worldwide under the Phased Adaptive Approach and Foreign Military Sales Programs.</p> <p>-Counterintelligence Division procured and fielded updated secure video telecommunications systems for the Colorado Springs and Huntsville Regional Counterintelligence Offices in support of flight tests, conferences and overseas deployments.</p> <p>-Counterintelligence Division procured / fielded updated secure data communications systems for the Colorado Springs Regional Counterintelligence Office in support of flight tests, conferences and overseas deployments.</p> <p>-Supported all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and Ballistic Missile Defense System (BMDS) technologies, personnel, facilities and activities.</p> <p>-Counterintelligence Division kept MDA leadership and supported Program Elements informed of counterintelligence threats targeting its Research, Development and Acquisition programs, technologies and critical program information through aggressive an Analysis and Production Program.</p> <p>-Counterintelligence Division continued to educate the entire MDA workforce on the criminal, terrorist and foreign intelligence threats targeting MDA personnel, information, facilities and activities through an aggressive Counterintelligence Awareness Briefing Program that includes foreign travel threat briefings.</p> <p>FY 2012 Plans: FY 2012 Counterintelligence Planned Program:</p> <p>-The Counterintelligence Division will serve as the single point of contact with Federal, State and Local Law Enforcement and Counterintelligence Organizations. To this end, the Counterintelligence Division will foster collaborative partnerships targeting foreign intelligence collection activities directed against MDA personnel, facilities and activities to prevent the loss or compromise of critical program information or critical Ballistic Missile Defense System (BMDS) technologies.</p> <p>-The Counterintelligence Division will deploy organic counterintelligence teams to conduct defensive counterintelligence activities in support of BMDS fielding initiatives under the Phased Adaptive Approach (PAA) and Foreign Military Sales (FMS) Programs.</p> <p>-The Counterintelligence Division will procure and field updated secure voice and data communications systems in support of MDA flight tests, conferences and BMDS deployment initiatives under the Phased Adaptive Approach and Foreign Military Sales Program.</p> <p>-The Counterintelligence Division will support all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</p> <p>FY 2013 Plans:</p>				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>FY 2013 Counterintelligence Planned Program:</p> <p>-The Counterintelligence Division will continue to serve as the single point of contact with Federal, State and Local Law Enforcement and Counterintelligence Organizations. To this end, the Counterintelligence Division will continue to foster collaborative partnerships targeting foreign intelligence collection activities directed against MDA personnel, facilities and activities to prevent the loss or compromise of critical program information or critical Ballistic Missile Defense System (BMDS) technologies.</p> <p>-The Counterintelligence Division will deploy organic counterintelligence teams to conduct defensive counterintelligence activities in support of BMDS fielding initiatives under the Phased Adaptive Approach and Foreign Military Sales Programs.</p> <p>-The Counterintelligence Division will continue to procure and field updated secure voice and data communications systems in support of MDA flight tests, conferences and BMDS deployment initiatives under the Phased Adaptive Approach and Foreign Military Sales Program.</p> <p>-The Counterintelligence Division will continue to support all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</p>				
<p>Title: Intelligence</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: FY 2011 Intelligence Program:</p> <p>The Intelligence Requirements Office:</p> <p>-Acted as 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 had a focused, prioritized, and complete understanding of the vast requirements for foreign intelligence necessary to build a comprehensive Ballistic Missile Defense System (BMDS).</p> <p>-Managed intelligence collection requirements and engaged the Intelligence Community to ensure MDA requirements were documented, validated, collected, and understood. Intelligence tasks included planning intelligence collections support for missile defense tests and documenting requirements in Intelligence Community management systems, and maintaining and updating Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT) requirements on advances in foreign ballistic missile technology and for all MDA events.</p>		<p>Articles:</p> <p>5.853 0</p>	<p>11.081 0</p>	<p>13.507 0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Maintained ongoing, persistent, focused dialog with all members of the Intelligence Community that ensured MDA intelligence requirements were viewed in proper context, receive the proper priority level, and were explicitly understood by the Intelligence Community.</p> <p>-Provided all levels of builders of missile defense intelligence requirements with the most up to-date and accurate intelligence, which requires a detailed understanding of the BMDS developer's and senior leadership's particular requirements.</p> <p>-Provided an encyclopedic, all-source, and all encompassing knowledge base of the foreign ballistic missile threat including development, enhancement, and population of the Secret and Top Secret/Sensitive Compartmented Information Missile Threat Portals with Intelligence Community produced finished intelligence documents. These portals hosted the most up-to-date current intelligence to provide immediate situational awareness, technical intelligence data to be used by the BMDS Program Elements and System Engineers, and direct linkages to the Intelligence Community to support the MDA Warfighter Support Center.</p> <p>FY 2012 Plans: FY 2012 Intelligence Planned Program:</p> <p>The Intelligence Requirements Office will:</p> <p>-Continue to be the single intelligence requirements integration office within MDA and its designated intermediary with the Intelligence Community and maintain a consistent dialog with the Intelligence Community to ensure they have a focused, prioritized, and complete understanding of the vast requirements for foreign intelligence necessary to build a comprehensive BMDS.</p> <p>-Continue to manage the intelligence collection requirements and engage the Intelligence Community to ensure MDA requirements are documented, validated, collected, and understood. Intelligence tasks will include planning intelligence collections support for missile defense tests and documenting requirements in Intelligence Community management systems, and maintaining and updating Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT) requirements on advances in foreign ballistic missile technology and for all MDA events.</p> <p>-Continue to maintain an ongoing, persistent, focused dialog with all members of the Intelligence Community to ensure MDA intelligence requirements are viewed in proper context, receive the proper priority level, and are explicitly understood by the Intelligence Community.</p> <p>-Continue to provide all levels of builders of missile defense intelligence requirements with the most up to-date and accurate intelligence, which requires a detailed understanding of the BMDS developer's and senior leadership's particular requirements.</p> <p>-Continue to provide an encyclopedic, all-source, and all encompassing knowledge base of the foreign ballistic missile threat including development, enhancement, and population of the Secret and Top Secret/Sensitive Compartmented Information Missile Threat Portals with Intelligence Community produced finished intelligence documents. These portals have the most up-to-date current intelligence to provide immediate situational awareness, technical intelligence data to be used by the BMDS Program</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Elements and System Engineers, and direct linkages to the Intelligence Community to support the MDA Warfighter Support Center.</p> <p>-Fully characterize all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS. The MDA Director for Engineering uses this intelligence to build the Adversary Data Package used by all Program Elements and MDA Test as the ballistic missile threat document utilized to build and test the BMDS. The Director, MDA has offered and authorized this two year resource augmentation to National Air and Space Intelligence Center (NASIC) as bridge funding while USAF/NASIC realign resources within the MIP to accommodate these requirements.</p> <p>-Propose, develop, and execute a cyber study. The study will continue the demonstration of the effectiveness of using models and simulation to support all-source scientific and technical intelligence (S&TI) analysis of the impact of cyber threats to a U.S. tactical military network. The term model and simulation will be interchangeable and includes both hardware and software. The details of the aspects of the specific network to be addressed shall be provided by the Government.</p> <p>FY 2013 Plans: FY 2013 Intelligence Planned Program:</p> <p>The Intelligence Requirements Office will:</p> <p>-Continue to be the single intelligence requirements integration office within MDA and its designated intermediary with the Intelligence Community and maintain a consistent dialog with the Intelligence Community to ensure they have a focused, prioritized, and complete understanding of the vast requirements for foreign intelligence necessary to build a comprehensive BMDS.</p> <p>-Continue to manage the intelligence collection requirements and engage the Intelligence Community to ensure MDA requirements are documented, validated, collected, and understood. Intelligence tasks will include planning intelligence collections support for missile defense tests and documenting requirements in Intelligence Community management systems, and maintaining and updating Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT) requirements on advances in foreign ballistic missile technology and for all MDA events.</p> <p>-Continue to maintain an ongoing, persistent, focused dialog with all members of the Intelligence Community to ensure MDA intelligence requirements are viewed in proper context, receive the proper priority level, and are explicitly understood by the Intelligence Community.</p> <p>-Continue to provide all levels of builders of missile defense intelligence requirements with the most up to-date and accurate intelligence, which requires a detailed understanding of the BMDS developer's and senior leadership's particular requirements.</p> <p>-Continue to provide an encyclopedic, all-source, and all encompassing knowledge base of the foreign ballistic missile threat including development, enhancement, and population of the Secret and Top Secret/Sensitive Compartmented Information Missile</p>				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>Threat Portals with Intelligence Community produced finish intelligence documents. These portals have the most up-to-date current intelligence to provide immediate situational awareness, technical intelligence data to be used by the BMDS Program Elements and System Engineers, and direct linkages to the Intelligence Community to support the MDA Warfighter Support Center.</p> <p>-Fully characterize all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS. The MDA Director for Engineering uses this intelligence to build the Adversary Data Package used by all Program Elements and MDA Test as the ballistic missile threat document utilized to build and test the BMDS. The Director, MDA has offered and authorized this two year resource augmentation to National Air and Space Intelligence Center (NASIC) as bridge funding while USAF/NASIC realign resources within the MIP to accommodate these requirements.</p>			
<p>Title: Research, Development Acquisition (RDA) Security</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Research, Development Acquisition (RDA) Security was previously reported under MDA Program Wide Support. In January 2011, pursuant to an Agency reorganization, the former MDA Security and Program Protection Division was reorganized into three separate components. One of those components is the Research, Development and Acquisition (RDA) Security division, which is subordinate to the Director for Engineering.</p> <p>The RDA Security Information Safeguards branch performed security reviews of over 1,035 requests for public release, security classification determinations, Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR) during this period. RDA Security conducted Information Security staff assistance reviews and assessments of 81 MDA offices and 44 security incident inquiries. During the year, the Information Security team directly support the Agency's Base Realignment and Closure (BRAC) by managing a reduction of classified material across the Agency, coordinating the secure transport of classified information between and within the National Capitol Region and Huntsville, and inspecting all vacated spaces to ensure no classified or controlled unclassified information was inadvertently left in buildings that will be decommissioned. The Industrial Security program maintained security oversight for the Agency's classified contracts, including support to the MiDAESS Program to ensure that valid DD254 ``Contract Security Classification Specification`` documents were available to support contracting efforts and coordinating with the Department of Energy, Director National Intelligence, and National Security Agency for approval of a major defense contractor under Foreign Ownership, Control, and Interest (FOCI) to access proscribed information, which resulted in the MDA issuance of a National Interest Determination (NID), authorizing the contractor to perform classified work for the Agency.</p>	- 0	- 0	12.975 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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The RDA Security Systems Protection branch worked continuously with Combatant Commands (COCOMs) and the Services to ensure that MDA personnel, information, and equipment were protected during all phases of BMDS acquisition and deployment. Of particular note were continuing efforts to reconstitute full mission capability of the Integrated Electronic Security System (IESS) at the Fort Greely, Alaska (FGA) Missile Defense Complex; transition of European Capability (EC) concept for fixed-site missile defense interceptor and radar installations to a Phased Adaptive Approach (PAA) architecture (missile defense in Europe) that includes an AEGIS Ashore missile defense concept; and various security studies and planning efforts in support of the Pacific Tracker Test Asset, the Upgraded Early Warning Radar (UEWR), the Terminal High Altitude Area Defense (THAAD) Program, and Sea-Based X-Band Radar (SBX). RDA Security supported a United States Central Command (USCENTCOM) request for deployment of an Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) by providing security assistance on site surveys within the USCENTCOM area of operations, coordinating with the COCOM military security staff, providing legacy information on the AN/TPY-2 security, and coordinating DoD information on security requirements to comply with United States Strategic Command (USSTRATCOM) security standards. In support of the MDA's Foreign Military Sales (FMS), Research, Development Acquisition (RDA) Security provided program protection support to the THAAD Program Office to ensure information proposed for release under the FMS agreement with the United Arab Emirates was properly protected.

RDA Security implemented DoDI 5200.39, "Critical Program Information Within the Department of Defense," to protect MDA's critical program information (CPI) and to promote the horizontal protection of CPI across BMDS programs. During this period, the staff reconstituted program protection planning, coordinating an Agency Director policy memorandum, completing a Program Protection instruction that defines a framework for program protection planning and implementing DoD direction to manage the DoD-directed Acquisition Security Database (ASDB), which documents CPI across all Services and agencies within the DoD. RDA Security applied proven techniques and tools in support of the Precision Tracking Space System (PTSS) Program Manager and his senior staff in conducting an assessment of key program technologies, conducting in-depth analysis to identify for candidate critical program information (C-CPI).

Based on agency reorganizations, the Operations Security (OPSEC) team updated MDA OPSEC policy and procedures to support programs and personnel, as well as education programs to promote OPSEC within MDA. The OPSEC team initiated processes to develop the first-ever Master MDA Critical Information List.

RDA Security personnel provided dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado. The team worked closely with host service security counterparts to ensure 100% security protection coverage of the BMDS mission operations and test assets.

FY 2011	FY 2012	FY 2013

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

	FY 2011	FY 2012	FY 2013
<p>During FY 2011, the Test Support team worked closely with representatives from the Test Directorate, Service Operational Test Agencies, Operational Test and Evaluation, Warfighter Support, COCOMs, Intelligence and Counterintelligence to develop comprehensive security plans tailored to each test activity and exercise based on known threat information.</p> <p>The Declassification Program operations reviewed 1,707,027 pages of classified information 25 years or older, exceeding all requirements of Executive Order 13526, Classified National Security Information. The Declassification Program received a perfect score on the annual Information Security Oversight Office (ISOO) audit and was recognized for management ``best practices.`` The Agency`s Declassification Guide was selected by ISOO as the template for use by other Declassification Programs within the Executive Branch.</p> <p>FY 2012 Plans:</p> <p>The RDA Security Information Safeguards will continue to perform all reviews supporting Agency public release, security classification, as well as required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR). Additionally, RDA Security will perform Information Security staff assistance reviews and assessments of 87 MDA offices and will coordinate security incident reviews to identify and fix security deficiencies impacting Agency operations. Based on tasking from the Information Security Oversight Office (ISOO) and the Office of the Under Secretary of Defense for Intelligence, RDA Security will complete the review and update of all 29 Agency security classification guides to ensure compliance with Executive Order 13526. The Industrial Security program will continue to provide security oversight for the Agency`s classified contracts, drafting and coordinating DD254 ``Contract Security Classification Specification`` documents to support contracting efforts.</p> <p>The RDA Security Systems Protection branch will continue to provide security support to Phased Adaptive Approach (PAA) and Agency planning for the deployment of an In-Flight Interceptor Communications system to Ft. Drum, NY. During this period, the security team will work to transition responsibility for Sea-Based X-Band Radar (SBX) security from MDA to the Navy.</p> <p>RDA Security will focus program protection planning on the assessment of candidate critical program information (CPI) for the Sensors and Command and Control, Battle Management, and Communications (C2BMC) programs and reassessments of CPI for the Ground-based Midcourse Defense, THAAD and Space Tracking and Surveillance Systems programs. During this period, the Acquisition Security team will work closely with the Quality, Safety and Mission Assurance Directorate and Counterintelligence on Supply Chain Risk Management (SCRM) issues.</p> <p>RDA Security personnel will continue to provide dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado and with the Test Directorate to ensure 100% security protection coverage of the BMDS mission operations and test assets.</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>The Declassification Program operations production target for Calendar Year 2012 declassification reviews is in excess 3.8 million page equivalents of missile defense historical records.</p> <p>FY 2013 Plans: The RDA Security Information Safeguards will continue to perform all reviews supporting Agency public release, security classification, as well as required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR). Additionally, RDA Security will perform Information Security staff assistance reviews and assessments of 90 MDA programs and will coordinate required security incident reviews to identify and fix security deficiencies impacting Agency operations. The Industrial Security program will continue to provide security oversight for the Agency's classified contracts, drafting and coordinating DD254 ``Contract Security Classification Specification`` documents to support contracting efforts.</p> <p>The RDA Security Systems Protection branch will continue to provide security support to Phased Adaptive Approach (PAA), as well as other directed BMDS systems deployments.</p> <p>RDA Security will focus program protection planning on the continuing assessment of candidate critical program information (CPI) for Advanced Technology programs, notably including Standard Missile-3 (SM-3) Block IIB and High Power Directed Energy, as well as Small Business Innovative Research (SBIRS) projects to identify technologies that will transition into MDA programs. Work will also continue with Counterintelligence on Supply Chain Risk Management (SCRM) issues that could degrade the performance of BMDS systems.</p> <p>RDA Security personnel will continue to provide dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado and with the Test Directorate to ensure 100% security protection coverage of the BMDS mission operations and test assets. During this reporting period, funding for the maintenance and update of the Argus electronic security system for the Missile Defense Integrated Operations Center will be transferred from Program Wide Support into the Intelligence & Security budget.</p> <p>The Declassification Program requirements will continue to expand in FY 2013, as the Agency conducts declassification reviews of historical documents 25 years old and older in accordance with Executive Order 13526, Classified National Security Information. The MDA production target is projected to be in excess of 5.7 million page equivalent historical records. To support this increasing requirement, MDA will fund a project for high volume scanning of volumes of legacy hard copy documents into digital format that can then be processed, using intelligent software, to assist in identifying missile defense equities. The application of scanning and automated analytic tools will permit the Agency to meet annual declassification requirements.</p>				
Accomplishments/Planned Programs Subtotals		10.514	18.382	36.886

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

N/A

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 departments, 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 2013 Missile Defense Agency **DATE:** February 2012

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

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cyber Security Engineering Program Cyber Threat	SS/FFP	Booz Allen Hamilton:McLean, VA	7.116	2.798		-		-		-	0.000	9.914	0.000
Cyber Security Engineering Program Cyber Threat 1	SS/FFP	Mantech:Falls Church, VA	-	-		4.201	Jul 2013	-		4.201	Continuing	Continuing	Continuing
Counterintelligence CI Analysis and Support	C/CPFF	QinetiQ Inc:Fairfax, VA	16.905	4.503		-		-		-	0.000	21.408	0.000
Counterintelligence CI Analysis and Support 1	MIPR	Various:Various	0.600	-		-		-		-	0.000	0.600	0.000
Counterintelligence CI Analysis and Support 2	C/CPFF	Booz Allen Hamilton:McLean, VA	-	-		6.203	Apr 2013	-		6.203	Continuing	Continuing	Continuing
Intelligence Analysis and Support	C/FFP	Lockheed Martin:Gaithersburg, VA	20.923	4.994		7.599	May 2013	-		7.599	Continuing	Continuing	Continuing
Intelligence Intelligence Applications	MIPR	SMDC:Huntsville, AL	4.315	1.600		3.259	Oct 2012	-		3.259	Continuing	Continuing	Continuing
Intelligence Intelligence Collections	MIPR	NASIC:Wright-Patterson AFB, OH	-	1.300		2.649	Oct 2012	-		2.649	Continuing	Continuing	Continuing
Intelligence Intelligence Watch	SS/CPAF	MDIOC-Northrop Grumman:Colorado Springs CO	11.186	2.487		-		-		-	Continuing	Continuing	Continuing
Research, Development Acquisition (RDA) Security RDA Analysis & Support	MIPR	Mantech:Falls Church, VA	-	-		5.998	Oct 2012	-		5.998	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Research, Development Acquisition (RDA) Security RDA Support	MIPR	Booz-Allen Hamilton:McLean, VA	-	-		6.977	Oct 2012	-		6.977	Continuing	Continuing	Continuing
Subtotal			61.045	17.682		36.886		-		36.886			

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

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

Remarks
N/A

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Intelligence Intelligence Project Management MD28	SS/FFP	Various:Various	0.449	0.700		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.449	0.700		-		-		-			

Remarks
N/A

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			61.494	18.382		36.886		-		36.886			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks NA								
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD29: <i>Producibility & Manufacturing Technology</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD29: <i>Producibility & Manufacturing Technology</i>	30.565	-	-	-	-	-	-	-	-	0.000	30.565
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012, the funding in MD29 transfers to the Standard Missile-3 Block IIB, Program Element 0603902C, MD70.

A. Mission Description and Budget Item Justification

The Manufacturing and Producibility/Enabling Technology effort focuses on technology development for future generation interceptors. This project focuses on Standard Missile-3 Block IIB technology development in propulsion, seeker, divert and attitude control system, light weight structures and battery technology development.

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

	FY 2011	FY 2012	FY 2013
Title: High Performance Interceptor Technology Development	30.565	-	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: FY 2011 accomplishments for the High Performance Interceptor Technology Development effort are captured in the Standard Missile-3 Block IIB, Program Element 0603902C, MD70.			
FY 2012 Plans: In FY 2012, the funding in MD29 transfers to the Standard Missile-3 Block IIB, Program Element 0603902C, MD70.			
FY 2013 Plans: NA			
Accomplishments/Planned Programs Subtotals	30.565	-	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD29: <i>Producibility & Manufacturing Technology</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>			PROJECT MD29: <i>Producibility & Manufacturing Technology</i>					
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		-		-	0.000	0.000	0.000

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD29: <i>Producibility & Manufacturing 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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Controllable Solid Divert Attitude Control																												
System Static Sub-system Test			▲																									
H PLUS Static Hot Fire Test			▲																									
Low Cost Liquid Divert Attitude Control System							▲																					
Static Subsystem Test 4QFY11																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD29: <i>Producibility & Manufacturing Technology</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Controllable Solid Divert Attitude Control System Static Sub-system Test	3	2011	3	2011
H PLUS Static Hot Fire Test	3	2011	3	2011
Low Cost Liquid Divert Attitude Control System Static Subsystem Test 4QFY11	1	2012	1	2012

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD30: <i>BMD Information Management Systems</i>	105.904	116.508	107.744	-	107.744	92.425	100.250	107.469	109.657	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012 MD30 reported five (5) mission critical information technology (IT) functions to include: 1) General IT Services; 2) Knowledge and Information Management; 3) Unified Communications; 4) Cyber Security and Information Assurance and 5) Information Technology Sustainment Engineering.

The Ballistic Missile Defense Information Management Systems Project MD30 has been realigned for FY 2013 to seven IT service strategies that support the Missile Defense Agency to include: 1) End User Support; 2) Unified Communications; 3) Information Assurance/Computer Network Defense; 4) Business Automation Services; 5) Portal and Data Services; 6) Network and Infrastructure Services, and 7) IT Planning and Solutions.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense (BMD) Information Management Systems Project funds the Information Technology (IT), Information Assurance (IA) and telecommunications infrastructure of the Agency. The information management, cyber security, information assurance and telecommunications infrastructure is critical to the day-to-day functions of the Missile Defense Agency (MDA) Director, MDA senior leaders and all 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. The MDA information technology, cyber security, information assurance and telecommunication 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 information technology, cyber security, information assurance and telecommunications infrastructure consists of MDA secure information technology 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 conferencing 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 including Alabama, Alaska, California, Colorado, Hawaii, New Mexico, Virginia, Europe, Israel, and Japan. This project funds information management/information technology operations for multiple systems in MDA facilities.

To support the Director's intent to significantly improve all layers of our BMDS, this project funds several Information Technology (IT) mission critical functions. These functions provide for the efficient operation and safeguarding of Agency information in compliance with Department of Defense (DoD) policies and in keeping with the

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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President's declaration that "cyber threat is one of the most serious economic and national security challenges we face as a nation". The mission critical functions of this project include:

- Provide critical day-to-day IT support to the Agency mission at all locations
- Information Technology enterprise architecture that is compliant with DoD and Federally mandated standards for the business and mission support activities of the MDA
- Interaction with the U.S. Cyber Command for instructions and regulatory guidance and reporting requirements
- Provide DoD approved solutions for information sharing, electronic records management, financial management, and efficient and secure business and mission support activities throughout MDA
- Knowledge center integration and universal access for information sharing capabilities
- Consolidated information technology infrastructure in support of information technology line of business goals/objectives
- Information assurance controls and computer network defense of MDA networks infrastructure for disaster recovery and continuity of operations capabilities
- Information Assurance certification and accreditation processes that support the Ballistic Missile Defense System (BMDS), test assets, and administrative support networks
- Cyber Security implementation of information technology policies, guidance, planning, oversight, and monitoring to ensure continued compliance with DoD mandated initiatives, statutes, regulations, directives, and policies

The BMD Information Management Systems Project MD30 for FY 2011 and FY 2012 consists of the five mission critical Information Technology (IT) functions and the associated FY 2011 Accomplishments and FY 2012 Plans.

- General Information Technology (IT) Services (FY 2011 and FY 2012)

The General IT Services mission critical function consists of IT support services required to operate and maintain the classified and unclassified IT infrastructure in the National Capital Region including the MDA Headquarters Command Center at Fort Belvoir, Virginia, Aegis Program Office at Dahlgren, Virginia; several MDA locations in Huntsville, Alabama region; the Colorado Springs, Colorado region; Edwards and Los Angeles Air Force Bases, California; Kirtland Air Force Base, New Mexico; MDA's enclave at Fort Greely and Elmendorf AFB, Alaska. This includes IT operations and maintenance, help desk services and hardware maintenance and software licensing in support of BMDS mission, research and test efforts as well as MDA business processes. Funding also supports coordination with the MDA Enterprise Network Operations Security Center (ENOSC) to implement Information Assurance Vulnerability Assessments (IAVAs) issued by the U.S. Cyber Command. This mission critical function also funds planning, programming, budget and execution support and Federal and DoD IT compliance reporting. The funding supports operations and maintenance of new facilities in Huntsville, Alabama; and Fort Belvoir and Dahlgren, Virginia. This function provides the infrastructure necessary for planning and coordination of the Director's Research, Development, Test & Evaluation (RDT&E), operation and maintenance, and upgrade initiatives for the Ballistic Missile Defense System (BMDS).

- Knowledge and Information Management (FY 2011 and FY 2012)

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD30: <i>BMD Information Management Systems</i>

In accordance with the Clinger Cohen Act and DoD directives, this mission critical function provides for the licensing and sustainment of DoD approved enterprise information applications. This function also provides management and storage of both the unclassified and classified MDA data to share information and knowledge throughout the Missile Defense community. Examples of DoD mandated and mission essential applications include Ballistic Missile Defense (BMD) Asset Management System, BMDS Integrated Master Schedule, Electronic Records Management System, Electronic Tasking (E-Tasker), Integrated Acquisition Environment, data management tool, financial management tools, personnel tracking system, MDA Identify and Management Infrastructure application, Computer-Aided Facilities Management, the MDA Employee Development Center, the Program Resource Internet Database Environment (PRIDE), and the MDA Standard Procurement System (SPS). This function supports the operations and maintenance of the Visual Information Production Centers, state-of-the-art, high capacity graphic and video production services for senior leadership and agency employees. This function provides the infrastructure necessary for planning and coordination of the Director’s RDT&E, operations and maintenance, and upgrade initiatives for the Ballistic Missile Defense System (BMDS).

-Unified Communications (FY 2011 and FY 2012)

The Unified Communications mission critical function 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, and maintenance and technical support services. These services are provided at MDA locations including the National Capital Region; Huntsville, Alabama; Colorado Springs, Colorado and interceptor sites at Fort Greely and Elmendorf Air Force Base, Alaska; Kirtland Air Force Base, New Mexico and Vandenberg Air Force Base, California. This includes classified and unclassified voice and data circuits, video teleconferencing and sustainment of Video Over Internet Protocol (VoIP) capability to enhance resolution and control costs. Circuits and associated services are provided by the Defense Information Systems Agency (DISA) as well as the Defense Research and Engineering Network (DREN). These circuits provide access to over 80 government and industry partner locations to enable information sharing of BMD-related data throughout the global MDA Enterprise. Also included are planning efforts to ensure that the policies and budget are in place to support BMDS mission and to comply with statutory and DoD policies including: Clinger-Cohen Act, the Federal Information Security Management Act (FISMA), and Office of Management and Budget (OMB) Information Technology (IT) budget reporting policies. This function provides the infrastructure necessary for planning and coordination of the Director’s Research, Development, Test & Evaluation (RDT&E), operations and maintenance, and upgrade initiatives for the BMDS.

-Cyber Security and Information Assurance (IA) (FY 2011 and FY 2012)

The Cyber Security and Information Assurance mission critical function supports the Federal Information Security Management Act (FISMA) and is a key priority of the MDA Director. This vital program of the BMDS and MDA Enterprise consists of cyber security, information assurance, computer network defense, network situational awareness, and certification and accreditation activities to comply with the Global Information Grid Information Assurance Strategic Plan and Goals, DoD information assurance directives, instructions and guidelines. Additionally, the cyber security and information assurance program integrates human capital management initiatives to sustain and improve the continuity of workforce operations by providing information assurance workforce training and certification. The information assurance program provides system security engineering, development, and testing to ensure that command, control, communications, and computing systems are protected against malicious or accidental attacks and supports the transfer of missile defense capabilities between MDA and the Services. The MDA cyber security and information assurance program provides the network security operations center and supporting processes to protect and defend MDA knowledge stores and

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD30: <i>BMD Information Management Systems</i>

information systems against cyber warfare. The MDA Enterprise Network Operations Security Center manages network situational awareness and status reporting. The MDA Computer Emergency Response Team (CERT) coordinates with the U.S. Cyber Command to identify and implement network vulnerability updates. This ensures the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. This function ensures the Information Technology (IT) support structure is sustained at an appropriate level to meet the Director's operational availability across multiple environments and locations.

-Information Technology (IT) Sustainment Engineering (FY 2011 and FY 2012)

This mission critical function provides project planning, sustainment engineering efforts, and Information Technology (IT) equipment and consumables for MDA general IT services and business systems to ensure compliance with Federal and DoD enterprise standards. Engineering efforts are essential to ensure the continuity of IT services necessary for the design, development, modeling, and testing of the Ballistic Missile Defense System (BMDS). Information Technology consumables consist of critical equipment sparing and test equipment necessary to sustain the general IT services to facilitate critical repairs within a 24 hour period. IT consumables also consist of items that require periodic replacement such as toner, keyboards, monitors, cabling, etc. This function provides the infrastructure necessary for planning and coordination of the Director's RDT&E, operations and maintenance, and upgrade initiatives for the BMDS.

The BMD Information Management Systems Project MD30 for FY 2013 consists of seven (IT) service strategies and the associated FY 2013 Base Plans.

-End User Support (FY 2013)

The End User Support service strategy includes IT operations and maintenance, help desk services, hardware maintenance and software licensing in support of BMDS mission, research and test efforts as well as MDA business processes. These services are provided at MDA locations including Huntsville, Alabama; Fort Greely and Elmendorf Air Force Base, Alaska; Vandenberg Air Force Base, California; Colorado Springs, Colorado; Kirtland Air Force Base, New Mexico; and Fort Belvoir and Dahlgren, Virginia. Information Technology consumables consist of critical equipment sparing and test equipment necessary to facilitate critical repairs within a 24 hour period that ensures compliance with Federal and DoD enterprise standards. IT consumables also consist of items that require periodic replacement such as toner, keyboards, monitors, cabling, etc. End User Support services also includes the sustainment of desktops, laptops, thin clients, and associated hardware, office productivity software licensing, email services, printing and copy services, file services, directory services, authentication services, helpdesk and tracking services, client support administration, employee moves, mission/test/engineer unique software applications and licenses, offsite contractor end user support, offsite events, conferences, summits, and mission/test events.

-Unified Communications (FY 2013)

The Unified Communications 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. These services are provided at MDA locations including Huntsville, Alabama; Fort Greely, Alaska; Elmendorf Air Force Base, Alaska; Vandenberg Air Force Base, California; Colorado Springs, Colorado; Kirtland Air Force Base, New Mexico; Dahlgren, Virginia; and Fort Belvoir, Virginia. This includes classified and unclassified voice and data circuits, video teleconferencing and sustainment of

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0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD30: <i>BMD Information Management Systems</i>

Voice/Video Over Internet Protocol (VoIP) capability to enhance resolution and control costs. Circuits and associated services are provided by the Defense Information Systems Agency (DISA) as well as the Defense Research and Engineering Network (DREN). These circuits provide access to over 80 government and industry partner locations to enable information sharing of BMD-related data throughout the global MDA Enterprise. Unified Communications 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.

-Information Assurance/Computer Network Defense (IA/CND) (FY 2013)

This Information Assurance/Computer Network Defense (IA/CND) service strategy provides protection of classified and unclassified infrastructure necessary for planning and coordination of the Director’s RDT&E, operations and maintenance, and upgrade initiatives for the BMDS. This service strategy provides compliance with Federal Information Security Management Act (FISMA) and includes implementation of the DoD Information Assurance Certification and Accreditation Process (DIACAP) to manage risk, conduct security assessments, and monitor compliance with applicable security controls. This vital program of the BMDS and MDA Enterprise consists of cyber security, information assurance, computer network defense, network situational awareness, and certification and accreditation activities to comply with the Global Information Grid Information Assurance Strategic Plan and Goals, DoD information assurance directives, instructions and guidelines. This strategy also supports coordination with the MDA Enterprise Network Operations Security Center (ENOSC) to implement Information Assurance Vulnerability Assessments (IAVAs) issued by the U.S. Cyber Command. Additionally, the IA/CND program integrates human capital management initiatives to sustain and improve the continuity of workforce operations by providing information assurance workforce training and certification in accordance with DoD Manual 8570.1. The information assurance program provides system security engineering, development, and testing to ensure that command, control, communications, and computing systems are protected against malicious or accidental attacks and supports the transfer of missile defense capabilities between MDA and the Services. The MDA information assurance program provides the network security operations center and supporting processes to protect and defend MDA knowledge stores and information systems against cyber warfare. The MDA ENOSC manages network situational awareness and status reporting. The MDA Computer Emergency Response Team (CERT) coordinates with the U.S. Cyber Command to identify and implement network vulnerability updates. This ensures the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Information Assurance/Computer Network Defense (IA/CND) includes the sustainment of MDA CERT network oversight and coordination, MDA CERT hardware and software, general services IA monitoring and analysis, Information Assurance Vulnerability Assessment (IAVA) and Communication Tasking Order (CTO) remediation and patching, computer forensics and sanitizing, data-at-rest encryption, Incident Response system and Information Assurance Vulnerability Assessment (IAVA) compliance reporting, general service network certification testing and accreditation support, annual workforce training and reporting, BMDS/Test certification testing and accreditation support, BMDS/Test protection, detection, reaction and recovery, BMDS/Test monitoring and Analysis, classified message spills recovery, and Cross Domain Solutions.

-Business Automation Services (FY 2013)

In accordance with the Clinger Cohen Act and DoD directives, the Business Automation Services strategy provides for the licensing and sustainment of DoD approved enterprise information applications and business applications. Examples of DoD mandated and mission essential applications include Ballistic Missile Defense (BMD) Asset Management System, BMDS Integrated Master Schedule, Electronic Records Management System, Electronic Tasking (E-Tasker), Integrated Acquisition

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<p>Environment, data management tool, financial management tools, personnel tracking system, MDA Identify and Management Infrastructure application, Computer-Aided Facilities Management, the MDA Employee Development Center, the Program Resource Internet Database Environment (PRIDE), and the MDA Standard Procurement System (SPS), HR database DCPDS dashboard reporting upgrade, learning management system, Staff Action Control & Coordination Portal (SACCP) and e-tasker suspense and action tracking system hardware and software, server administration hosting licensing and management, integrated access and diamond II badge system, DoD Eligibility Enrollment Reporting System (DEERS), Real-time Automated Personnel Identification System (RAPIDS) stations and Common Access Card (CAC) card stock)</p> <p>-Portal and Data Services (FY 2013)</p> <p>The Portal and Data Services strategy provides operations and maintenance of the Unclassified and Classified MDA Knowledge Online and storage of both the unclassified and classified MDA data to share information and knowledge throughout the Missile Defense community. This function is also responsible for executive dashboards, records management implementation and solutions, privacy and civil liberties compliance and reporting. Portal and Data Services includes classified and unclassified MDA Portal applications and SharePoint licenses, Portal infrastructure, Electronic Record Management System, MDA privacy and civil liberties compliance and reporting, publications, periodicals, and digitization services, data storage, data mining, and data management services. The MDA Portal provides the conduit to MDA business applications and is a knowledge sharing tool used throughout the BMDS community.</p> <p>-Network and Infrastructure Services (FY 2013)</p> <p>Network and Infrastructure Services enables user-friendly operations to client computers by providing for the operation and maintenance of the classified and unclassified IT network and shared resources in the MDA Enterprise. These services are provided at MDA locations including Huntsville, Alabama; Fort Greely and Elmendorf Air Force Base, Alaska; Vandenberg Air Force Base, California; Colorado Springs, Colorado; Kirtland Air Force Base, New Mexico; and Fort Belvoir and Dahlgren, Virginia. Network and Infrastructure Services provide operations and maintenance of data centers in Huntsville, Alabama and Colorado Springs, Colorado to include classified and unclassified servers, storage, switches, routers, and communication closets. Network and Infrastructure Services includes sustainment of Enterprise network operations and performance monitoring (hardware appliances), boundary management (routers, switches), internet access management and web filtering, global address and active directory management, communications distribution maintenance, communications security (COMSEC) operations and equipment, computing and data center management, Disaster Recovery and Continuity of Operations (DR/COOP) rehearsals, network hardware end-of-life replacement, cross domain solutions, circuits delivery services, agency-wide Defense Red Switch Network (DRSN), end user device support, and BMDS deployable COMSEC support.</p> <p>-Information Technology (IT) Planning and Solutions (FY 2013)</p> <p>The Information Technology (IT) Planning and Solutions service strategy provides IT project planning, IT life-cycle asset management, enterprise architecture planning and documentation, architecture change and configuration management licensing, Office of Management and Budget (OMB) and DoD IT compliance tracking and reporting, customer requirements and project management. This function also supports the MDA Command Group IT project planning and documentation such as Executive digital dashboard, Human Resource Tasking System, and Electronic Tasker to Staff Act Control & Coordination Portal (SACCP) Integration. Also included</p>		

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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are planning efforts to ensure that the policies and budget are in place to support BMDS mission and to comply with Federal Laws and DoD policies, directives, regulations, including: Clinger-Cohen Act, the Federal Information Security Management Act, and OMB IT budget reporting policies.

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

	FY 2011	FY 2012	FY 2013
<p>Title: End User Support (FY 2013)</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: See ``General Information Technology (IT) Services (FY 2011 - FY 2012)``</p> <p>FY 2012 Plans: See ``General Information Technology (IT) Services (FY 2011 - FY 2012)``</p> <p>FY 2013 Plans: -Sustain End User core service support 18 hours a day, 6 days a week for administrative and business information systems for approximately 8,000 MDA unclassified users and approximately 3,500 classified users -Monitor networks for user compliance and DoD policies, and report incidents -Maintain Printing and Copy Services (386 multi-functional device printers and 12 print servers) -Sustain email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks) -Sustain file services (8 file servers and 4 storage area networks) -Maintain Directory Services (24 Active Directory and domain controller servers) -Maintain Authentication services (Public Key Infrastructure/Common Area Card) -Maintain current hardware and software licenses for IT operational systems -Maintain an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter - Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys) -Fund MDA Chief Information Office (CIO) civilian salaries</p>	-	-	32.958
	0	0	0
<p>Title: Unified Communications (FY 2013)</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p>	-	-	16.573
	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
See ``Unified Communications (FY 2011 - FY 2012)`` FY 2012 Plans: See ``Unified Communications (FY 2011 - FY 2012)`` FY 2013 Plans: -Fund recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices) -Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan -Operate, monitor, and sustain recurring classified and unclassified wireless services -Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment -Provide and implement engineering solutions for all unified communication services -Sustain unclassified desktop instant messaging and collaboration capabilities to MDA users -Fund Chief Information Office (CIO) civilian salaries				
Title: Information Assurance/Computer Network Defense (FY 2013)		-	-	11.314
		Articles: 0	0	0
Description: See Description Below FY 2011 Accomplishments: See ``Cyber Security and Information Assurance (FY 2011 - FY 2012)`` FY 2012 Plans: See ``Cyber Security and Information Assurance (FY 2011 - FY 2012)`` FY 2013 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				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies -Revise and updated Information Assurance certification and accreditation packages for system level Ballistic Missile Defense Systems reported to DoD and Office of Management and Budget -Fund recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems -Manage the Information Assurance Workforce Improvement Program to certify Information Assurance professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and DoD Manual 8570.1, achieving the DoD certification goal -Complete DoD mandated annual Information Assurance user training for the MDA workforce -Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs -Fund MDA Chief Information Office (CIO) civilian salaries 						
<p>Title: Business Automation Services (FY 2013)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: See ``Knowledge and Information Management (FY 2011 - FY 2012)``</p> <p>FY 2012 Plans: See ``Knowledge and Information Management (FY 2011 - FY 2012)``</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Sustain an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment -Sustain portal-based Learning Management System -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 -Provide server administration hosting licensing and management -Maintain Integrated Access Control System and Diamond II badge system -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 -Fund MDA Chief Information Office (CIO) civilian salaries 				Articles:	-	-
				0	0	7.072
Title: Portal and Data Services (FY 2013)				-	-	9.781

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<i>Articles:</i>		0	0	0
Description: See Description Below				
FY 2011 Accomplishments: See ``Knowledge and Information Management (FY 2011 - FY 2012)``				
FY 2012 Plans: See ``Knowledge and Information Management (FY 2011 - FY 2012)``				
FY 2013 Plans: -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 -Maintain a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting -Maintain compliance with Section 508of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities -Sustain the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool -Manage a software assessment program and conducted reviews of proposed software applications for DoD compliance -Sustain a DoD mandated Electronics Records Management system -Provide MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics -Fund MDA Chief Information Office (CIO) civilian salaries				
Title: Network and Infrastructure Services (FY 2013)		-	-	20.338
<i>Articles:</i>		0	0	0
Description: See Description Below				
FY 2011 Accomplishments: See ``General Information Technology (IT) Services (FY 2011 - FY 2012)``				
FY 2012 Plans: See ``General Information Technology (IT) Services (FY 2011 - FY 2012)``				
FY 2013 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<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 (FY 2013)</p> <p>Articles:</p>		-	-	9.708
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: See ``Information Technology Sustainment Engineering (FY 2011 - FY 2012)``</p> <p>FY 2012 Plans: See ``Information Technology Sustainment Engineering (FY 2011 - FY 2012)``</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -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 		0	0	0
Title: General Information Technology (IT) Services (FY 2011 - FY 2012)		60.559	57.377	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p style="text-align: right;"><i>Articles:</i></p> <p>Description: See Description Below</p> <p>FY 2011 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 -Transitioned 50% of MDA workforce from WindowsXP to Windows7 -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 Access 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 180,000 help desk tickets -Sustained core communications distribution services across the MDA Enterprise consisting of 2 wide area networks, 3 metropolitan area networks, 14 local area networks, 180 sub-networks and over 5,000 network devices -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 -Managed MDA customer IT requirements planning, engineering and project management -Provided planning, budgeting, and management oversight of all Chief Information Office (CIO) activities -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) Information Technology (IT) budget reporting -Architected and developed plans to repair general IT service and business systems -Performed network tracking and analysis and reported metrics on equipment lifecycle and average time to repair -Planned, engineered and implemented sustainment projects for general IT service and business systems -Procured, received, inventoried, and managed IT equipment to include network devices and desktop and laptop computers -Provided Communications Security (COMSEC) operations and maintenance services for over 4,000 COMSEC items <p>FY 2012 Plans:</p>	0	0	0
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Sustain Enterprise Network Operations Security Center (ENOSC) 24 hours a day, 7 days a week (this effort was previously reported in Cyber Security and Information Assurance) -Sustain 8 hours a day, 5 days a week Information Technology (IT) operations of Federal Office Building II in the National Capital Region and Wynn Drive facility in Huntsville, Alabama until decommissioned -Sustain IT operational services 8 hours a day, 5 days a week for administrative and business information systems -Implement information assurance vulnerability assessment control improvements in accordance with established Plan of Action and Milestones -Monitor networks for user compliance and DoD policies, and report incidents -Fund hardware and software licenses for Information Technology (IT) operational systems (previously report in Knowledge and Information Management) -Test and implement software application upgrades -Maintain the network and help desk services -Provide planning, budgeting, and management oversight of IT projects -Provide web-based training to MDA users on new applications and upgrade -Monitor networks for user compliance with DoD policies and reported incidents -Maintain MDA IT system interface configuration control and asset management -Support in/out processing operations and relocation of MDA personnel -Maintain asset accountability of IT equipment in accordance with DoD policy -Fund MDA Chief Information Office (CIO) civilian salaries 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

Defense Efficiency - As part of the Department of Defense reform agenda, reductions reported for General IT Services in FY 2012 are \$2.639 million.

FY 2013 Plans:
See ``End User Support (FY 2013)`` and ``Network and Infrastructure Services (FY 2013)``

	FY 2011	FY 2012	FY 2013
Title: Knowledge and Information Management (FY 2011 - FY 2012)	11.463	13.433	-
Articles:	0	0	0

Description: See Description Below

- FY 2011 Accomplishments:**
- Sustained an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment
 - Began implementation of a portal-based Learning Management System
 - Integrated the Staff Action Control & Coordination Portal (SACCP) with the MDA E-tasker suspense and action tracking system
 - Hosted and provided business applications support for Program Resource Internet Database Environment (PRIDE), Information Management Program Activity control Tool (IMPACT), Comprehensive Cost and Requirement System (CCaRs), Standard Procurement System (SPS), Personnel Tracking System (PTS), Human Resource Tracking System (HRTS), Computer-aided Facilities Management CAFM
 - Provided server administration hosting licensing and management
 - Maintained Integrated Access Control System and Diamond II badge system
 - 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
 - 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
 - Maintained a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting
 - Maintained compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities
 - Sustained the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool
 - Managed a software assessment program and conducted reviews of proposed software applications for DoD compliance
 - Sustained a DoD mandated Electronics Records Management system

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Provided MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics</p> <p>FY 2012 Plans:</p> <p>-Manage MDA business applications and sustain financial and contractual support systems</p> <p>-Manage software assessment program and conduct reviews of proposed software applications for DoD compliance</p> <p>-Sustain the BMDS Integrated Master Schedule and the BMD Asset Management Tool</p> <p>-Conduct privacy impact surveys and support compliance reporting</p> <p>-Manage MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics</p> <p>-Sustain MDA Knowledge Online services</p> <p>-Fund MDA Chief Information Office (CIO) civilian salaries</p> <p>FY 2013 Plans:</p> <p>See ``Business Automation Services (FY 2013)`` and ``Portal and Data Services (FY 2013)``</p>				
<p>Title: Unified Communications (FY 2011 - FY 2012)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Supported unified communications during the transition to new facilities in Huntsville, AL and Alexandria, VA</p> <p>-Implemented voice-over-internet protocol in MDA facilities at Fort Belvoir, VA and Huntsville, AL</p> <p>-Implemented an emergency-alert system across MDA locations to provide the capability to notify MDA employees by text, voice and email in cases of emergencies</p>		<p>16.118</p> <p>Articles: 0</p>	<p>20.101</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Implemented an electronic scheduling capability to reserve MDA Video Teleconference Center (VTC) conference rooms across all MDA locations -Provided over 21,000 classified and unclassified bridged video teleconference sessions across all MDA locations -Supported over 22,800 classified and over 30,000 unclassified video teleconference sessions -Funded recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices) -Operated, monitored, and sustained recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan -Operated and sustained recurring classified and unclassified wireless services for over 2,000 users -Operated and sustained recurring operations for agency- wide video teleconference rooms and equipment -Implemented engineering solutions for all unified communication services -Began transitioning Agency to voice over internet protocol -Began implementation of unclassified desktop instant messaging and collaboration capabilities to MDA users <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Fund recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices) -Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan -Operate, monitor, and sustain recurring classified and unclassified wireless services -Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment -Provide and implement engineering solutions for all unified communication services -Fund MDA Chief Information Office (CIO) civilian salaries <p>Defense Efficiency - As part of the Department of Defense reform agenda, reductions reported for Unified Communications in FY 2012 are \$2.181 million.</p> <p>FY 2013 Plans: See ``Unified Communications (FY 2013)``</p>				
Title: Cyber Security and Information Assurance (FY 2011 - FY 2012)		9.102	13.779	-
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments:				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>-Monitored and defended MDA mission, test, and administrative information systems 24 hours a day, 7 days a week basis, 365 days a year</p> <p>-Achieved a ``commendable`` rating for the MDA Computer Emergency Response Team (CERT) Tier II Computer Network Defense Service Provider from an inspection by the Defense Information Systems Agency (DISA).</p> <p>-Collected, analyzed, and reported vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command</p> <p>-Ensured MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies</p> <p>-Implemented over 206 Information Assurance Vulnerability Assessments and Communication Tasking Orders</p> <p>-Investigated and remediated over 329 computer network defense cyber incidents</p> <p>-Prepared and maintained current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget</p> <p>-Managed data-at-rest encryption to ensure compliance with Global Information Grid mandated policies</p> <p>-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</p> <p>-Funded recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems</p> <p>-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</p> <p>-Completed DoD mandated annual Information Assurance user training for the MDA workforce</p> <p>-Provided Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs</p> <p>FY 2012 Plans:</p> <p>-Fund recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems</p> <p>-Monitor and defend MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year</p> <p>-Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Revise and update Information Assurance certification packages for administrative and business information technology systems reported to DoD and Office of Management and Budget -Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies -Manage the Information Assurance Workforce Improvement Program to certify Information Assurance professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and DoD Manual 8570.1, achieving the DoD certification goal -Complete 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 <p>FY 2013 Plans: See ``Information Assurance/Computer Network Defense (FY 2013)``</p>				
<p>Title: Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Supported the MDA Chief Information Officer (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 -Performed analyses of the Federal Data Center Consolidation Initiative and Federal and DoD Mandated Cloud Analysis -Supported MDA Command Group IT project planning and documentation (Executive digital dashboard, Human Resource Tasking System, and Electronic Tasker to Staff Action Control & Coordination Portal (SACCP) Integration) - Maintained IT life-cycle asset management of over 57,000 devices and associated software to comply with Federal and DoD policies (desktops, laptops, monitors, printers, thin clients, servers, routers, switches, video telecommunications, BlackBerrys, and COMSEC) <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Sustain Information Technology (IT) services across the MDA Enterprise and maintain critical spares inventory -Architect and develop plans to repair general IT service and business systems 		8.662	11.818	-
		Articles: 0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Perform analysis, track, and report metrics on equipment lifecycle and average time to repair			
-Plan, engineer and implement sustainment projects for general IT service and business systems			
-Revise and test contingency plans for IT systems across the MDA enterprise			
-Procure, receive, inventory, and manage IT equipment to include network devices, desktop and laptop computers			
-Fund MDA Chief Information Officer (CIO) civilian and matrix civilian salaries			
Defense Efficiency - As part of the Department of Defense reform agenda, reductions report for IT Sustainment Engineering for FY 2012 are \$.406 million.			
FY 2013 Plans: See ``IT Planning and Solutions (FY 2013)``			
Accomplishments/Planned Programs Subtotals	105.904	116.508	107.744

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	55.351	41.174	55.550		55.550	53.139	53.718	59.291	60.540	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing
• 0604884C: <i>Airborne Infrared (ABIR)</i>	71.550	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	71.550
• 0901598C: <i>Management HQ - MDA</i>	28.472	28.908	34.855		34.855	25.473	30.838	31.482	32.798	Continuing	Continuing

D. Acquisition Strategy

In FY 2012, the MDA will award 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
End User Support (FY 2013) End User Civilian Pay/Travel/ PCS	Allot	MDA Civilian Pay:Various MDA Locations	-	-		3.140		-		3.140	Continuing	Continuing	Continuing
End User Support (FY 2013) End User IT Licenses	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		5.064	Oct 2012	-		5.064	Continuing	Continuing	Continuing
End User Support (FY 2013) End User Assistance and Advisory Services	C/CPFF	Colsa:Various MDA Locations	-	-		3.659	Oct 2012	-		3.659	Continuing	Continuing	Continuing
End User Support (FY 2013) End User Operational Support	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		11.732	Oct 2012	-		11.732	Continuing	Continuing	Continuing
End User Support (FY 2013) End User IT Hardware/ Software Support	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		8.589	Nov 2012	-		8.589	Continuing	Continuing	Continuing
End User Support (FY 2013) End User Civilian Travel	Allot	MDA Civilian Travel:Various MDA Locations	-	-		0.774		-		0.774	Continuing	Continuing	Continuing
Unified Communications (FY 2013) Leased Communications/Licenses	MIPR	DISA/DREN:IL	-	-		9.016		-		9.016	Continuing	Continuing	Continuing
Unified Communications (FY 2013) Unified	Allot	MDA Civilian Pay:Various MDA Locations	-	-		0.628		-		0.628	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Communications Civilian Pay/Travel/PCS													
Unified Communications (FY 2013) Unified Communications Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	-	-		0.629	Oct 2012	-		0.629	Continuing	Continuing	Continuing
Unified Communications (FY 2013) VTC Operations Support	C/CPFF	TBD:Various MDA Locations	-	-		5.405		-		5.405	Continuing	Continuing	Continuing
Unified Communications (FY 2013) Unified Communications Operational Support	Allot	Northrop Grumman:Various MDA Locations	-	-		0.895	Oct 2012	-		0.895	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (FY 2013) CND/IA Civilian Pay/Travel/PCS	C/FFP	MDA Civilian Pay:Various MDA Locations	-	-		1.727		-		1.727	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (FY 2013) CND/IA Operational Support	C/FFP	Northrop Grumman:Various MDA Locations	-	-		6.297	Oct 2012	-		6.297	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (FY 2013) CND/IA Licenses	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		0.147	Oct 2012	-		0.147	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (FY 2013) CND/IA Advisory and Assistance Services - 20117113608945	C/CPFF	Torch Technologies:Various MDA Locations	-	-		3.143	Oct 2012	-		3.143	Continuing	Continuing	Continuing
Business Automation Services (FY 2013) Business Automation Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:Various MDA Locations	-	-		0.471		-		0.471	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Business Automation Services (FY 2013) Business Automation Licenses	C/CPAF	Northrop Grumman: Various MDA Locations	-	-		1.608	Oct 2012	-		1.608	Continuing	Continuing	Continuing
Business Automation Services (FY 2013) Business Automation Advisory and Assistance Services	C/CPFF	Colsa: Various MDA Locations	-	-		0.210	Oct 2012	-		0.210	Continuing	Continuing	Continuing
Business Automation Services (FY 2013) Business Automation Operational Support	C/CPAF	Northrop Grumman: Various MDA Locations	-	-		3.759	Oct 2012	-		3.759	Continuing	Continuing	Continuing
Business Automation Services (FY 2013) Business Automation PRIDE Support	C/CPAF	CAMBER: Various MDA Locations	-	-		1.024	Oct 2012	-		1.024	Continuing	Continuing	Continuing
Portal and Data Services (FY 2013) Portal and Data Services Advisory and Assistance Services	C/CPFF	Colsa: Various MDA Locations	-	-		0.419		-		0.419	Continuing	Continuing	Continuing
Portal and Data Services (FY 2013) Portal and Data Services Civilian Pay/Travel/PCS	Allot	MDS Civilian Pay: Various MDA Locations	-	-		0.628		-		0.628	Continuing	Continuing	Continuing
Portal and Data Services (FY 2013) Portal and Data Services Operational Support	C/FFP	PHACIL: Various MDA Locations	-	-		6.324	Nov 2012	-		6.324	Continuing	Continuing	Continuing
Portal and Data Services (FY 2013) Portal and Data Services Licenses and Maintenance	C/CPAF	Northrop Grumman: Various MDA Locations	-	-		2.410	Oct 2012	-		2.410	Continuing	Continuing	Continuing
Portal and Data Services (FY 2013) Portal and Data Services Operational	C/CPAF	Northrop Grumman: Various MDA Locations	-	-		-	Oct 2012	-		-	Continuing	Continuing	Continuing
Network and Infrastructure Services (FY 2013) Network	C/CPAF	Northrop Grumman: Various MDA Locations	-	-		8.413	Feb 2013	-		8.413	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
and Infrastructure Services Operational Support													
Network and Infrastructure Services (FY 2013) Network and Infrastructure Services Licenses	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		8.732	Feb 2013	-		8.732	Continuing	Continuing	Continuing
Network and Infrastructure Services (FY 2013) Network and Infrastructure Services Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	-	-		0.838	Sep 2013	-		0.838	Continuing	Continuing	Continuing
Network and Infrastructure Services (FY 2013) Network and Infrastructure Service Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:Various MDA Locations	-	-		2.355		-		2.355	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions (FY 2013) IT Planning and Solutions Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:Various MDA Locations	-	-		1.329		-		1.329	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions (FY 2013) IT Planning and Solutions Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	-	-		0.419	Sep 2013	-		0.419	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions (FY 2013) IT Planning and Solutions Operational Support	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		4.117	Feb 2013	-		4.117	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions (FY 2013) IT Planning and Solutions OMB, OSD, and DoD Compliance Monitoring	C/CPFF	Colsa:Various MDA Locations	-	-		0.133	Sep 2013	-		0.133	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
and Reporting/Contract Deliverable													
Information Technology (IT) Planning and Solutions (FY 2013) MDA Agency Business Operations	Allot	MDA Business Operations:Various MDA Locations	-	-		0.510		-		0.510	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions (FY 2013) IT Planning and Solutions IT Asset Management	C/CPAF	Northrop Grumman:Various MDA Locations	-	-		3.200	Feb 2013	-		3.200	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) IT Operations	C/CPAF	Northrop Grumman:Various MDA Locations	32.031	32.025	Oct 2011	-		-		-	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) IT Management Support/ Portfolio/CRMs	C/CPAF	Northrop Grumman:Various MDA Locations	-	2.101	Oct 2011	-		-		-	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) General IT Advisory and Assistance Services	C/CPFF	General Dynamics IT:Various MDA Locations	1.574	-		-		-		-	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) Civilian Travel/PCS	Allot	MDA Civilian Travel:Civilian	0.890	0.817		-		-		-	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) IT Hardware/Software Licenses and Maintenance	C/FP	Various:Various	13.278	14.563	Dec 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
General Information Technology (IT) Services (FY 2011 - FY 2012) MDA CIO General IT Services Civilian Pay	Allot	MDA Civilian Pay:Various MDA Locations	2.830	6.054		-		-		-	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) General IT Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	-	1.817	Oct 2011	-		-		-	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2011 - FY 2012) Contract Management Oversight	TBD	Various:Various MDA Locations	9.956	-		-		-		-	Continuing	Continuing	Continuing
Knowledge and Information Management (FY 2011 - FY 2012) Unclassified MDA Knowledge Online O&M Support	C/CPAF	PHACIL:VA	5.697	6.893	Sep 2012	-		-		-	Continuing	Continuing	Continuing
Knowledge and Information Management (FY 2011 - FY 2012) Knowledge Mgt Advisory and Assistance Services	C/CPAF	General Dynamics IT:Various MDA Locations	0.520	-		-		-		-	Continuing	Continuing	Continuing
Knowledge and Information Management (FY 2011 - FY 2012) Standard Procurement System Support	MIPR	SPS JPMO:VA	0.019	0.424		-		-		-	Continuing	Continuing	Continuing
Knowledge and Information Management (FY 2011 - FY 2012) PRIDE Application Support	C/CPFF	CAMBER:AL	1.360	1.128	Jun 2012	-		-		-	Continuing	Continuing	Continuing
Knowledge and Information Management (FY 2011 - FY 2012) Classified MDA	C/CPAF	Northrop Grumman:Various MDA Locations	0.338	1.968	Feb 2012	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract	
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost		
Knowledge Online O&M Support														
Knowledge and Information Management (FY 2011 - FY 2012) Knowledge and Information Software Licenses	C/CPAF	Northrop Grumman:Various MDA Locations	3.104	1.920	Feb 2012	-		-		-	Continuing	Continuing	Continuing	
Knowledge and Information Management (FY 2011 - FY 2012) MDA CIO Knowledge and Information Management Civilian Pay	Allot	MDA Civilian Pay:Various MDA Locations	-	1.100				-		-	Continuing	Continuing	Continuing	
Knowledge and Information Management (FY 2011 - FY 2012) Decision Support System	C/CPAF	IBM:MDA Huntsville	0.425	-				-		-	Continuing	Continuing	Continuing	
Unified Communications (FY 2011 - FY 2012) Leased Communications - LAN/WAN	MIPR	DISA/DREN:Various Locations	4.154	4.110				-		-	Continuing	Continuing	Continuing	
Unified Communications (FY 2011 - FY 2012) WAN Engineering Sustainment Support	C/CPAF	Northrop Grumman:Various MDA Locations	0.845	0.990	Oct 2011			-		-	Continuing	Continuing	Continuing	
Unified Communications (FY 2011 - FY 2012) Leased Telecom/Wireless/Local/Long Distance	C/FP	Various:Various	4.906	5.971				-		-	Continuing	Continuing	Continuing	
Unified Communications (FY 2011 - FY 2012) Unified Communications Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	-	0.552	Oct 2011			-		-	Continuing	Continuing	Continuing	
Unified Communications (FY 2011 - FY 2012) VTC Operations	C/CPFF	Microtech:Various MDA Locations	5.604	-	Oct 2011			-		-	Continuing	Continuing	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unified Communications (FY 2011 - FY 2012) MDA CIO Unified Communications Civilian Pay	Allot	MDA Civilian Pay:Various MDA Locations	-	1.284		-		-		-	Continuing	Continuing	Continuing
Unified Communications (FY 2011 - FY 2012) Unified Communications Advisory and Assistance Services	C/CPFF	General Dynamics IT:Various MDA Locations	0.609	-		-		-		-	Continuing	Continuing	Continuing
Unified Communications (FY 2011 - FY 2012) VTC Operations	C/CPIF	TBD:TBD	-	7.194	Sep 2012	-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) MDA Information Assurance Certification	C/CPAF	Northrop Grumman:Various MDA Locations	1.669	2.771	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) Information Assurance Advisory and Assistance Services	C/CPFF	Torch:Various MDA Locations	0.388	3.343	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) DIACAP Certification/Accreditation Support	C/CPFF	Torch:Various MDA Locations	0.388	1.385	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) DEERS/RAPIDS/Active Client/Card Support	MIPR	Various:Various	0.080	0.090		-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) Identify Protection Support	C/CPAF	WHS:VA	0.170	0.179	Jan 2012	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cyber Security and Information Assurance (FY 2011 - FY 2012) COMSEC	C/CPAF	Northrop Grumman: Various MDA Locations	0.647	0.319	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) IAVA Operations and Support	C/CPAF	Northrop Grumman: Various MDA Locations	2.247	2.573	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) Information Assurance ENOSC (Moved to General IT Services for FY 2012)	C/CPAF	Northrop Grumman: Various MDA Locations	2.272	-		-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) MDA CIO Information Assurance Civilian Pay	Allot	MDA Civilian Pay: Various MDA Locations	-	3.119		-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) Information Assurance Advisory and Assistance Services	C/CPFF	General Dynamics IT: Various MDA Locations	0.609	-		-		-		-	Continuing	Continuing	Continuing
Cyber Security and Information Assurance (FY 2011 - FY 2012) DIACAP Certification and Accreditation Support	C/CPFF	General Dynamics IT: Various MDA Locations	0.632	-		-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) Implementation/Architectural Engineering Support	C/CPAF	Northrop Grumman: Various MDA Locations	1.958	2.178	Oct 2011	-		-		-	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) IT Recapitalization/Consumables	C/CPAF	Northrop Grumman: Various MDA Locations	4.317	3.736	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) Contract Deliverables/OMB, OSD, DoD Compliance Monitoring Reporting	C/CPFF	Colsa: Various MDA Locations	0.246	3.637	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) IT Sustainment Engineering Advisory and Assistance Services	C/CPFF	General Dynamics IT: Various MDA Locations	0.342	0.249		-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) MDA CIO IT Sustainment Engineering Civilian Pay	Allot	MDA Civilian Pay: Various MDA Locations	-	2.018		-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) Contract Deliverables/OMB, OSD, DoD Compliance Monitoring Reporting	C/CPFF	General Dynamics IT: Various MDA Locations	1.539	-		-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) CIO Admin Support	C/CPFF	Alatec: MDA Huntsville	0.136	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Information Technology (IT) Sustainment Engineering (FY 2011 - FY 2012) CIO HR Support	C/CPFF	Peopletec: MDA Colorado Springs	0.124	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			105.904	116.508		107.744		-		107.744			

Remarks
 The overall increase from FY 2011 to FY 2012 reflects the funding this Project requires to operate and maintain the MDA IT infrastructure to meet the demands of the Agency, to ensure it operates in a secure environment, and to ensure technology enhancements promote the maximum efficiency of operations.

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

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

Remarks
N/A

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

Remarks
N/A

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			105.904	116.508		107.744		-		107.744			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>
PROJECT MD30: <i>BMD Information Management Systems</i>	

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 - FY 2011 1st-4th Qtr	✦	✦	✦	✦																								
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - 1st Qtr FY2012					▲																							
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - 2nd-4th Qtr FY 2012						✦	✦	✦																				
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2013									✦	✦	✦	✦																
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2014													✦	✦	✦	✦												
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2015																	✦	✦	✦	✦								
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2016																					✦	✦	✦	✦				
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2017																									✦	✦	✦	✦
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2011 1st-4th Qtr	✦	✦	✦	✦																								
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - 1st Qtr FY 2012					▲																							
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - 2nd - 4th Qtr FY 2012						✦	✦	✦																				
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2013									✦	✦	✦	✦																

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2014													✦	✦	✦	✦												
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2015																												
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2016																												
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2017																												
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2011 1st-4t Qtr	✦	✦	✦	✦																								
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 - 1st Qtr FY 2012					▲																							
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - 2nd-4th Qtr FY 2012																												
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2013																												
Monitor Network and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2014																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2015																												
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2016																												
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2017																												
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - 1st - 4th Qtr FY 2011	+ + + +																											
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - 2st Qtr FY 2012				▲																								
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - 2nd - 4th Qtr FY 2012																												
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2013																												
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2014																												
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2015																												
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2016																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - 1st Qtr FY 2012				▲																								
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - 2nd - 4th FY 2012					✧	✧	✧																					
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2013									✧	✧	✧	✧																
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2014													✧	✧	✧	✧												
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2015																	✧	✧	✧	✧								
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2016																					✧	✧	✧	✧				
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2017																									✧	✧	✧	✧
Revise and Test Contingency Plans for Information Technology Systems - FY 2011 1st-4th Qtr	✦	✦	✦	✦																								
Revise and Test Contingency Plans for Information Technology Systems - FY 2012 1st Qtr				▲																								
Revise and Test Contingency Plans for Information Technology Systems - 2nd - 4th Qtr FY 2012					✧	✧	✧																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Revise and Test Contingency Plans for Information Technology Systems - FY 2013									☆	☆	☆	☆																
Revise and Test Contingency Plans for Information Technology Systems - FY 2014													☆	☆	☆	☆												
Revise and Test Contingency Plans for Information Technology Systems - FY 2015																	☆	☆	☆	☆								
Revise and Test Contingency Plans for Information Technology Systems - FY 2016																					☆	☆	☆	☆				
Revise and Test Contingency Plans for Information Technology Systems - FY 2017																									☆	☆	☆	☆
Complete Annual Information Assurance User Training for MDA Workforce - FY 2011 1st-4rd Qtr	+	+	+	+																								
Complete Annual Information Assurance User Training for MDA Workforce - FY 2012					☆	☆	☆																					
Complete Annual Information Assurance User Training for MDA Workforce - FY 2013									☆	☆	☆	☆																
Complete Annual Information Assurance User Training for MDA Workforce - FY 2014													☆	☆	☆	☆												
Complete Annual Information Assurance User Training for MDA Workforce - FY 2015																	☆	☆	☆	☆								
Complete Annual Information Assurance User Training for MDA Workforce - FY 2016																					☆	☆	☆	☆				
Complete Annual Information Assurance User Training for MDA Workforce - FY 2017																									☆	☆	☆	☆
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2011 1st-4th Qtr	+	+	+	+																								
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - 1st Qtr FY 2012					▲																							
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - 2nd - 4th FY 2012						☆	☆	☆																				
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2013									☆	☆	☆	☆																

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017					
	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		
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2014													✦	✦	✦	✦														
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2015																	✦	✦	✦	✦										
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2016																					✦	✦	✦	✦						
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2017																											✦	✦	✦	✦
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2011 1st-4th Qtr	✦	✦	✦	✦																										
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - 1st Qtr FY 2012					▲																									
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - 2nd - 4th QTR FY 2012						✦	✦	✦																						
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2013									✦	✦	✦	✦																		
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2014													✦	✦	✦	✦														
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2015																✦	✦	✦	✦											
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY2016																				✦	✦	✦	✦							
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY2017																											✦	✦	✦	✦

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2011 1st-4th Qtr	✦	✦	✦	✦																								
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - 1st Qtr FY 2012					▲																							
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - 2nd - 4th Qtr FY 2012						◆	◆	◆																				
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2013									◆	◆	◆	◆																
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2014													◆	◆	◆	◆												
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2015																	◆	◆	◆	◆								
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2016																					◆	◆	◆	◆				
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2017																									◆	◆	◆	◆
Operate, Monitor and Sustain Recurring Operations for Video Conferencing for Unified Communications - FY 2011 1st-4th Qtr	✦	✦	✦	✦																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - 1st Qtr FY 2012				▲																								
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - 2nd - 4th Qtr FY 2012					+	+	+																					
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2013									+	+	+	+																
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2014													+	+	+	+												
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2015																	+	+	+	+								
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2016																					+	+	+	+				
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2017																									+	+	+	+
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2011 1st-4th Qtr	+	+	+	+																								
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - 1st Qtr FY 2012				▲																								
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - 2nd - 4th Qtr FY 2012					+	+	+																					
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2013									+	+	+	+																
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2014													+	+	+	+												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 - 1st Qtr FY 2012				▲																								
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - 2nd - 4th Qtr FY 2012					+	+	+																					
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2013									+	+	+	+																
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2014													+	+	+	+												
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2015																	+	+	+	+								
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2016																					+	+	+	+				
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2017																									+	+	+	+
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2011 1st-4th Qtr	+	+	+	+																								
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - 1st Qtr FY 2012				▲																								
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - 2nd - 4th Qtr FY 2012					+	+	+																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 - FY 2013									✦	✦	✦	✦																
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2014													✦	✦	✦	✦												
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2015																	✦	✦	✦	✦								
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2016																					✦	✦	✦	✦				
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2017																									✦	✦	✦	✦
Procure, Implement and Asset Control for Information Technology Operational Systems - 1st - 4th Qtr FY 2011	✦	✦	✦	✦																								
Procure, Implement, and Asset Control for Information Technology Operational Systems - 1st Qtr FY 2012					▲																							
Procure, Implement, and Asset Control for Information Technology Operational Systems - 2nd - 4th Qtr FY 2012									✦	✦	✦																	
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2013													✦	✦	✦	✦												
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2014																	✦	✦	✦	✦								
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2015																					✦	✦	✦	✦				
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2016																									✦	✦	✦	✦

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - 1st Qtr FY 2012				▲																								
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2012					☆	☆	☆																					
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2013									☆	☆	☆	☆																
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2014													☆	☆	☆	☆												
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2015																	☆	☆	☆	☆								
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2016																					☆	☆	☆	☆				
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2017																									☆	☆	☆	☆

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2011 1st-4th Qtr	1	2011	4	2011
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - 1st Qtr FY2012	1	2012	1	2012
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - 2nd-4th Qtr FY 2012	2	2012	4	2012
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2013	1	2013	4	2013
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2014	1	2014	4	2014
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2015	1	2015	4	2015
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2016	1	2016	4	2016
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY 2017	1	2017	4	2017
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2011 1st-4th Qtr	1	2011	4	2011
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - 1st Qtr FY 2012	1	2012	1	2012
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2013	1	2013	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2014	1	2014	4	2014
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2015	1	2015	4	2015
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2016	1	2016	4	2016
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2017	1	2017	4	2017
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2011 1st-4t Qtr	1	2011	4	2011
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 - 1st Qtr FY 2012	1	2012	1	2012
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - 2nd-4th Qtr FY 2012	2	2012	4	2012
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2013	1	2013	4	2013
Monitor Network and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2014	1	2014	4	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 - FY 2015	1	2015	4	2015
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2016	1	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2017	1	2017	4	2017
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - 1st - 4th Qtr FY 2011	1	2011	4	2011
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - 2st Qtr FY 2012	1	2012	1	2012
Implement Information Surface Vulnerability Alert Control Improvements for General Information Technology Services - 1st Qtr FY12	1	2012	1	2012
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2013	1	2013	4	2013
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2014	1	2014	4	2014
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2015	1	2015	4	2015
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2016	1	2016	4	2016
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY 2017	1	2017	4	2017
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2011 1st-4th Qtr	1	2011	4	2011
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - 1st Qtr FY 2012	1	2012	1	2012
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2013	1	2013	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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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 - FY 2014	1	2014	4	2014
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2015	1	2015	4	2015
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2016	1	2016	4	2016
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2017	1	2017	4	2017
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2011 1st-4th Qtr	1	2011	4	2011
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - 1st Qtr FY 2012	1	2012	1	2012
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - 2nd - 4th FY 2012	2	2012	4	2012
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2013	1	2013	4	2013
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2014	1	2014	4	2014
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2015	1	2015	4	2015
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2016	1	2016	4	2016
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2017	1	2017	4	2017
Revise and Test Contingency Plans for Information Technology Systems - FY 2011 1st-4th Qtr	1	2011	4	2011
Revise and Test Contingency Plans for Information Technology Systems - FY 2012 1st Qtr	1	2012	1	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Revise and Test Contingency Plans for Information Technology Systems - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Revise and Test Contingency Plans for Information Technology Systems - FY 2013	1	2013	4	2013
Revise and Test Contingency Plans for Information Technology Systems - FY 2014	1	2014	4	2014
Revise and Test Contingency Plans for Information Technology Systems - FY 2015	1	2015	4	2015
Revise and Test Contingency Plans for Information Technology Systems - FY 2016	1	2016	4	2016
Revise and Test Contingency Plans for Information Technology Systems - FY 2017	1	2017	4	2017
Complete Annual Information Assurance User Training for MDA Workforce - FY 2011 1st-4rd Qtr	1	2011	4	2011
Complete Annual Information Assurance User Training for MDA Workforce - FY 2012	1	2012	3	2012
Complete Annual Information Assurance User Training for MDA Workforce - FY 2013	1	2013	4	2013
Complete Annual Information Assurance User Training for MDA Workforce - FY 2014	1	2014	4	2014
Complete Annual Information Assurance User Training for MDA Workforce - FY 2015	1	2015	4	2015
Complete Annual Information Assurance User Training for MDA Workforce - FY 2016	1	2016	4	2016
Complete Annual Information Assurance User Training for MDA Workforce - FY 2017	1	2017	4	2017
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2011 1st-4th Qtr	1	2011	4	2011
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - 1st Qtr FY 2012	1	2012	1	2012
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - 2nd - 4th FY 2012	2	2012	4	2012
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2013	1	2013	4	2013
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2014	1	2014	4	2014
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2015	1	2015	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2016	1	2016	4	2016
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2017	1	2017	4	2017
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2011 1st-4th Qtr	1	2011	4	2011
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - 1st Qtr FY 2012	1	2012	1	2012
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - 2nd - 4th QTR FY 2012	2	2012	4	2012
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2013	1	2013	4	2013
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2014	1	2014	4	2014
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2015	1	2015	4	2015
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY2016	1	2016	4	2016
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY2017	1	2017	4	2017
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2011 1st-4th Qtr	1	2011	4	2011
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - 1st Qtr FY 2012	1	2012	1	2012
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2013	1	2013	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2014	1	2014	4	2014
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2015	1	2015	4	2015
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2016	1	2016	4	2016
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2017	1	2017	4	2017
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2011 1st-4th Qtr	1	2011	4	2011
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - 1st Qtr FY 2012	1	2012	1	2012
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2013	1	2013	4	2013
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2014	1	2014	4	2014
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2015	1	2015	4	2015
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2016	1	2016	4	2016
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2017	1	2017	4	2017
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2011 1st-4th Qtr	1	2011	4	2011
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - 1st Qtr FY 2012	1	2012	1	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2013	1	2013	4	2013
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2014	1	2014	4	2014
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2015	1	2015	4	2015
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2016	1	2016	4	2016
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2017	1	2017	4	2017
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2011 1st-4rd Qtr	1	2011	4	2011
Sustain the Information Technology Infrastructure Across the MDA Enterprise - 1st Qtr FY 2012	1	2012	1	2012
Sustain the Information Technology Infrastructure Across the MDA Enterprise - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2013	1	2013	4	2013
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2014	1	2014	4	2014
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2015	1	2015	4	2015
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2016	1	2016	4	2016
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2017	1	2017	4	2017
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2011 1st-4th Qtr	1	2011	4	2011
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - 1st Qtr FY 2012	1	2012	1	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2013	1	2013	4	2013
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2014	1	2014	4	2014
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2015	1	2015	4	2015
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2016	1	2016	4	2016
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2017	1	2017	4	2017
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2011 1st-4th Qtr	1	2011	4	2011
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - 1st Qtr FY 2012	1	2012	1	2012
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2013	1	2013	4	2013
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2014	1	2014	4	2014
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2015	1	2015	4	2015
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2016	1	2016	4	2016
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2017	1	2017	4	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Procure, Implement and Asset Control for Information Technology Operational Systems - 1st - 4th Qtr FY 2011	1	2011	4	2011
Procure, Implement, and Asset Control for Information Technology Operational Systems - 1st Qtr FY 2012	1	2012	1	2012
Procure, Implement, and Asset Control for Information Technology Operational Systems - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2013	1	2013	4	2013
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2014	1	2014	4	2014
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2015	1	2015	4	2015
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2016	1	2016	4	2016
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2017	1	2017	4	2017
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2011 1st-4th Qtr	1	2011	4	2011
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - 1st Qtr FY 2012	1	2012	1	2012
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - 2nd - 4th Qtr FY 2012	2	2012	4	2012
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2013	1	2013	4	2013
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2014	1	2014	4	2014
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2015	1	2015	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2016	1	2016	4	2016
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2017	1	2017	4	2017
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2011 1st-4th Qtr	1	2011	4	2011
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - 1st Qtr FY 2012	1	2012	1	2012
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2012	2	2012	4	2012
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2013	1	2013	4	2013
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2014	1	2014	4	2014
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2015	1	2015	4	2015
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2016	1	2016	4	2016
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2017	1	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD31: <i>Modeling & Simulation</i>	61.456	56.617	46.608	-	46.608	45.402	38.740	51.280	52.393	Continuing	Continuing
Quantity of RDT&E Articles	5	0	0		0	0	0	0	0		

Note

In FY 2012 the Modeling and Simulation (M&S) Hardware-in-the-Loop (HWIL) Framework, Simulations, Models, M&S Digital Framework, Simulations, Models; and the M&S Education, Validation and Accreditation (VV&A) and Test Operations are realigned from the BMD Aegis PE 0603892C, Budget Project MD09.

A. Mission Description and Budget Item Justification

As missile defense technologies continually advance and the threat changes, Modeling and Simulation develops system-level models, simulations, and environments, and then evaluates performance of the Elements, Components, and the overall Ballistic Missile Defense System (BMDS). Consequently, MDA's Directorate for Modeling and Simulation is responsible for the Modeling & Simulation (M&S) system and product planning, development, integration, operation, threat model verification and analysis, as well as the integration and deployment of the Agency's Distributed Ballistic Missile Defense System (BMDS) Real-Time Hardware-in-the-Loop truth framework Hardware/Software (HW/SW) and digital M&S simulation capabilities into a single, integrated, and synchronized program to assist the M&S development and acquisition of the BMDS.

Interdependencies: MDA's Modeling and Simulation (M&S) program is essential to ensuring missile defense capabilities are affordable and effective. Through the use of verified and validated models and accredited simulation systems, the MDA's M&S program provides the cost effective means to prove and explore the performance space of the BMDS beyond what can be physically tested under current range conditions. This program enables the concept exploration and functional analyses used to assess BMDS capabilities with the M&S systems and products [e.g., MDA element M&S as well as MDA's Hardware-in-the-Loop (HWIL) and digital frameworks as well as consistent truth and common threat engineering] providing the efficient capability to prove the missile defense capability through rigorous testing processes to include pre-test, ground test, flight test and post-test activities. Through conceptual simulation activities, M&S provides the capability to design and develop technologies to guard against future missile threats. Throughout the budget justification material, interdependencies are highlighted in order to explain fully the relationship between different parts of the proposed program and how the M&S program enables the required capabilities to meet the threat today and develop the capabilities to defeat those future threats. M&S interdependencies are key in BMDS performance evaluation strategy with models and simulations of the BMDS. These efforts require close coordination with the Operational Test Agencies (OTAs), Elements, Combatant Commands (COCOMs), Army, Air Force, and numerous MDA organizations.

The mission of the MDA's Directorate for Modeling and Simulation is 1) to execute a single, integrated, and synchronized program to manage M&S development in support of MDS's BMDS acquisition, 2) to establish, maintain, and refine system M&S data elements and parameters to validate the BMDS M&S domain, and 3) to drive MDA test activities to collect data for use in anchoring M&S to support MDA's goals.

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD31: <i>Modeling & Simulation</i>

The FY 2011 M&S Program focused on further correction of the deficiencies stated in the 2008 Director of Operational Test and Evaluation (DOT&E) BMDS Assessment Report to include:

- Executed BMDS scenarios that flight testing cannot assess because of geographic and safety constraints with models and simulations
- Predicted system performance with the use of verified and validated models and simulations
- Executed System Post-Flight Reconstructions (SPFRs) to provide empirical and prediction data to confirm system performance and to further refine and validate models and simulations. Executed System Pre-Mission Testing (SPMTs) to provide pre-test system prediction data.
- Jointly developed accreditation criteria between MDA and Operational Test Agency (OTA)
- Addressed the Verification and Validation (V&V) of threat models, radar models, interceptor and lethality models
- Released a solicitation (Full and Open Competition) for an integrated, composable and open M&S Framework (Objective Simulation Framework, or OSF) to resolve integration challenges across the breadth of the BMDS M&S enterprise

With the Director's Priorities for FY 2013 of: 1. Enhancing Homeland Defense, 2. Enhancing Regional Defense, 3. Testing, and 4. Developing New Capabilities, the M&S objective is to evolve the various systems and products to match, as appropriate, the real world performance of the BMDS and meet Warfighter needs. In particular, MDA's M&S systems and products provide analysis, decision-making and planning capabilities for Real-World Operations in support of the White House, Joint Staff, Services, NATO, COCOMs (EUCOM, PACOM, CENTCOM, STRATCOM [Military Utility Assessment]), Operational Test Agency (OTA), Director of Operational Test & Evaluation (DOT&E), and Allies. Targeted M&S activities support all aspects of BMDS development including BMDS design, Element modifications (including reliability enhancements), flight test missions, ground tests, wargames, exercises, Performance Assessments (PAs), and Technical Assessments (TAs). Models and simulations are tailored to the specific need of a component in its current stage of development, ranging from low-to-medium fidelity analyses supporting concept definitions studies, to high-fidelity models used to support engineering development.

M&S Frameworks: To execute the M&S mission requires reliance on and operation of two simulation frameworks which, when combined to meet specific M&S use case and user requirements with the appropriate fidelity, forming a single Objective Simulation Architecture (OSA) to enable BMDS performance in a simulated environment. The BMDS M&S System is evolving into a fully integrated End-to-End system for all M&S uses and venues, providing a common source for truth and event control with an Initial Operational Capability. The final integrated system will merge the Single Stimulation Framework (SSF) and Digital Simulation Architecture (DSA) into one seamless M&S system that will meet both real-time and non-real time simulation needs. This combined framework, called the Objective Simulation Framework (OSF), will host all simulated activities, events, scenarios, and Element and Threat models. MDA will use the end-to-end M&S System to conduct BMDS ground tests, Performance Assessments (PAs), Technical Assessments (TAs), component training, wargames, flight tests, threat analysis, international events, and COCOM exercises.

Core Truth and Common Threat Engineering (formerly PLET-C): The Core Truth Model program within MDA Directorate for Modeling and Simulation provides consistent and common Phenomenology, Lethality, Environment, Communications, and Threat capabilities for Agency M&S venues. In particular, Phenomenology models address the electro-optics and infrared of the missile hard body as well as the plume produced by the missile engines. Lethality models represent the impact

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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of the BMDS missile kill vehicle (KV) (i.e. Ground-Based Interceptor, THAAD) on reentry vehicles (RV) with results including the percentage of destruction, and the direction and speed of the intercept debris fragments, amongst others. The Environment modeling capability provides the natural and man-made endo- and exo-atmospheric phenomena (e.g., rain, wind, sea state) to the various M&S simulations while Communication modeling addresses the representations of communications within and outside the BMDS. Finally, the common threat engineering produces common and consistent adversary trajectory and signature data to enable BMDS and sub-system concept and requirements, design, verification and assessment. Here, common threat data is used in various BMDS simulation events (e.g., flight, ground, performance assessment, warfighter training/exercises) to prove the performance of the BMDS. These threat representations are derived from the Adversary Capability Document (ACD) and Adversary Data Packages (ADP). The Threat Modeling Center (TMC) uses derivative ADP-based threat specifications to develop various missile models which are used to produce threat trajectory products in support of MDA events. After missile models are developed, the results are tested using Threat Modeling Center trajectory generation tools to ensure output trajectories match the derivative ADP reference trajectories. All TMC models receive rigorous quality control reviews in addition to Verification & Validation reviews. After these models are completed, the ADP is updated to include any additional threat specifications or changes.

Testing: The distinct capabilities of the MDA's M&S systems and products are ingrained throughout the MDA Elements 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 works to validate 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 threat, phenomenology, lethality, communications, and environmental modeling. 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 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.

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

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

	FY 2011	FY 2012	FY 2013
<p>Title: Modeling and Simulation (M&S) Capability Development</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Supported the system engineering capability trades for the Phased Adaptive Approach (PAA) Phase II and the Robust BMDS Capability Delivery (formerly Capability Delivery 06)</p>	<p>8.509</p> <p>0</p>	<p>7.690</p> <p>0</p>	<p>8.612</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Released solicitation via FedBizOpps for the Objective Simulation Framework (OSF), with Contract Award expected in 4Q/FY 2011. This contract will be a five-year Indefinite Delivery/Indefinite Quantity (IDIQ) with a life-cycle value of \$500 Million</p> <p>-Verified and adjudicated stakeholder Modeling and Simulation (M&S) need statements, capability statements, and capability packages for Epoch testing and assessment in Performance Assessment (PA) venues, Ground Test Campaigns, and Assured Response and Terminal Fury Warfighter exercises</p> <p>-Implemented updates to over 170 model capability descriptions in the Missile Defense Agency`s M&S catalog with a record of current capabilities and limitations, history, and development plans.</p> <p>-Implemented a visualization tool package with specific focus on analysis of comparisons between real world data (Flights and Ground Tests) and digital predictions of same.</p> <p>-Performed traceability study between the Modeling and Simulation requirements database and Modeling and Simulation product development capabilities</p> <p>-Developed and published M&S Program Office Guidance Memorandum #1 detailing the M&S Development Process</p> <p>-Developed draft M&S System Engineering Plan</p> <p>-Gathered system-level M&S requirements from multiple stakeholders and began development of BMDS M&S Conceptual Model to be used in future development of the High Run Count Simulation for system sensitivity analysis.</p> <p>-Began development of BMDS M&S Capstone Document and related mission area appendices</p> <p>-Supported revisions to the MDA Integrated Master Test Plan (IMTP)</p> <p>-Executed Technical Assistance (TAA) and International Traffic in Arms Regulation (ITAR) requests to deploy M&S software to allied nations or international organizations for joint missile defense conferences, Warfighter symposia, international wargaming, and diplomatic outreach</p> <p>-Supported Technical Interchange Meetings and the Bilateral Activities via Secure Interactive Link (BASIL) Project Arrangement with the United Kingdom (UK)</p> <p>-Provided System Level Verification, Validation and Accreditation (VV&A) assessment of MDA Models and Simulations for the following events: Technical Assessment 10, Technical Assessment 04, Ground Test, Integrated 04b (GTI-04b), Ground Test, Distributed 04b (GTD-04b), Ground Test, Integrated 04d (GTI-04d) , Ground Test, Focused 04e (GTX-04e) and Assured Response 04d</p> <p>FY 2012 Plans:</p> <p>-Develop and publish the Modeling and Simulations (M&S) Capability Planning Specification (CPS), System Performance Specification (SPS), and System Interface Control Documents (ICD) for the Digital Simulation Architecture (DSA) Framework build 4.0; Phenomenology, Lethality, Environments, Threat, and Communications; and Single Stimulation Framework (SSF) build 2.0</p> <p>-Verify and adjudicate stakeholder Modeling and Simulation need statements, capability statements, and capability packages for Epoch testing and assessment in Performance Assessments (PAs), Ground Test Campaigns, and Assured Response, and Terminal Fury exercises</p>			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Provide updates and expand the over 170 model capability descriptions in the Missile Defense Agency's Modeling and Simulation catalog -Execute traceability between the Modeling and Simulation requirements database and Modeling and Simulation product development -Leverage MDA's system engineering processes to produce mature capability documents and specifications in support of Modeling and Simulation product development to enable Missile Defense Agency ground tests, training events, BMDS exercises, BMDS wargames, BMDS Performance Assessments (PAs), and Missile Defense Agency element integration -Develop and publish Capability Planning Specification (CPS) for element integration, concept analysis, and wargames use cases -Update and publish Capability Planning Specification (CPS) for Performance Assessment (PA), Ground Test, and exercise/training use cases -Develop and publish System Requirements Document (SRD) describing the functional requirements for the capabilities described in the Capability Planning Specification (CPS) documents -Develop and publish Modeling & Simulation (M&S) System Performance Specification (SPS) describing the performance/sufficiency requirements based on the information in the System Requirements Document (SRD) and Capability Planning Specifications -Support the update and publishing of the Integrated Master Test Plan (IMTP) -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 (UK) -Support the system engineering capability trades for the Phased Adaptive Approach (PAA) Phase II <p>FY 2013 Plans: Development:</p> <ul style="list-style-type: none"> -Continue implementation of the final Transition Plan for retirement of the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) frameworks, and assess readiness for a phased Objective Simulation Framework (OSF) introduction into M&S venues -Deploy Build 1 of the Objective Simulation Framework (OSF) to support all M&S Use Cases -Provide integrated Verification, Validation & Accreditation (VV&A) of MDA M&S at the system level for specific events, to include Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and tier one Combatant Command (COCOM) exercises in accordance with events planned per the current approved Integrated Master Test Plan (IMTP) 				
Title: M&S Digital Framework, Simulation, Models		34.683	14.360	16.083
Articles:		5	0	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: A portion of this program content is reported under project MD07 PE 0603881C (\$12.305 million) and MD09 PE 0603892C (\$4.365 million).</p> <p>-Development:</p> <p>-Developed and delivered major releases of M&S digital products in support of MDA`s Phased Adaptive Approach (PAA) Phase I Performance Assessment associated events:</p> <p>-Released Digital Simulation Architecture (DSA) framework v3.0 for use in Technical Assessment 04 (TA04), and future System Post-Flight Reconstructions (SPFRs)</p> <p>-System engineered the next Digital Simulation Architecture (DSA) framework v4.0 release for use in Performance Assessment 04 (PA04)</p> <p>-Released Missile Defense Space warning Tool (MDST) for use in Technical Assessment 04 (TA04) and Warfighter exercises</p> <p>-Provided software support for PATRIOT System Effectiveness Model (PSEM) for use in Technical Assessment 04 (TA04)</p> <p>-Sustainment:</p> <p>-Sustained the Ballistic Missile Defense (BMD) International Simulation (ISIM) and released v7.0 in support of Combatant Command (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations</p> <p>-Maintained the BMDS Discrete Event Simulation (DE SIM) supporting real-time venues including Warfighter exercises, Warfighter Training, Command & Control, Battle Management, and Communications (C2BMC) software Spiral Testing for MDA`s release of C2BMC software v8.x 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>-Completed phase 1 construction of a Digital Event Center to support M&S Events and data evaluation.</p> <p>-Planned, prepared and executed BMDS Model & Simulation Events; a System Level High Fidelity digital Event Technical Assessment 04 (TA04), System Level Post Flight Reconstructions events for Flight Test, Terminal High Altitude Area Defense</p>			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD31: <i>Modeling & Simulation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2011
<p>14 (FTT-14) and planning and preparation for Flight Test, Standard Missile 3 - 15 (FTM-15), and a proof of concept System Pre-Mission Event Flight Test, Standard Missile 3 - 15 (FTM-15)</p> <p>-Procured, installed and maintained Performance Assessment (PA) Simulation ensemble for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL</p> <p>-Conducted Incremental System Requirements Reviews (ISRR) for the digital simulation systems, e.g. Digital Simulation Architecture - Performance (DSA-P), in support of Performance Assessment (PA04)</p> <p>-Integrated, tested, functionally qualified, and delivered end to end BMDS simulations supporting various events (utilizing Digital Simulation Architecture, Missile Defense Space Tool, and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessments (PAs):</p> <p>-Digital Simulation Architecture - Performance (DSA-P) v1.5 in support of Technical Assessment 04 (TA 04) BMDS Phased Adaptive Approach (PAA) Phase 1 Assessment, DSA-P v1.6 in support of Flight Test, Terminal High Altitude Area Defense 14 (FTT-14) System Post Flight Reconstruction, and Digital Simulation Architecture - Performance (DSA-P) v1.4 in support of Flight Test, Standard Missile 3 - 15 (FTM-15)</p> <p>-Initiated integration, testing end to end BMDS simulations supporting various events (utilizing Digital Simulation Architecture, Missile Defense Space Tool, and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessments (PAs):</p> <p>-DSA-P in support of Performance Assessment 04 (PA 04) BMDS PAA Phase 1 Assessment</p> <p>-Developed and deployed additional Performance Assessment (PA) Simulation ensembles in support of M&S development, Integration, and events in the Digital Test and Integration Center (DTIC) and Simulation Execution Center (SEC) in Colorado Springs, CO</p> <p>-Developed and deployed additional Performance Assessment (PA) Simulation ensembles for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL</p> <p>-Provided early warning M&S support for a Joint Integrated Air and Missile Defense Organization sponsored Joint Distributed Engineering Plant Events 10 and 11</p> <p>-Provided early warning M&S support for Warfighter events Assured Response 04x and Global Defender Exercise 04</p> <p>FY 2012 Plans:</p> <p>-Develop and deliver major releases of Modeling & Simulation (M&S) digital products:</p> <p>-Digital Simulation Architecture (DSA) framework for use in Performance Assessments (PAs) Operational Test, real-time venues including Warfighter exercises, Warfighter Training, Command and Control, Battle Management, and Communications (C2BMC) software Spiral Testing for MDA's release of C2BMC v8.x development, and Ground Test campaign</p> <p>-Missile Defense Space warning Tool (models validated space-borne assets of the BMDS) for use in Performance Assessments (PAs) and Warfighter exercises</p> <p>-BMD International Simulation for use in International virtual BMD demonstrations, BMD education, and Warfighter wargames</p>				
				FY 2012
				FY 2013

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>-Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses: -Performance Assessment (PA) Simulation (utilizing Digital Simulation Architecture (DSA), Missile Defense Space Tool (MDST), and Element-provided high-resolution models) to support full-envelope BMDS Performance Assessments (PAs) -Real-time Digital Simulation (utilizing Digital Simulation Architecture (DSA), Missile Defense Space Tool (MDST), and Element-provided medium-resolution models) to support Warfighter exercises, Warfighter Training, Element spiral development, and Ground Test campaign -Operate and maintain software of the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises -Provide software support for Patriot System Effectiveness Model (PSEM) for use in Performance Assessments (PAs) -Control and maintain Performance Assessment (PA) Simulation ensembles for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL</p> <p>FY 2013 Plans: -Development:</p> <p>-Begin migration of Digital Simulation Architecture (DSA) into Objective Simulation Framework (OSF) -Continue requirements management for product development activities (e.g., Element Model integration into OSF's standards-based open architecture) -Sustainment:</p> <p>-Sustain the BMD International Simulation (ISIM) and release v9.0 in support of Combatant Command (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations -Sustain and delivered major releases of M&S digital products in support of MDA's Phased Adaptive Approach -Approach Phase I/II Performance Assessment associated events:</p> <p>-Release DSA framework v4.1 for use in System Post-Flight Reconstruction (SPFR) and special studies -Release Missile Defense Space warning Tool (MDST) for use in Warfighter exercises and in anticipation of Performance Assessment 06 (PA06) -Provide software support for Patriot System Effectiveness Model (PSEM) for use in Performance Assessment 06 (PA06) -Maintain the BMDS Discrete Event Simulation (DE SIM) supporting real-time venues including Warfighter exercises, Warfighter Training, Command and Control, Battle Management, and Communications (C2BMC) software Spiral Testing for MDA's release of C2BMC v8.x development. -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 -Event Integration/Support Operations:</p>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Integrate, test, functionally qualify, and deliver end to end BMDS simulations supporting various events (utilizing Digital Simulation Architecture, Missile Defense Space Tool, and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessment (PAs):</p> <p>-Digital Simulation Architecture-Performance (DSA-P) in support of Performance Assessment 04 (PA 04) BMDS PAA Phase 1 Assessment</p> <p>-DSA-P in support of Flight Test, Ground-based Midcourse 06B (FTG-06B) System Post Flight Reconstruction (SPFR)</p> <p>-DSA-P in support of Flight Test, Operational 1 (FTO-01) System Post Flight Reconstruction (SPFR)</p> <p>-Initiate and continue integration, testing end to end BMDS simulations supporting various events (utilizing Digital Simulation Architecture, Missile Defense Space Tool (MDST), and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessments (PAs):</p> <p>-DSA-P in support of Flight Test, Standard Missile 3-20 Event 2 (FTM-20E2) System Post Flight Reconstruction (SPFR)</p> <p>-Control and maintain Performance Assessment (PA) Simulation ensembles for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL</p> <p>-Control and maintain Performance Assessment (PA) Simulation ensembles in support of M&S development, Integration, and events in the Digital Test and Integration Center (DTIC) and Simulation Execution Center (SEC) in Colorado Springs, CO</p> <p>-Plan , prepare and execute BMDS Model & Simulation Events to include a System Level High fidelity digital event , Two System Post Flight Reconstruction events to support Model Validation of the Hardware-in-the-Loop (HWIL) and digital venues and a System Pre-Mission Event to support a flight test.</p> <p>-Provide early warning support for a Joint Integrated Air and Missile Defense Organization sponsored Joint Distributed Engineering Plant Event and Warfighter event.</p>				
<p>Title: M&S HWIL Framework, Simulations, Models</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: The program content in this project is reported under project MD09 PE 0603892C (\$69.937 million).</p> <p>FY 2012 Plans: A portion of the FY 2012 program content is reported under project MD09 PE 0603892C.</p>		-	9.520	10.663
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Develop and integrate the Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) at COCOM, training, and exercise Host Nation locations -Integrate the BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) with the ARROW Hardware-in-the-Loop (HWIL) facility -Continue integration of the Single Stimulation Framework (SSF) with additional Allied/Coalition elements -Complete Cobra Dane closure interface development -Begin integration of Single Stimulation Framework (SSF) with Upgraded Early Warning Radar (UEWR) Clear Air Force Station (AFS) -Provide for Single Stimulation Framework (SSF) sustainment, maintenance and product support -Deploy and integrate BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) to support Ground Base Mid-Course and BMDS Sensors directorates stand-alone training and the Distributed Multi-Echelon Training System (DMETS) capability -Begin deployment and integration of BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners -Begin installation of BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) software capability and necessary hardware/ maintenance to support a 2nd parallel test string (Ground Test assets only) -Demonstrate initial Open Architecture (OA) redesign capabilities -Deploy and install Single Stimulation Framework (SSF) node in fielded AN/TPY-02 shelter -Combatant Command (COCOM) Exercise (Global Lightning 13) <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Development: -Migrate Hardware-in-the-Loop (HWIL) functionality into the Objective Simulation Framework (OSF) -Continue requirements management for product development activities (e.g., OSF) -Sustainment: -Provide sustainment, maintenance and product support of BMDS Hardware-in-the-Loop (HWIL) stimulation framework--Single Stimulation Framework (SSF) for Elements integration, BMDS ground, flight tests and training and support MDA CONUS and host nation exercises -Provide sustainment, maintenance and product support of BDMS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) to support Ground Base Mid-Course (GM) and BMDS Sensors (SN) directorates stand-alone training and the Distributed Multi-Echelon Training System (DMETS) capability 			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Sustain Single Stimulation Framework (SSF) framework capabilities for GM and SN element framework for Pre-Mission Test (PMT) test support, Countdown training and post flight reconstruction (PFR)</p> <p>-Sustain Single Stimulation Framework (SSF) support to BMDS System Pre-Mission Test (PMT) and Post Flight Reconstruction (PFR) activities</p> <p>-Concept initial Single Stimulation Framework/Objective Simulation Framework (SSF/OSF) Open Architecture redesign capabilities</p> <p>-Event Integration/Support Operations:</p> <p>-Continue incremental deployment and integration of BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) Objective Hardware for MDA Elements and a Releasable configuration for Allies to modernize SSF Interface Unit (SIU) fleet and minimize obsolescence</p> <p>-Begin integration of Optimistic Sensor Model (OSM) integration into Single Stimulation Framework (SSF)</p> <p>-Integrate the BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture</p> <p>-Initiate execution of the Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation</p> <p>-Provide for Single Stimulation Framework (SSF) - Begin development of Real Time, scaled Real Time, non Real Time operational model.</p> <p>-Implement improved Instantaneous Object Processing capabilities in BMDS Ground test</p> <p>-Remove all support for the Missile Defense System Exerciser (MDSE) framework and integrate all Missile Defense System Exerciser (MDSE) mission requirements into Single Stimulation Framework (SSF) contracts and plan for future Objective Simulation Framework (OSF) integration</p> <p>-Define transition plan from Single Stimulation Framework (SSF) contracts to Objective Simulation Framework (OSF) contracts for BMDS ground test and Warfighter use cases</p> <p>-Complete installation of BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) software capability and necessary hardware maintenance (MDA/DTR funded) to support a 2nd parallel test string capability.</p> <p>-Begin execution of Cobra Dane air gap closure interface development</p> <p>-Plan the integration of Single Stimulation Framework (SSF) with Upgraded Early Warning Radar (UEWR) Clear Air Force Station (AFS)</p>			
<p>Title: M&S VV&A and Test Operations</p> <p align="right">Articles:</p> <p>Description: See Description Below</p>	<p>-</p> <p>0</p>	<p>15.002</p> <p>0</p>	<p>-</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p><i>FY 2011 Accomplishments:</i> The program content in this project is reported under project MD09 PE 0603892C (\$38.119 million).</p> <p><i>FY 2012 Plans:</i> -Provide integrated Verification, Validation and Accreditation (VV&A) of MDA Modeling & Simulation (M&S) at the system level for specific events, to include Technical Assessments (TAs), Performance Assessment (PA), Ground Tests that support Ballistic Missile Defense System (BMDS) fielding decisions, and tier one Combatant Command (COCOM) exercises -Develop integrated Verification, Validation and Accreditation (VV&A) event Plans and Reports for Focused Ground Tests, Integrated Ground Tests, Performance Assessments (PAs), and Assured Response exercise -Work closely with Elements, Test Community, System Engineering, and Operational Test Agencies (OTAs) to ensure M&S for each event meet intended uses and objectives, and have proper Verification, Validation and Accreditation (VV&A) documentation and evidence, to include benchmarking/anchoring pedigree -Conduct system-level Verification and Validation (V&V) of threat trajectory and signature; ensure end-to-end environmental implementation is consistent and correct communications and architecture behave properly and interoperability is adequately addressed -Develop and implement Modeling and Simulation (M&S) standards consistent with industry best practices -Develop, implement and configure control of web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure M&S improvement -Lead BMDS Verification, Validation and Accreditation (VV&A) working group to improve Verification, Validation and Accreditation (VV&A) operations and ultimately improve BMDS performance -Develop and implement metrics for system-level M&S to increase efficiencies and effectiveness -Develop model and simulation target requirements to support Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) test conditions</p> <p><i>FY 2013 Plans:</i> FY 2013 Plans have moved to Budget Project MT23 PE 0603890C in accomplishment `M&S VV&A and Test Operations`</p>			
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<i>Title:</i> M&S Core Truth Modeling & Common Threat Engineering (formerly Phenomenology, Lethality, Environment, <i>Articles:</i>	18.264 0	10.045 0	11.250 0
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Description: See Description Below

<i>FY 2011 Accomplishments:</i> -Development:			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Developed capabilities-based and intelligence-credible missile models based on the MDA Threat Systems Engineer specifications -Developed threat trajectories and integrated threat packages to support Modeling & Simulation (M&S) frameworks and execute MDA Integrated Master Test Plan (IMTP) events to include Performance Assessments (PAs), Ground Tests, Operational Tests, Flight Tests and COCOM Exercises -Supported National Air and Space Intelligence Center (NASIC) missile model development initiative to prove concept that intelligence community produced missile models can be integrated in MDA M&S threat production capabilities Threat Modeling Simulation System (TMSS) to support Integrated Master Test Plan (IMTP) events -Initiated several Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Phase I Efforts to address Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) identified deficiencies related to Solid Rocket Motor Thrust Termination Modeling, Advanced Reentry Vehicle and Wake Models, High Speed Rendering of Complex Scenes, and Algorithms for Generating Hardbody Thermal Histories -Initiated several SBIR Phase II Efforts to address Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) identified deficiencies related to Integrated Ultraviolet/Visible/Infrared (UV/VIS/IR) background phenomenology models for radiation transport system trades (Clouds and Terrain), Propulsion Kinetics for Alternate Wavelength Signatures and Enhancements to Continuum Plume Flowfield Models for Transitional Flow Simulations -Sustainment: -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 Mode (RPFM), Plume Simulation (PLUS), Standard Plume Ultraviolet Radiation Code (SPURC), and Fast Line-of-Sight Imagery for Target and Exhaust Plume Signatures (FLITES)) -Supported validation for Optical Signatures Code (OSC) and the plume modeling software tool suite -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 -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 Integrated Master Test Plan (IMTP) events -Conducted requirements management for product development activities (e.g., OSC, OPTISIG, KIDD, PEELS, PEGEM) -Continued to support accreditation for PEELS as engagement lethality modeling tool for Patriot PAC-3, THAAD, and GM -Completed Core Lethality Models (KIDD, PEELS) enhancements to capabilities to model post intercept debris and engagement lethality to ensure BMDS performance may be accurately modeled to Operational Test Agency (OTA) requirements 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Continued Systems Engineering efforts to support integration of all applicable Core Truth Model functions into digital and Hardware-in-the-Loop (HWIL) frameworks -Developed and integrated MDA Threat Systems Engineer specified capabilities-based and intelligence-credible threat models into M&S threat tools such as Threat Modeling Simulation System (TMSS), and TGx -Planned and produced threat trajectory products using M&S threat tool, Threat Modeling Simulation System (TMSS), for Integrated Threat Products (ITPs) -Planned, integrated, produced, and delivered ITPs (threat trajectories and signatures) for the execution of Ground Tests and Performance Assessments/Technical Assessments (PA/TAs) -Planned, integrated, produced, and delivered Integrated Threat Products (ITPs) for the execution of wargames, exercises, Distributed Multi-Echelon Training System (DMETS), and MDA engineering studies -Integrated, produced, and delivered Integrated Threat Products (ITPs) for Flight Tests -Conduct requirements management for product development activities (e.g., OSC, OPTISIG, KIDD, PEELS, PEGEM) -Event Integration/Support Operations: -Planned and produced re-entry vehicle (RV) and kill vehicle (KV) model products for use in M&S lethality tools, Kinetic Impact Debris Distribution (KIDD) and Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS), for Flight Test, Ground Test, Performance Assessments/Technical Assessments (PA/TAs), wargames, and exercises -Product Level Verification, Validation and Accreditation (VV&A): -Conducted requirements management for product VV&A needs (e.g., OSC, OPTISIG, KIDD, PEELS, PEGEM) -Conducted IV&V on Core Lethality Models (PEELS, KIDD) product modifications -Developed missile model and integrated threat package Verification & Validation (V&V) reports to support IMTP events <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Plan and produce threat trajectory products using M&S threat tool, Threat Modeling Simulation System (TMSS), for Integrated Threat Plans (ITPs) -Plan, integrate, produce, and deliver Integrated Threat Products (ITPs) (threat trajectories and signatures) for the execution of Ground Tests and Performance Assessments/Technical Assessments (PA/TAs) -Plan, integrate, produce, and deliver Integrated Threat Products (ITPs) for the execution of wargames, exercises, Distributed Multi-Echelon Training System (DMETS), and MDA engineering studies -Integrate, produce, and deliver Integrated Threat Products (ITPs) for Flight Tests -Complete integration of Environment modeling capabilities to provide common and consistent environmental data to digital system-level M&S events 			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Complete integration of remaining Phenomenology Lethality Environment Threat - Communication (PLET-C) functions (e.g., phenomenology, lethality, and threat) to provide common and consistent data to digital system-level M&S events</p> <p>-Complete Systems Engineering efforts to support integration of all PLET-C functions into Hardware-in-the-Loop (HWIL) frameworks</p> <p>-Begin integration efforts to provide Phenomenology Lethality Environment Threat - Communication (PLET-C) functionality to Hardware-in-the-Loop (HWIL) networks</p> <p>-Develop model and simulation target requirements to support Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) test conditions</p> <p>FY 2013 Plans:</p> <p>-Development:</p> <p>-Conduct requirements management for product development activities (e.g., Objective Simulation Framework (OSF))</p> <p>-Develop capabilities-based and intelligence-credible missile models based on the MDA Threat Systems Engineer specifications</p> <p>-Initiate several Small Business Innovative Research (SBIR) Phase II Efforts to address Critical Engagement Conditions (CEC) and Empirical Measurement Events (EMEs) identified deficiencies related to Characterization and Incorporation of Vernier Engines within the Plume Modeling Process, Advanced Particle Treatment in Modeling Rocket Exhaust Plumes and Star Background Modeling</p> <p>-Initiate New phase I Small Business Innovative Research (SBIR) topics to address Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs).</p> <p>-Sustainment:</p> <p>-Conduct requirements management for product development activities (e.g., Optical Signatures Code (OSC), Optical Signatures In-Line Generator (OPTISIG), Kinetic Impact Debris Distribution (KIDD), Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS), Post Engagement Ground Effects Model (PEGEM))</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>-Assist in the integration and support of endgame lethality utilizing PEELS tool into the modeling frameworks</p> <p>-Enhance Core Lethality Models (KIDD, PEELS) capabilities to model post intercept debris and engagement lethality to ensure BMDS performance may be accurately modeled to Operational Test Agency (OTA) requirements.</p>			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Provide M&S software maintenance and sustainment for the Threat Modeling Simulation System (TMSS) threat production architecture (e.g. integration of new/updated missile models and threat system capabilities) to support Integrated Master Test Plan (IMTP) threat production -Provide M&S software maintenance and sustainment for the TGx trajectory generator analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) to support IMTP events -Initiate Systems Engineering efforts to support integration of all applicable Core Truth Model functions into Objective Simulation Framework (OSF) framework			
Accomplishments/Planned Programs Subtotals	61.456	56.617	46.608

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	Continuing	Continuing

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

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD31: <i>Modeling & Simulation</i>

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). In addition, in FY 2012 the Objective Simulation Framework (OSF) contract will be awarded. This full-and-open competition will unify M&S framework development efforts to allow seamless end-to-end representation of the BMDS, across HWIL and Digital domains, to support all Use Cases at substantial savings to the Agency.

E. Performance Metrics

N/A

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling and Simulation (M&S) Capability Development M&S Integrated Master Plan	C/FFP	ManTech:CO	2.155	1.945	Nov 2011	2.178	Oct 2012	-		2.178	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Capability Development M&S Configuration & Risk Management	C/FFP	ManTech:CO	4.280	1.951	Nov 2011	2.185	Oct 2012	-		2.185	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Capability Development M&S Product Capability Documents	C/FFP	Boeing:AL	11.640	3.794	Nov 2011	4.249	Oct 2012	-		4.249	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models Integrated M&S Capability for Performance Assessment	C/CPAF	Northrop Grumman:CO	33.067	10.429	Nov 2011	11.680	Oct 2012	-		11.680	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models Integrated M&S Capability for International Programs	C/CPAF	Northrop Grumman:CO	33.998	3.931	Dec 2011	4.403	Oct 2012	-		4.403	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models Single Stimulation Framework & Objective Simulation Framework Product Development & Deployment	C/CPAF	Boeing:AL	44.981	9.520	Nov 2011	10.663	Oct 2012	-		10.663	Continuing	Continuing	Continuing
M&S Core Truth Modeling & Common Threat Engineering (formerly Phenomenology, Lethality, Environment, Trajectory Generator eXternal)	C/CPAF	Northrop Grumman:CO	4.719	2.601	Nov 2011	2.913	Oct 2012	-		2.913	Continuing	Continuing	Continuing
M&S Core Truth Modeling & Common Threat Engineering (formerly Phenomenology,	C/CPAF	Northrop Grumman:CO	2.149	0.300	Nov 2011	0.336	Oct 2012	-		0.336	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract	
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost		
Lethality, Environment, Communication Network Model Development														
M&S Core Truth Modeling & Common Threat Engineering (formerly Phenomenology, Lethality, Environment, PLET-C Integration, Assembly, Test & Checkout)	C/CPAF	Northrop Grumman:CO	2.955	0.475	Nov 2011	0.532	Oct 2012	-		0.532	Continuing	Continuing	Continuing	
M&S Core Truth Modeling & Common Threat Engineering (formerly Phenomenology, Lethality, Environment, Threat Modeling Simulation System)	C/CPAF	Northrop Grumman:CO	10.274	2.627	Nov 2011	2.942	Oct 2012	-		2.942	Continuing	Continuing	Continuing	
M&S Core Truth Modeling & Common Threat Engineering (formerly Phenomenology, Lethality, Environment, Lethality/Phenomenology Modeling)	MIPR	AMRDEC:AL	17.889	4.042	Dec 2011	4.527	Oct 2012	-		4.527	Continuing	Continuing	Continuing	
Subtotal			168.107	41.615		46.608		-		46.608				

Remarks
N/A

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

Remarks
N/A

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
M&S VV&A and Test Operations Performance Assessment VV&A	C/CPAF	Northrop Grumman:CO	3.395	8.195	Dec 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing	
M&S VV&A and Test Operations Ground Test VV&A	C/CPAF	Northrop Grumman:CO	1.221	3.200	Dec 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing	
M&S VV&A and Test Operations M&S Accreditation	C/CPAF	Northrop Grumman:CO	3.683	3.607	Dec 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing	
Subtotal			8.299	15.002		-		-		-				

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	176.406	56.617		46.608		-		46.608			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Assured Response (AR-04D) 2Q2011		▲																										
Assured Response (AR-04E) 3Q2013											△																	
Assured Response (AR-04X) 1Q2011	▲																											
Assured Response (AR-06) 3Q2015																												
Combatant Command Exercise (Global Lightning 11) 3Q2011			▲																									
Combatant Command Exercise (Global Lightning 12) 3Q2012							△																					
Combatant Command Exercise (Global Lightning 13) 3Q2013											△																	
Combatant Command Exercise (Global Lightning 14) 3Q2014														△														
Combatant Command Exercise (Global Lightning 15) 3Q2015																												
Combatant Command Exercise (Global Thunder 11) 1Q2011	▲																											
Combatant Command Exercise (Global Thunder 12) 1Q2012						▲																						
Combatant Command Exercise (Global Thunder 13) 2Q2013											△																	
Combatant Command Exercise (Global Thunder 14) 2Q2014														△														
Combatant Command Exercise (Global Thunder 15) 2Q2015																												
Combatant Command Exercise (Terminal Fury 11) 3Q2011			▲																									
Combatant Command Exercise (Terminal Fury 12) 3Q2012							△																					
Combatant Command Exercise (Terminal Fury 13) 3Q2013											△																	
Combatant Command Exercise (Terminal Fury 14) 3Q2014														△														
Combatant Command Exercise (Terminal Fury 15) 3Q2015																												
Combatant Command Exercise (Vigilant Shield 11) 1Q2011	▲																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Combatant Command Exercise (Vigilant Shield 12) 1Q2012				▲																								
Combatant Command Exercise (Vigilant Shield 13) 1Q2013								△																				
Combatant Command Exercise (Vigilant Shield 14) 1Q2014												△																
Combatant Command Exercise (Vigilant Shield 15) 1Q2015																△												
Congressional Wargame 2Q2011		▲																										
Congressional Wargame 2Q2012						△																						
Congressional Wargame 2Q2013									△																			
Congressional Wargame 2Q2014													△															
Congressional Wargame 2Q2015																△												
Digital Simulation Architecture (DSA) Performance v1.5 4Q2011				▲																								
Digital Simulation Architecture (DSA) Performance v2.0 1Q2013									△																			
Digital Simulation Architecture (DSA) Performance v3.0 1Q2015																△												
Digital Simulation Architecture (DSA) Performance v4.0 3Q2016																						△						
Digital Simulation Architecture (DSA) v2.1.1 1Q2011	▲																											
Digital Simulation Architecture (DSA) v3.1 3Q2011			▲																									
Digital Simulation Architecture (DSA) v3.2 1Q2012				▲																								
Digital Simulation Architecture (DSA) v4.0 3Q2012							△																					
Digital Simulation Architecture (DSA) v5.0 3Q2013											△																	
Global Defender (GDEx04d) 4Q2011				▲																								
Global Defender (GDEx04e(IT)) 4Q2012								△																				
Global Defender (GDEx04e) 1Q2014													△															
Global Defender (GDEx06) 4Q2015																							△					

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				
	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 04 (GTD-04) Developmental Test 4Q2013																													
Ground Test, Distributed 04 (GTD-04) Operational Test 4Q2013																													
Ground Test, Distributed 04 (GTD-04) Warfighter Trial Period 1Q2014																													
Ground Test, Distributed 04 (GTD-04b) 2Q2011		▲																											
Ground Test, Distributed 04 (GTD-04d) (Part 1) 4Q2011				▲																									
Ground Test, Distributed 04 (GTD-04d) (Part 2) 1Q2012					▲																								
Ground Test, Distributed 06 (GTD-06) Developmental Test 3Q2015																													
Ground Test, Distributed 06 (GTD-06) Operational Test 4Q2015																													
Ground Test, Focused 04e (GTX-04e) 2Q2012								▲																					
Ground Test, Focused 06 (GTX-06) 2Q2014																													
Ground Test, Focused 06 (GTX-06) System Post-Ground Test Reconstruction 3Q2014																													
Ground Test, Focused 07a (GTX-07a) 3Q2016																													
Ground Test, Focused 07b (GTX-07b) 4Q2016																													
Ground Test, Focused 07b (GTX-07b) System Post-Ground Test Reconstruction 1Q2017																													
Ground Test, Integrated 04 (GTI-04) (ISR) FY 2012																													
Ground Test, Integrated 04 (GTI-04) Operational Test 3Q2013																													
Ground Test, Integrated 04d (GTI-04d) 3Q2011																													
Ground Test, Integrated 04e (GTI-04e) Developmental Test 3Q2013																													
Ground Test, Integrated 04e (GTI-04e) Verification, Validation and Accreditation 1Q2013																													
Ground Test, Integrated 06 (GTI-06) Developmental Test 3Q2015																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 O6 (GTI-O6) Operational Test 3Q2015																			△									
Ground Test, Integrated O6 (GTI-O6) Verification, Validation and Accreditation 4Q2014														△														
International Simulation v10.0 2Q2014														△														
International Simulation v11.0 2Q2015																				△								
International Simulation v7.0 2Q2011		▲																										
International Simulation v8.0 2Q2012						△																						
International Simulation v9.0 2Q2013										△																		
Missile Defense Space warning Tool (MDST) v14.0 2Q2011		▲																										
Missile Defense Space warning Tool (MDST) v15.0 2Q2012						△																						
Missile Defense Space warning Tool (MDST) v16.0 2Q2013											△																	
Missile Defense Space warning Tool (MDST) v17.0 2Q2014															△													
Missile Defense Space warning Tool (MDST) v18.0 2Q2015																					△							
Multi-National Missile Defense Conference Wargame 4Q2011				▲																								
Multi-National Missile Defense Conference Wargame 4Q2012								△																				
Multi-National Missile Defense Conference Wargame 4Q2013													△															
Multi-National Missile Defense Conference Wargame 4Q2014																△												
Multi-National Missile Defense Conference Wargame 4Q2015																						△						
National Missile Defense Conference Wargame 2Q2011		▲																										
National Missile Defense Conference Wargame 2Q2012							△																					
National Missile Defense Conference Wargame 2Q2013											△																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
National Missile Defense Conference Wargame 2Q2014													△															
National Missile Defense Conference Wargame 2Q2015																△												
Objective Simulation Framework (OSF) v1.0 3Q2013												△																
Objective Simulation Framework (OSF) v2.0 4Q2014														△														
Objective Simulation Framework (OSF) v3.0 4Q2015																			△									
Objective Simulation Framework (OSF) v4.0 4Q2016																									△			
Performance Assessment (PA04) 4Q2013													△															
Performance Assessment (PA06) 4Q2015																			△									
Single Stimulation Framework (SSF 1.1.2) 2Q2011		▲																										
Single Stimulation Framework (SSF 1.1.3) 3Q2011			▲																									
Single Stimulation Framework (SSF 1.1.5) 4Q2011				▲																								
Single Stimulation Framework (SSF) v1.1.5 (2nd HWIL string) 2Q2012								△																				
Single Stimulation Framework (SSF) v1.1.6 2Q2012								△																				
Single Stimulation Framework (SSF) v1.1.7 4Q2012												△																
Technical Assessment (TA04) 4Q2011				▲																								
Technical Assessment (TA07) 4Q2016																										△		

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Assured Response (AR-04D) 2Q2011	2	2011	2	2011
Assured Response (AR-04E) 3Q2013	3	2013	3	2013
Assured Response (AR-04X) 1Q2011	1	2011	1	2011
Assured Response (AR-06) 3Q2015	3	2015	3	2015
Combatant Command Exercise (Global Lightning 11) 3Q2011	3	2011	3	2011
Combatant Command Exercise (Global Lightning 12) 3Q2012	3	2012	3	2012
Combatant Command Exercise (Global Lightning 13) 3Q2013	3	2013	3	2013
Combatant Command Exercise (Global Lightning 14) 3Q2014	3	2014	3	2014
Combatant Command Exercise (Global Lightning 15) 3Q2015	3	2015	3	2015
Combatant Command Exercise (Global Thunder 11) 1Q2011	1	2011	1	2011
Combatant Command Exercise (Global Thunder 12) 1Q2012	1	2012	1	2012
Combatant Command Exercise (Global Thunder 13) 2Q2013	2	2013	2	2013
Combatant Command Exercise (Global Thunder 14) 2Q2014	2	2014	2	2014
Combatant Command Exercise (Global Thunder 15) 2Q2015	2	2015	2	2015
Combatant Command Exercise (Terminal Fury 11) 3Q2011	3	2011	3	2011
Combatant Command Exercise (Terminal Fury 12) 3Q2012	3	2012	3	2012
Combatant Command Exercise (Terminal Fury 13) 3Q2013	3	2013	3	2013
Combatant Command Exercise (Terminal Fury 14) 3Q2014	3	2014	3	2014
Combatant Command Exercise (Terminal Fury 15) 3Q2015	3	2015	3	2015
Combatant Command Exercise (Vigilant Shield 11) 1Q2011	1	2011	1	2011
Combatant Command Exercise (Vigilant Shield 12) 1Q2012	1	2012	1	2012
Combatant Command Exercise (Vigilant Shield 13) 1Q2013	1	2013	1	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Combatant Command Exercise (Vigilant Shield 14) 1Q2014	1	2014	1	2014
Combatant Command Exercise (Vigilant Shield 15) 1Q2015	1	2015	1	2015
Congressional Wargame 2Q2011	2	2011	2	2011
Congressional Wargame 2Q2012	2	2012	2	2012
Congressional Wargame 2Q2013	2	2013	2	2013
Congressional Wargame 2Q2014	2	2014	2	2014
Congressional Wargame 2Q2015	2	2015	2	2015
Digital Simulation Architecture (DSA) Performance v1.5 4Q2011	4	2011	4	2011
Digital Simulation Architecture (DSA) Performance v2.0 1Q2013	1	2013	1	2013
Digital Simulation Architecture (DSA) Performance v3.0 1Q2015	1	2015	1	2015
Digital Simulation Architecture (DSA) Performance v4.0 3Q2016	3	2016	3	2016
Digital Simulation Architecture (DSA) v2.1.1 1Q2011	1	2011	1	2011
Digital Simulation Architecture (DSA) v3.1 3Q2011	3	2011	3	2011
Digital Simulation Architecture (DSA) v3.2 1Q2012	1	2012	1	2012
Digital Simulation Architecture (DSA) v4.0 3Q2012	3	2012	3	2012
Digital Simulation Architecture (DSA) v5.0 3Q2013	3	2013	3	2013
Global Defender (GDEx04d) 4Q2011	4	2011	4	2011
Global Defender (GDEx04e(IT)) 4Q2012	4	2012	4	2012
Global Defender (GDEx04e) 1Q2014	1	2014	1	2014
Global Defender (GDEx06) 4Q2015	4	2015	4	2015
Ground Test, Distributed 04 (GTD-04) Developmental Test 4Q2013	4	2013	4	2013
Ground Test, Distributed 04 (GTD-04) Operational Test 4Q2013	4	2013	4	2013
Ground Test, Distributed 04 (GTD-04) Warfighter Trial Period 1Q2014	1	2014	1	2014
Ground Test, Distributed 04 (GTD-04b) 2Q2011	2	2011	2	2011
Ground Test, Distributed 04 (GTD-04d) (Part 1) 4Q2011	4	2011	4	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Distributed 04 (GTD-04d) (Part 2) 1Q2012	1	2012	1	2012
Ground Test, Distributed 06 (GTD-06) Developmental Test 3Q2015	3	2015	3	2015
Ground Test, Distributed 06 (GTD-06) Operational Test 4Q2015	4	2015	4	2015
Ground Test, Focused 04e (GTX-04e) 2Q2012	2	2012	2	2012
Ground Test, Focused 06 (GTX-06) 2Q2014	2	2014	2	2014
Ground Test, Focused 06 (GTX-06) System Post-Ground Test Reconstruction 3Q2014	3	2014	3	2014
Ground Test, Focused 07a (GTX-07a) 3Q2016	3	2016	3	2016
Ground Test, Focused 07b (GTX-07b) 4Q2016	4	2016	4	2016
Ground Test, Focused 07b (GTX-07b) System Post-Ground Test Reconstruction 1Q2017	1	2017	1	2017
Ground Test, Integrated 04 (GTI-04) (ISR) FY 2012	1	2012	4	2012
Ground Test, Integrated 04 (GTI-04) Operational Test 3Q2013	3	2013	3	2013
Ground Test, Integrated 04d (GTI-04d) 3Q2011	3	2011	3	2011
Ground Test, Integrated 04e (GTI-04e) Developmental Test 3Q2013	3	2013	3	2013
Ground Test, Integrated 04e (GTI-04e) Verification, Validation and Accreditation 1Q2013	1	2013	1	2013
Ground Test, Integrated 06 (GTI-06) Developmental Test 3Q2015	3	2015	3	2015
Ground Test, Integrated 06 (GTI-06) Operational Test 3Q2015	3	2015	3	2015
Ground Test, Integrated 06 (GTI-06) Verification, Validation and Accreditation 4Q2014	4	2014	4	2014
International Simulation v10.0 2Q2014	2	2014	2	2014
International Simulation v11.0 2Q2015	2	2015	2	2015
International Simulation v7.0 2Q2011	2	2011	2	2011
International Simulation v8.0 2Q2012	2	2012	2	2012
International Simulation v9.0 2Q2013	2	2013	2	2013
Missile Defense Space warning Tool (MDST) v14.0 2Q2011	2	2011	2	2011
Missile Defense Space warning Tool (MDST) v15.0 2Q2012	2	2012	2	2012
Missile Defense Space warning Tool (MDST) v16.0 2Q2013	2	2013	2	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Missile Defense Space warning Tool (MDST) v17.0 2Q2014	2	2014	2	2014
Missile Defense Space warning Tool (MDST) v18.0 2Q2015	2	2015	2	2015
Multi-National Missile Defense Conference Wargame 4Q2011	4	2011	4	2011
Multi-National Missile Defense Conference Wargame 4Q2012	4	2012	4	2012
Multi-National Missile Defense Conference Wargame 4Q2013	4	2013	4	2013
Multi-National Missile Defense Conference Wargame 4Q2014	4	2014	4	2014
Multi-National Missile Defense Conference Wargame 4Q2015	4	2015	4	2015
National Missile Defense Conference Wargame 2Q2011	2	2011	2	2011
National Missile Defense Conference Wargame 2Q2012	2	2012	2	2012
National Missile Defense Conference Wargame 2Q2013	2	2013	2	2013
National Missile Defense Conference Wargame 2Q2014	2	2014	2	2014
National Missile Defense Conference Wargame 2Q2015	2	2015	2	2015
Objective Simulation Framework (OSF) v1.0 3Q2013	3	2013	3	2013
Objective Simulation Framework (OSF) v2.0 4Q2014	4	2014	4	2014
Objective Simulation Framework (OSF) v3.0 4Q2015	4	2015	4	2015
Objective Simulation Framework (OSF) v4.0 4Q2016	4	2016	4	2016
Performance Assessment (PA04) 4Q2013	4	2013	4	2013
Performance Assessment (PA06) 4Q2015	4	2015	4	2015
Single Stimulation Framework (SSF 1.1.2) 2Q2011	2	2011	2	2011
Single Stimulation Framework (SSF 1.1.3) 3Q2011	3	2011	3	2011
Single Stimulation Framework (SSF 1.1.5) 4Q2011	4	2011	4	2011
Single Stimulation Framework (SSF) v1.1.5 (2nd HWIL string) 2Q2012	2	2012	2	2012
Single Stimulation Framework (SSF) v1.1.6 2Q2012	2	2012	2	2012
Single Stimulation Framework (SSF) v1.1.7 4Q2012	4	2012	4	2012
Technical Assessment (TA04) 4Q2011	4	2011	4	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Technical Assessment (TA07) 4Q2016	4	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD32: <i>Quality, Safety, and Mission Assurance</i>	27.476	33.045	34.388	-	34.388	31.454	32.477	35.097	35.254	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

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 Review Boards) to ensure mission assurance principles are consistently implemented across the Ballistic Missile Defense System (BMDS). Quality, Safety, and 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.

Quality:

Provide 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 of 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.

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
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safety of the civilian, contractor and military workforce. Quality, Safety, and Assurance 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 Assurance verifies that all systems are functioning and tracking against actual verified targets and that all associated processes and procedures are strictly followed.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Quality, Safety & Mission Assurance</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Quality:</p> <p>Provided non-advocate independent quality oversight/support to Missile Defense Agency via key engineering and configuration management forums Performed configuration management verification and reconciliation for all major flight and ground test assets Ensured strict process control over integration for all major flight and ground tests Identified and resolved system and/or assembly incompatibilities, non-conformances, inadequate requirement definition, insufficient requirement traceability, process adherences, and design, manufacturing, test, and quality practices</p> <p>Performed sub tier supplier quality checklist assessments to promote first time quality and continued reliability growth</p> <p>Safety:</p> <p>Maintained on-site safety oversight at key suppliers and Government facilities Conducted safety risk assessments and audits per Department of Defense standards practice for system safety, of all test and operational systems to ensure catastrophic risks remain improbable Conducted system analysis/assessments such as reliability prediction analysis, failure modes and effects criticality analysis, safety hazards analysis Performed hazard risk assessments and managed the BMDS safety hazard tracking system Provided technical leadership and support for Program insensitive munitions and hazard classification activities</p> <p>Mission Assurance:</p>	<p>27.476</p> <p>0</p>	<p>33.045</p> <p>0</p>	<p>34.388</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Provided on site technical (mission assurance) experts at contractor facilities to ensure root cause and corrective action for anomalies and to continually promote industry best practices for design, manufacturing and test</p> <p>Placed acquisition requirements for design, manufacturing and test on all contracts</p> <p>Placed acquisition requirements for Parts, Materials and Processes on all contracts ensuring the greatest reliability for electronic piece parts</p> <p>Performed non-conformance reporting, tracking, and mitigation for all major flight and ground tests Provided technical expertise in internal top level decision technical meetings and identified and determined if a mission assurance/safety/quality subject was properly represented and/or needed to be elevated to the Director Conducted mission assurance audits as necessary at mission critical supplier sites</p> <p>Performed in-depth pedigree reviews to support failure investigations, investigating verification of critical characteristics</p> <p>BMDS Safety Officers (BSOs):</p> <p>Performed 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 Performed monitoring and tracking of non-conformance behavior of the operational system. Coordinated with Warfighter and Quality, Safety, and Mission Assurance on proper root cause and resolution of all anomalies.</p> <p>MDA Parts and Materials Program:</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 Parts 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 identified part obsolescence issues</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Acquisition Support:</p> <p>Ensured all new acquisitions were in compliance with the MDA Assurance Provisions (MAP), the MDA Parts, Materials and Processes Assurance Provisions (PMAP) and all applicable Defense Federal Acquisition Regulation (DFAR), Federal Acquisition Regulation (FAR), and clauses regarding quality, safety and mission assurance Updated the Missile Defense Agency Assurance Provisions (MAP) document to incorporate design, test, manufacturing, quality, safety, and mission assurance lessons learned to further improve acquisition requirements Improved MDA's acquisition strategy through participation in the definition and determination of all Award Fee Boards</p> <p>Technical Assistance to MDA Elements:</p> <p>Performed independent/non-advocated reviews, such as design certification, pedigree, failure, preliminary design, critical design and technical interchange reviews and ensured compliance with industry best practices Provided mission assurance support to major failure review boards and ensured comprehensive mitigation strategies for operational assets were employed Provided Ground-Based Midcourse Defense (GMD) with Navy quality expertise for Sea-Based X-Band radar (SBX) operations. This included an MDA Assurance Representative (MAR) on board the SBX vessel at all times Verified robust Program controls were in place for general housekeeping and quality assurance practices including, but not limited to, foreign object debris, electrostatic discharge and contamination control. These measures addressed areas known to impact BMDS reliability.</p> <p>Intra-Agency & Industry Activities:</p> <p>Participated in the Defense Standardization Board and ensured that MDA had an equal voice in the specification and standard requirements used across the Department of Defense (DoD) Initiated and lead quality, safety and mission assurance forums which obtained lessons learned and understanding/promoting new requirements or methods</p> <p>Provided to the DoD's anti-counterfeit working group expertise to promote the elimination of counterfeit parts throughout the DoD supply chain</p>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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Safety and Occupational Health:

Ensured compliance with DoD Safety and Occupational Health regulations and requirements
 Performed all required Occupational Safety and Health Inspections of MDA facilities which included those in the National Capital Region, Huntsville, Al, Colorado, Vandenberg Air Force Base and Dahlgren, VA.
 Responded to all reports of incidents effecting the health and safety of MDA employees.

FY 2012 Plans:
 Quality:

Provide non-advocate independent quality oversight/support to Missile Defense Agency key engineering and configuration management forums
 Perform configuration management verification and reconciliation for all major flight and ground test assets
 Maintain process control over integration delivery and conduct of all major flight and ground tests
 Work with Defense Contract Management Agency (DCMA) to create a DoD supplier database for assessing supplier performance
 Develop Quality, Safety, and Mission Assurance (QSMA) acquisition & award fee language for consistent application across MDA

Safety:

Maintain on-site safety oversight at key suppliers and Government facilities
 Conduct safety risk assessments per The Department of Defense Standards Practice for System Safety, of all test and operational systems to ensure catastrophic risks remain improbable
 Conduct system analysis/assessments such as reliability prediction analysis, failure modes and effects criticality analysis, safety hazards analysis etc., to lower flight and operational system risks

Mission Assurance:

Perform non-conformance reporting, tracking, and migration for all major flight and ground tests
 Provide technical expertise in internal Top Level Decision technical meetings to identify and determine if a mission assurance/safety/quality subject is properly represented and/or needs to be elevated to the Director

FY 2011	FY 2012	FY 2013

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Perform mission assurance audits, production readiness assessments, pedigree reviews and facility assessments at mission critical suppliers, including sub-tier suppliers.</p> <p>BMDS Safety Officers (BSOs):</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 system. Coordinate with Warfighter and Quality, Safety, and Mission Assurance on proper root cause and resolution of all anomalies</p> <p>MDA Parts and Materials Program:</p> <p>Enhance BMDS reliability through the following activities: 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</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 (PMAP) and all applicable Defense Federal Acquisition Regulation (DFAR), Federal Acquisition Regulation (FAR), and clauses regarding quality, safety and mission assurance Update the MAP/PMAP to incorporate the latest design, test manufacturing, quality, safety and mission assurance methods to 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>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<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 programs 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 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 & Lead quality, safety and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods</p> <p>Safety and Occupational Health:</p> <p>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</p> <p>FY 2013 Plans: Quality:</p> <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>			
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<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 reliability prediction analysis, failure modes and effects criticality analysis, safety hazards analysis etc., to lower flight and operational system risks</p> <p>Mission Assurance:</p> <p>Provide the Missile Defense Agency Director non-advocate, independent technical assessments on system, subsystem and component design, manufacturing and test activities in support of operational deployment and flight test activities Provide non-advocate technical support to Missile Defense Agency and Program risk boards, configuration control boards, technical interchange meetings and failure review boards Conduct Mission Assurance audits throughout the Missile Defense Agency's supply chain Provide in-plant Mission Assurance and Quality Representatives at 23 Mission Critical Suppliers</p> <p>BMDS Safety Officers (BSOs):</p> <p>Provide 24 hours a day, 7 days a week, 365 days a year safety monitoring of operational and test systems to ensure safe transition between test and operations Monitor and track non-conformance behavior of the operational and flight test systems Perform software and hardware configuration verification along with supporting the Warfighter to asset management Provide safety support for Eastern, Western and Pacific Range activities such as safety training and certification</p> <p>MDA Parts and Materials Program:</p> <p>Enhance BMDS reliability through the following activities:</p> <p>Enforce Program compliance to the Missile Defense Agency Part, Material and Processes Assurance Provisions (PMAP) Provide a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>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 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 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</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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	27.476	33.045	34.388

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing

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), Advisory and Assistance Services (A&AS), and Industry.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Quality, Safety & Mission Assurance Agency Safety & Occupational Health 1	MIPR	MDA QS:AL, CO, AK, DC	0.879	-	Oct 2011	0.361	Oct 2012	-		0.361	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS System Safety (Safety Hazard Analysis & Tracking) - MIPR	MIPR	MDA QS:AL, AK, DC	2.824	0.100	Oct 2011	0.361	Oct 2012	-		0.361	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance MDIOC Quality, Safety & Mission Assurance (QSMA)	C/IDIQ	APT, INC.:AL	2.870	0.968	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Mission Assurance Agency Operations (Supplier Mission Assurance/ Tech Experts)	C/IDIQ	APT, INC.:AL	8.409	5.478	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Quality support, requirements, MAP, Metrics	C/IDIQ	AI SOLUTIONS, INC.:AL; FL; MD	3.004	2.319	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Supplier Quality Support - MDA Assurance Reqs (MARS)	MIPR	MDA QS:CO,CA,MD,UT,FL,MO,AK,AL,NJ,AZ,HI,MA,AR	4.824		Oct 2011	-		-		-	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Quality, Safety & Mission Assurance Quality, Safety & Mission Assurance Agency Parts and Materials Program	MIPR	MDA QS; Crane:AL, IN	3.140	1.370	Oct 2011	1.564	Oct 2012	-		1.564	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDs Quality Assurance support, Auditing, non-conformance reporting, MAP, metrics	MIPR	MDA QS; Corona:AL, CA	6.496	0.858	Oct 2011	3.184	Oct 2012	-		3.184	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDs Mission Assurance Agency Operations (Supplier Mission Assurance/ Tech Experts)	MIPR	MDA QS; Aerospace:AL, CA	5.395	2.609	Oct 2011	2.858	Oct 2012	-		2.858	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDs System Safety (Safety Hazard Analysis & Tracking) - IDIQ	C/IDIQ	APT, INC.:AL	1.716	1.731	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Mission Assurance Tech Experts	C/IDIQ	APT, INC.:AL	1.818	1.459	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance HQ & Core Management	C/CPFF	SRS:AL	1.924	0.138	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance HQ & Core Management 1	MIPR	MDA QS:AL	0.225	0.230	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Agency Safety & Occupational Health 2	C/CPFF	APT, INC.:AL	-	-		0.559	Oct 2012	-		0.559	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDs System Safety (Safety Hazard Analysis & Tracking)	C/CPFF	APT, INC.:AL	-	-		1.584	Oct 2012	-		1.584	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Quality, Safety & Mission Assurance BMDS Quality Assurance support, Auditing, non-conformance reporting, MAP, metrics	C/CPFF	AIS:MD	-	-		1.662	Oct 2012	-		1.662	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Quality Assurance support, Auditing, non-conformance reporting, MAP, metrics 1	MIPR	AMRDEC:AL	-	-		0.322	Oct 2012	-		0.322	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Supplier on-site support	C/CPFF	APT, INC.:AL	-	-		1.769	Oct 2012	-		1.769	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Supplier on-site support 1	MIPR	AMRDEC:AL	-	-		0.464	Oct 2012	-		0.464	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Mission Assurance Agency Operations (Supplier Mission Assurance/ Tech Experts)	C/CPFF	SRS:AL	-	-		1.316	Oct 2012	-		1.316	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Mission Assurance Agency Operations (Supplier Mission Assurance/ Tech Experts) 1	C/CPFF	APT, INC.:AL	-	-		4.130	Oct 2012	-		4.130	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Mission Assurance Agency Operations (Supplier Mission Assurance/ Tech Experts) 2	C/CPFF	AIS:MD	-	-		0.630	Oct 2012	-		0.630	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance BMDS Mission Assurance Agency Operations	MIPR	AMRDEC:AL	-	-		0.209	Oct 2012	-		0.209	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
(Supplier Mission Assurance/ Tech Experts) 3													
Quality, Safety & Mission Assurance Parts, Materials and Processes (PMP) Program	MIPR	AMRDEC:AL	-	-		0.545	Oct 2012	-		0.545	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Parts, Materials and Processes (PMP) Program 1	C/CPFF	APT, INC:AL	-	-		0.730	Oct 2012	-		0.730	Continuing	Continuing	Continuing
Subtotal			43.524	17.260		22.248		-		22.248			

Remarks

N/A

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

Remarks

N/A

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Quality, Safety & Mission Assurance Quality, Safety & Mission Assurance HQ & Core Management (MDA CIV)	Allot	MDA QS:AL, VA, MD, CA, AZ, HI, AK, MA, NJ, FL, AR, UT	12.879	12.841	Oct 2011	9.756	Oct 2012	-		9.756	Continuing	Continuing	Continuing

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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Quality, Safety & Mission Assurance Quality, Safety & Mission Assurance Operations Support (Travel/PCS/BB)	MIPR	MDA QS:AL, CO, AK, DC, VA	5.662	2.944	Oct 2011	2.384	Oct 2012	-		2.384	Continuing	Continuing	Continuing
Subtotal			18.541	15.785		12.140		-		12.140			

Remarks
N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	62.065	33.045	34.388	-	34.388			

Remarks
NA

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	25.495	56.606	16.384	-	16.384	15.454	16.109	17.419	18.019	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

FY 2012 increase of \$41.968 million as directed by the Consolidated Appropriation Act of FY 2012 (Public Law 112-74), to transfer Program Wide Support from BMDS Test and Targets PE 0603888C (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). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (EA) locations (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	25.495	56.606	16.384
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	25.495	56.606	16.384

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603890C: <i>BMD Enabling Programs</i>	MD40: <i>Program-Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603891C: <i>Special Programs - MDA</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	228.450	296.145	272.387	-	272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
MD27: <i>Special Programs</i>	228.450	296.145	272.387	-	272.387	321.450	345.263	354.503	348.602	Continuing	Continuing

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 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	270.189	296.554	377.845	-	377.845
Current President's Budget	228.450	296.145	272.387	-	272.387
Total Adjustments	-41.739	-0.409	-105.458	-	-105.458
• Congressional General Reductions	-1.684	-0.409			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-25.000	-			
• Reprogrammings	-3.378	-			
• SBIR/STTR Transfer	-11.477	-			
• Other Adjustment	-0.200	-	-105.458	-	-105.458

Change Summary Explanation

FY 2011 adjustments include Congressional reduction (DoD and Full year continuing Appropriation Act, Public Law 112-10) and reflects realignment to DoD priorities.

FY 2013 reduction reflects a fund realignment to DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603891C: <i>Special Programs - MDA</i>	PROJECT MD27: <i>Special Programs</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD27: <i>Special Programs</i>	228.450	296.145	272.387	-	272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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

	FY 2011	FY 2012	FY 2013
Title: Special Programs	228.450	296.145	272.387
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: 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.			
FY 2012 Plans: 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.			
FY 2013 Plans: 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.			
Accomplishments/Planned Programs Subtotals	228.450	296.145	272.387

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

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603891C: <i>Special Programs - MDA</i>	PROJECT MD27: <i>Special Programs</i>

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	1,530.767	988.928	992.407	-	992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
MD09: <i>Aegis BMD</i>	1,474.296	935.029	775.978	-	775.978	743.982	723.618	797.184	651.653	Continuing	Continuing
MT09: <i>Aegis BMD Test</i>	-	-	150.291	-	150.291	138.573	134.996	106.871	134.241	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	-	12.600	15.588	-	15.588	24.262	39.716	70.331	118.990	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	56.471	41.299	50.550	-	50.550	54.053	51.767	55.815	53.796	Continuing	Continuing

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, ICBMs in early phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS. Upgrades to both the Aegis BMD Weapon System and the STANDARD MISSILE-3 (SM-3) configuration enable Aegis BMD to provide effective, supportable defensive capability against longer range, more sophisticated threats and an enduring Aegis Ashore defensive capability.

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

Deployed Now

-Aegis BMD 3.6.1: Delivers an engagement capability with an SM-3 Block IA against SRBM, MRBM and IRBM class threats. Delivers a Near Term Sea Based Terminal (NTSBT) capability against SRBM with a modified SM-2 Block IV. Delivers an LRS&T capability against ballistic missile threats of all ranges. Aegis BMD 3.6.1 has demonstrated launch on remote operations in FY 2011 and has the ability to receive live fire information from the Space Tracking and Surveillance System (STSS) to support fire control operations. Assessed operationally suitable and effective in 2008.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>
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Aegis BMD 4.0.1

-Aegis BMD 4.0.1 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 BMD's sensor improvements include the (AN/SPY)-1 radar's signal processor and the SM-3 Block IB kinetic warhead's (KW) two-color infra-red (IR) seeker. The Aegis BMD Signal Processor provides a real-time identification 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 Kinetic warhead (KW) divert engine system has been upgraded over the SM-3 Block IA. The new divert engine, the Throttleable Divert and Attitude Control System (TDACS), provides more flexible divert to maneuver the kill Vehicle (KV) to intercept.

Deploying FY 2014

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

Deploying in the Future

- Conducting SM-3 Block IIB product development source selection and subsequent program management of product development.
- 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.
- Aegis BMD computer program baseline and missile system modifications necessary to place Aegis BMD capability on land (Aegis Ashore).
- 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 Blk IIA). Missile development will be covered under the SCD project prior to the SM-3 Blk IIA incorporation into the Aegis BMD 5.1 upgrade to the Aegis BMD system.
- Aegis BMD 5.1/5.1.X - Integrates the SM-3 Blk IIA missile and future missiles with an improved terminal defense capability and Open Architecture (OA) environment. The addition of the SM-3 Blk IIA missile will expand available battlespace to 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. That capability will further extend Aegis BMD by capitalizing on globally-deployed BMDS sensor assets.

BMD Systems Engineering

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>
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MDA Engineering integrates element development, test (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), 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. 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 test investments. The bottom line is that MDA is focused on conducting meaningful ballistic missile testing that demonstrates the capabilities of the BMDS.

MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603892C: <i>AEGIS BMD</i>

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1,467.278	960.267	957.992	-	957.992
Current President's Budget	1,530.767	988.928	992.407	-	992.407
Total Adjustments	63.489	28.661	34.415	-	34.415
• Congressional General Reductions	-10.684	-1.339			
• Congressional Directed Reductions	-12.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	114.000	30.000			
• Reprogrammings	0.490	-			
• SBIR/STTR Transfer	-28.317	-			
• Other Adjustment	-	-	34.415	-	34.415

Change Summary Explanation

The FY 2011 increase of \$114.000M reflects a congressional directed transfers from the Navy \$72.500M Other Procurement Navy (OPN) and \$1.500M Operations & Maintenance Navy (OMN), and transfer SM-3 Block IIB development from BMD Technology PE (0603175C) \$40.000M (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)). The FY 2011 decrease of \$12.000M reflects a congressional undistributed reduction (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)). The FY 2011 increase of \$0.490M reflects a realignment of Department of Defense priorities.

The FY 2012 increase of \$30.000M reflects a congressional directed transfer from SM-3 Block IIB PE (0603902C) for SM-3 Block IB production improvements adjustments (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)). The FY 2012 decrease of \$1.339M reflects a realignment of Department of Defense priorities.

The FY 2013 increase of \$34.415M reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD09: <i>Aegis BMD</i>	1,474.296	935.029	775.978	-	775.978	743.982	723.618	797.184	651.653	Continuing	Continuing
Quantity of RDT&E Articles	5	9	4		4	0	0	0	0		

Note

The fiscal year 2012 budget request includes \$565M for the procurement of SM-3 Block IB missiles in support of Aegis Ballistic Missile Defense. Following a recent flight test failure, Missile Defense Agency (MDA) is identifying requirements for a failure review of the SM-3 Block IB, sustainment of the industrial base, and the procurement of SM-3 Block IA missiles before SM-3 Block IB missiles will be procured. Contained in the FY 2012 Defense Appropriation the conferees understood that the details of the specific funding requirements are currently being analyzed by MDA and direct MDA to submit a prior approval reprogramming request prior to utilizing funds from this line.

A. Mission Description and Budget Item Justification

Aegis 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:

- Aegis BMD 3.6.1 deployed now, element of the Phase Adaptive Approach (PAA) phase I, midcourse and terminal layer defense.
- Aegis BMD 4.0.1 improved radar tracking accuracy and RF discrimination and increased raid capacity using Aegis BMD Signal Processor (BSP).
- SM-3 Blk IB improved kinetic warhead.
- Aegis BMD 5.0 integrates BMD capability into the Navy's Aegis Modernization Program.
- Aegis BMD 5.0 Capability Upgrade (CU) expands threat set and further increased the raid size, adds improved terminal defense capability.
- Aegis BMD 5.1 implementation of SM-3 Blk IIA tactical capability.
- Initial manufacturing of SM-3 Blk IB missiles.
- BMD shipset installations aboard US Navy Cruisers and Destroyers.
- Adaptation of Aegis BMD for use on land (Aegis Ashore).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
<p>Prove Missile Defense Works:</p> <p>-Aegis BMD element-level testing. -Participation in BMD System ground tests. -Element Modeling & Simulation.</p> <p>Aegis BMD 3.6.1 provides midcourse defense against Short Range Ballistic missile (SRBM), Medium Range Ballistic Missile (MRBM) and Intermediate Range Ballistic Missile (IRBMs) using the SM-3 Blk IA and terminal defense against SRBM with SM-2 Blk 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 BMDS.</p> <p>Aegis BMD 4.0.1 and SM-3 Blk IB will address more sophisticated and evolving threats. The ship receives a new signal processor that increases radar resolution to provide more accurate and discriminated track information and triples the possible number of simultaneous ballistic missile engagements over Aegis BMD 3.6.1 The SM-3 receives a new kinetic warhead that includes a 2 color seeker, throttleable engine and upgraded signal processor.</p> <p>Other capability enhancements include functionality to support BMDS integrated Builds C and D:</p> <p>-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 (4.0.1 and Standard Missile (SM-3 Blk 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 in the region. -Approved additions to integrated Build D support initial Aegis BMD Ashore with control of engagement debris and refinements to BMD engagement coordination.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Aegis BMD 5.0 will integrate Aegis BMD 4.0.1 capability into the Navy-developed Open Architecture (OA) computing environment. This change is necessary for Aegis BMD to remain compatible with Navy as Navy ship modernization plans are executed. This change will improve human-systems interface through display enhancements and eliminate the need for a separate computing system specific to the BMD mission. This will also enable more ships to serve as candidates for the BMD mission. Aegis BMD 5.0 will support the BMDS Integrated Build D and provide the basis for Aegis Ashore.

Aegis BMD 5.0 Capability Upgrade (CU) will enhance Aegis BMD 5.0 by restoring the terminal defense layer with the SM-6, increasing the maximum number of SM-3's inflight simultaneously and expanding the threat set to include those for 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 Ballistic Missile Defense System (BMDS) upgrades.

Aegis BMD 5.1 will integrate the SM-3 Blk IIA missile and improved terminal defense capability. It will also incorporate the following Weapon System improvements:

- An Aegis BMD module in Navy's Open Architecture computer program.
- Defeat a wide variety of ballistic missiles: Short Range Ballistic Missile (SRBMs), Medium Range Ballistic Missile (MRBMs), and Intermediate Range Ballistic Missile (IRBMs).
- Increased battlespace with the SM-3 Blk 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 BMDS.
- Enhanced conventional discrimination.
- Increased BMDS interoperability.
- Enhanced Sea-Based Terminal capability.

Aegis BMD 5.1/5.1.X with the addition of the SM-3 Blk IIB expands the threat set to include Inter-continental Ballistic Missiles (ICBMs) and Early Intercept Engagement Capability.

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

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

	FY 2011	FY 2012	FY 2013
Title: Aegis BMD 4.0.1 Development	162.473	65.746	115.367

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Test of BMD 4.0.1. -Prepared for the Computer Program Acceptance Panel (CPAP). -Prepared for and executed FTM-16 (Aegis intercept Flight Test), the first BMD 4.0.1/SM-3 Blk IB flight test (Developmental Test (DT) Assist and an SM-2 Anti-Air Warfare (AAW) engagement. -Delivered BMD 4.0.1 Computer Program for Deployment Certification testing. -Prepared for the Deployment Certification. -Prepared for the Platform Certification. -Delivered Command and Control Processor (C2P)/ Common Data Link Monitoring System (CDLMS) V3.7 in support of ISO) BMD 4.0.1 Interoperability enhancements. -Delivered Global Command and Control System- Maritime (GCCS-M) 4.0.3.5 ISO BMD 4.0.1 Mission Planning enhancements. -Delivered Joint Tactical Terminal (JTT)-M Blk 5 Rel 7 ISO BMD 4.0.1 Overhead Persistent Infrared (OPIR) Cueing enhancements. -Continued interoperability studies with BMDS elements, automated mission planner data exchange with Command and Control, Battle Management and Communications C2BMC) and Maritime Integrated Air and Missile (MIPS) utilization of improved space cue track data and real world operations. -Completed BMD 4.0.1 Final Operating and Support Hazard Analysis (O&SHA). -Completed BMD 4.0.1 Final Safety Requirements Verification Matrix (SaRVM). -Completed BMD 4.0.1 Certification Safety Assessment Report (SAR). -Completed Mission Assurance audits with Lockheed Martin Mission Systems and Sensors (LMMS2) and SPAWAR covering Safety, Parts & Materials, T&E. -Completed Physical Configuration Audits at LMMS2 in Moorestown, NJ and Clearwater, FL. -Completed Navy Interoperability Certification. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Conduct Threat Adaptation Update -Update 4.0.1 Computer Program Based upon flight test results -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. 	0	0	0
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
-Continue Command and Control Processor (C2P)/Common Data Link Monitoring System (CDLMS) V3.7 installations -Continue deployment of Global Command and Control System Maritime (GCCS-M) 4.0.3.5 on BMD platforms				
Title: Aegis BMD 5.0 Development		226.916	145.978	239.912
Articles:		0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Continued the development and testing of BMD 5.0. -Continued the design and development of computer program functionality changes. -Successfully completed In-Process Review (IPR) #5, permission was granted to code through completion. IPR #5 also served as the Critical Design Review for BMD Guarded Unit. -Successfully supported the Anti-Air Warfare (AAW) Radar Demonstration. -Prepared for the Multi-Mission Signal Processor Radar Exercise (MMSP Radar Ex) which will demonstrate/evaluate MMSP performance with Aegis Modernization (ACB-12) computer programs in both the AAW and BMD 5.0 modes. -Supported systems engineering efforts to incorporate interoperability enhancements including: Navy Multi Band Terminal and Advance EHF. -Conducted Navy and Joint Service-Level communications testing to evaluate interoperability with the overall BMDS and Navy elements. -Initiated design effort to increase raid size capacity, expand threat set and restore terminal defense.				
FY 2012 Plans: -Conduct Multi-Mission Signal Processor Radar Exercise. -Prepare for and support the Test Readiness Review (TRR) #1, as part of the roadmap to demo in anticipation of Aegis Modernization (ACB-12). -Prepare for and conduct Mission Readiness Assessment #1. -Prepare for Aegis Modernization (ACB-12) demonstration, which is an Anti-Air Warfare (AAW) and BMD functionality test. -Complete BMD integration into ACB-12 to include full BMD functionality. -Conduct testing to prove full functionality of BMD components. -Conduct Prime Item Development Specs (PIDS)/Critical Item Development Specs (CIDS) testing. Starting system level specification verification.				
FY 2013 Plans: -Conduct testing to verify full functionality of BMD Components -Continue Prime Item Description Specs (PIDS)/Critical Items Description Specs (CIDS) testing				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Continue System Level Specification Verification
 -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.

Title: Aegis BMD 5.1 Development	119.160	93.637	183.553
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

- Completed System Requirements Review (SRR) #1 which finalized, per plan, 92% of the Element Capability Specification (ECS) Requirements.
- Closed out action items from the 5.1 System Requirements Review (SRR) #1 and completed analysis necessary to finalize the Element Capability Specification (ECS) level requirements.
- Made final preparations for the BMD 5.1 SRR #2 scheduled for Q1 FY 2012 to finalize the remaining, per plan, 8% of the ECS Requirements.
- Initiated flow of ECS level requirements down to the Aegis BMD 5.1 System Level Specification Document (A-Spec) and initiated systems engineering necessary to develop the BMD 5.1 A-Spec.
- Conducted analysis, modeling and simulation, and concept development to support early systems engineering development to reduce technical risk for BMD 5.1 Engage on Remote (EoR) capabilities.
- Initiated preparation for the BMD 5.1 System Design Review #1 (SDR #1) by developing the BMD 5.1 SDR #1 technical data review package.
- Conducted system level performance analysis in preparation for the SM-3 Cooperative Development (SCD) Preliminary Design Review (PDR), using early engineering surrogate BMD 5.1 Aegis Weapon System (AWS) data.
- Initiated Vertical Launch System (VLS) system engineering, analysis, and design activities in support of VLS SRR scheduled for Q1 FY 2012.
- Developed a strategy for accelerating the BMD 5.1 Development effort to support the SM-3 Block IIA Cooperative Development (SCD) Flight Test Missions (SFTMs).

FY 2012 Plans:

- Conduct SRR #2 to finalize the remaining 8% of the ECS requirements
- Continue systems engineering and analysis to refine Aegis BMD 5.1 A-Spec.
- Continue analysis and design of AWS/Vertical Launch System (VLS)/Missile interfaces and specifications.
- Prepare for and conduct VLS SRR
- Conduct VLS systems engineering, analysis, and design activities in support of VLS SDR.
- Continue analysis and systems engineering for development of Aegis BMD 5.1 EoR, and BMDS integration.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Continue preparation for and execute BMD 5.1 SDR #1; complete SDR #1 data package and conduct Navy Review Team (NRT) review. -Prepare for SDR #2 -Conduct system-level performance analysis in preparation for the SCD Critical design Review (CDR), using updated surrogate BMD 5.1 AWS data. -Prepare for and conduct VLS SDR. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Continue systems engineering and analysis to complete the Aegis BMD 5.1 A-Spec. -Complete preparation for and execute BMD 5.1 SDR #2; complete SDR #2 data package and conduct Navy Review Team (NRT) review. -Initiate and systems engineering and analysis to develop the Aegis BMD 5.1 B1, B2, and B5-Specs -Initiate preparation for the BMD 5.1 PDR. -Continue analysis and systems engineering for development of Aegis BMD 5.1 EoR, and BMDS integration. -Complete system-level performance analysis in preparation for the SCD CDR, using updated surrogate BMD 5.1 AWS data. -Complete analysis and design of AWS/VLS/Missile interfaces and specifications. -Complete Vertical launch system (VLS) systems engineering, analysis, and design activities in support of VLS Preliminary Design Review (PDR). -Prepare for and conduct VLS PDR. -Initiate VLS systems engineering, analysis, and design activities in support of VLS CDR. 			
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Title: SM-3 Blk IB Development	260.115	104.013	79.790
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

- Completed kinetic warhead (KW) System Integration Test (SIT), an end to end closed loop KW test.
- Completed SM-3 Blk IB Throttling Divert and Attitude Control Systems (TDACS) Qualification test 1.
- Completed SM-3 Blk IB Hazard Assessment Tests (HAT) for flight test.
- Delivered one (1) SM-3 Blk IB Pathfinder round for use in FTM-16 E2 (Aegis Intercept Flight Test).
- Conducted FTM-16 E2 (Aegis Intercept Flight Test) initial flight test of SM-3 Blk IB Pathfinder missile.
- Participated in JFTM-4 Events 1-3 (Aegis Simulated Intercept Flight Test).
- Completed SM-3 Blk IB system, subsystem and component First Article Inspections (FAI's).
- Began SM-3 Blk IB subsystem and component Manufacturing Readiness Reviews (MRR's).
- Supported MDA/QS Independent Audits and Facility Assessments and adjudicated findings.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Completed SM-3 IB Safety Assessment Report (SAR). -Conducted SM-3 IB reviews with Navy's Software System Safety Technical Review Panel (SSSTRP) and Weapons Safety and Explosive Safety Review Board (WSESRB) with completed Technical Data Package.</p> <p>FY 2012 Plans: -Increase production and tooling for production line rate increase from 2 to 4 per month. -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. -Complete additional SM-3 Blk IB ground test (HAT, Quals, and DVT).</p> <p>FY 2013 Plans: -Continue production line rate increase from 2 to 4 per month. -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. -Complete IB Update for Wildcat. -Support Production decisions for Lot #2 and beyond (4Q FY 2013). -Conduct Aegis BMD Flight Test Mission including SM-3 intercept using Space Tracking and Surveillance System (STSS) as a remote sensor.</p>				
<p>Title: Aegis BMD Testing</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Conducted JFTM-4 (Aegis Simulated Intercept Flight Test) a BMD 4.0.1 simulated SM-3 Blk IB engagement against an Aegis Readiness Assessment Vehicle Group B (ARAV-B), a Short Range Ballistic Missile (SRBM) target and a Medium Range Target (MRT) emulating a separating target (Japanese Foreign Military Sales (FMS) Test) -Conducted Aegis BMD-specific analyses during pre- and post-mission analysis phases. -Supported Aegis BMD-specific modeling and simulation of predicted system performance for testing. -Began test planning for FY 2012 Aegis flight test missions: prepared target, developed models and simulations, and readied the range for test. -Participated in Target of Opportunity (TOO) testing. -Participated in BMD system ground test program. -Participated in BMD special technology experiments.</p> <p>FY 2012 Plans: -Support Aegis BMD-specific modeling and simulation of predicted system performance for testing.</p>		<p>42.672</p> <p>Articles: 0</p>	<p>87.487</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Begin test planning for FY 2013 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test.</p> <p>-Participate in TOO testing.</p> <p>-Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.</p> <p>-Participate in BMD special technology experiments.</p> <p>FY 2013 Plans: Funding moved to MT09.</p>				
<p>Title: Fielding - AWS</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Installed three (3) BMD 3.6.1 shipsets.</p> <p>-Procured three (3) BMD 4.0.1 shipsets (including BMD Signal Processor (BSP)).</p> <p>-Procured two (2) shipsets of BMD 5.0 equipment to support U.S. Navy Aegis Modernization (AMOD) schedule.</p> <p>-Supported USS LAKE ERIE Engineering Development Model (EDM) upgrades to achieve BMD 4.0.1 tactical configuration.</p> <p>FY 2012 Plans:</p> <p>-Install two (2) BMD 3.6.1 shipsets.</p> <p>-Procure four (4) BMD 4.0.1 equipped shipsets.</p> <p>-Install two (2) BMD 4.0.1 equipped shipsets.</p> <p>-Procure five (5) BMD 5.0 equipped shipsets.</p> <p>-Install one (1) BMD 5.0 equipped shipset.</p> <p>FY 2013 Plans:</p> <p>-Install one (1) BMD 3.6.1 shipset.</p> <p>-Procure two (2) BMD 4.0.1 shipsets.</p> <p>-Install two (2) BMD 4.0.1 shipsets.</p> <p>-Procure two (2) BMD 5.0 shipsets.</p> <p>-Install two (2) BMD 5.0 shipsets.</p>		<p>98.678</p> <p>Articles: 5</p>	<p>133.050</p> <p>9</p>	<p>86.648</p> <p>4</p>
<p>Title: SM-3 Manufacturing</p> <p>Description: See Description Below</p>		<p>164.312</p> <p>Articles: 0</p>	<p>68.441</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> -Conducted focused Mission Assurance reviews of thirty-two (32) SM-3 Blk IB Critical Suppliers -Procured and began manufacturing twenty-four (24) SM-3 Blk IB Missiles.</p> <p><i>FY 2012 Plans:</i> -Deliver Fifteen (15) of twenty four (24) SM-3 Blk IB missiles. -Continue manufacturing the remainder of twenty four (24) SM-3 Blk IB missiles that began in FY 2011 for delivery in FY 2013.</p> <p><i>FY 2013 Plans:</i> -Deliver remaining nine (9) of twenty-four (24) SM-3 Blk IB missiles that began in FY 2011.</p>				
<p><i>Title:</i> SM-3 Production Support</p> <p><i>Description:</i> See Description Below</p>		44.742	46.107	-
		<i>Articles:</i> 0	0	0
<p><i>FY 2011 Accomplishments:</i> -Continued to monitor performance of SM-3 Block IA. -Monitored obsolete material replacement effort. -Conducted ground tests for lot qualification of components. -Continued manufacturing of SM-3 Vertical Launch System (VLS) canisters. -Participated in FTM-15 (Aegis Intercept Flight Test). -Completed FTM-15 (Aegis Intercept Flight Test) Anomaly Investigation -Provided engineering resources to address investigations for any findings in the manufacturing line.</p> <p><i>FY 2012 Plans:</i> -Continue to monitor performance of SM-3 Blk IA & IB. -Monitor obsolete material replacement effort. -Design alternatives for obsolete material replacement efforts. -Conduct ground tests for lot qualification of components. -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. -Provide in-service engineering support for SM-3 Blk IA missiles.</p> <p><i>FY 2013 Plans:</i> -Funds for SM-3 Production Support are reported in project element 0208866C.</p>				
<p><i>Title:</i> Fleet Integration</p>		27.803	13.483	4.967
		<i>Articles:</i> 0	0	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Provided In-service Engineering support to Aegis BMD: Weapon System and Vertical Launch Systems (VLS). -Provided initial ABMD installation operation 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: Weapon System and VLS. -Provided training simulation infrastructure and scenarios supporting introduction of additional Phased Adaptive Approach threats and introduction of Aegis BMD 4.0.1 Baseline. -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 Combatant Commander (COCOMs) for real world operations -Provided maintenance and update of Force on Force Modeling and Simulation <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Provide In-service Engineering support to Aegis BMD: Weapon System and VLS. -Provide initial ABMD installation operational and maintenance training for Aegis BMD ship crews. -Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD: Weapon System and VLS. -Provide training simulation infrastructure and scenarios supporting introduction of additional Phased Adaptive Approach threats and introduction of Aegis BMD 4.0.1 Baseline. -Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. -Provide reach back analytical support to COCOMs for real world operations. -Provide maintenance and update of Force on Force Modeling and Simulation. -Respond to Fleet issues related to Aegis BMD installations, BMD operations and BMD events. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Provide In-service Engineering support to Aegis BMD: Weapon System and (VLS). -Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. -Respond to Fleet issues related to Aegis BMD installations, BMD operations and BMD events. -Provide reach back analytical support to COCOMs for real world operations -Provide maintenance and update of Force on Force Modeling and Simulation 			
Title: SM-3 Operations & Support		36.270	-
Articles:		0	0
			-
			0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Provided In-service Engineering support to Aegis BMD: SM-3 missile. -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: SM-3 missile. -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.</p> <p>FY 2012 Plans: Funds for FY 2012 Accomplishments are reported in budget project MX09.</p> <p>FY 2013 Plans: Funds for FY 2013 Accomplishments are reported in budget project MX09.</p>				
<p>Title: Modeling & Simulation HWIL Framework, Simulations, Models</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Deployed/integrated common BMDS Hardware in the Loop (HWIL) simulation framework--Single Stimulation Framework (SSF) with the Elements for BMDS ground and flight tests and training -Developed/integrated the HWIL Single Stimulation Framework (SSF) at COCOM, training, and exercise Host Nation locations -Maintained the Missile Defense System Exerciser (MDSE) framework for support of MDA exercises until SSF has absorbed the MDSE mission area (FY 2012) -Integrated the SSF with additional Allied/Coalition elements to expand distributed BMDS ground test and exercise venues -Provided HWIL Post Flight Reconstruction capability (through SSF) -Incorporated real time PLET-C environment model upgrades into the Hardware in the Loop (HWIL) Single Stimulation Framework (SSF) -Conducted BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos -Continued development of the SSF to support execution of increasingly more complex BMDS ground test campaigns; identify interdependencies required for execution -Planned integration of the SSF with the DSA into the Objective Simulation Framework (OSF) -Planned and provided for SSF sustainment, maintenance and product support</p>		<p>Articles:</p> <p>69.937 0</p>	<p>53.631 0</p>	<p>38.947 0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Implemented support of wide band debris for BMDS sensors in SSF -Integrated the BMDS SSF with additional MDA sensors, as they came on-line -Supported Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation -Conducted initial SSF Objective Hardware performance assessment -In support of the MDA Integrated Master Test Plan (IMTP) developed an SSF software capability for a 2nd parallel test string -Initiated Open Architecture redesign of SSF -Initiated improved Instantaneous Object Processing capability <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Complete deployment and integration of BMDS HWIL stimulation framework--Single Stimulation Framework (SSF) with Elements for BMDS ground, flight tests and training -Implement upgrades to the BMDS HWIL SSF that support execution of increasingly more complex BMDS ground test campaigns that collect data to assess reliability and identify necessary reliability improvements -Demonstrate the SSF has incorporated Missile Defense System Exerciser (MDSE) framework capabilities to support MDA exercises -Provide Single Stimulation Framework (SSF) support to Post Flight Reconstruction activities -Conduct BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos -Begin integration of the SSF with the DSA into the OSF -Begin Optimistic Sensor Model (OSM) integration into SSF -Provide for SSF sustainment, maintenance and product support -Integrate the BMDS HWIL SSF with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture -Continue Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation -Begin deployment and integration of BMDS HWIL SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners -Begin installation of BMDS HWIL SSF software capability (funded by MDA/DESH) and necessary hardware/ maintenance (funded by MDA/DTR) to support a 2nd parallel test string (Ground Test assets only). -Demonstrate initial Open Architecture (OA) redesign capabilities -Demonstrate improved Instantaneous Object Processing capabilities -Begin development of Real Time, scaled Real Time, non Real Time operational modes <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Demonstrate the SSF has incorporated MDSE framework capabilities to support MDA exercises. -Provide Single Stimulation Framework (SSF) support to Post Flight Reconstruction activities. 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Continue integration of the SSF with the DSA into the OSF. -Continue Optimistic Sensor Model (OSM) integration into SSF. -Provide for SSF sustainment, maintenance and product support. -Integrate the BMDS HWIL SSF with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture. -Continue Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation. -Begin deployment and integration of BMDS HWIL SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. -Begin installation of BMDS HWIL SSF software capability (funded by MDA/DESH) and necessary hardware/ maintenance (funded by MDA/DTR) to support a 2nd parallel test string (Ground Test assets only). -Demonstrate initial OA redesign capabilities. -Demonstrate improved Instantaneous Object Processing capabilities. -Begin development of Real Time, scaled Real Time, non Real Time operational modes. 			
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Title: BMDS Level Testing	109.769	88.436	-
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

- Successfully conducted FTM-15 (Aegis Intercept Flight Test) flight test mission:
- Exercised the capability of the first phase of the Phased Adaptive Approach (PAA).
- Conducted a BMD 3.6.1 engagement and intercept with an SM-3 Blk IA missile against an IRBM target.
- Demonstrated BMDS connectivity with the Army Navy/Transportable Radar surveillance (AN/TPY)-2 Radar via Command and Control, Battle Management and Communications (C2BMC).

- Conduct FTM-16 (Aegis Intercept Flight Test) flight test mission:
- Exercise of Phase II capability of the Phased Adaptive Approach.
- Conduct a BMD 4.0.1 engagement and intercept of an Aegis Readiness Assessment vehicle Group B (ARAV-B) with an SM-3 Blk IB missile.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conducted a BMD 4.0.1 simulated SM-3 Blk IB engagement against an Aegis Readiness Assessment Vehicle Group C (ARAV-C), a Short Range Ballistic Missile (SRBM) target. -Conducted a BMD 4.0.1 Anti-Air Warfare (AAW) exercise using SM-2 Blk IIIA missile against an anti-ship cruise missile target. -Completed pre-flight analysis to verify mission scenarios and to predict future performance. -Prepared and completed missile delivery package for the Mission Control Panel reviews. -Performed post-flight analysis to validate high-fidelity models and simulations. Completed post-flight analysis to support Mission Data Reviews (MDRs). -Participated in Ground Based midcourse Defense (GMD) Intercept Flight Test (FTG)-06a (Aegis Simulated Intercept Flight Test). <p>FY 2012 Plans: -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.</p> <p>FY 2013 Plans: Funding moved to MT09.</p>				
Title: Systems Engineering & Integration		26.588	19.794	10.307
		0	0	0
Description: See Description Below		Articles:		
<p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Produced all the threat data required to enable Ballistic Missile Defense System Ground Tests for PAA Phase 1, Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan -Produced parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach -Validated that Ballistic Missile Defense System test targets (such as FTM-15 (Aegis Intercept Flight Test) are threat representative -Continued planning and coordination for real-time track demonstrations using an unmanned aerial vehicle (UAV) (associated with scheduled BMDS test events) using an existing airborne platform -Started threat systems engineering work to support future systems design. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -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 -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 				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Validate that Ballistic Missile Defense System test targets are threat representative -Continue threat systems engineering work to support future systems design</p> <p>FY 2013 Plans: -Continue support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development -Continue to produce all the threat data required to enable Ballistic Missile Defense System Ground Tests, Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan -Continue to produce parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach -Continue to validate that Ballistic Missile Defense System test targets are threat representative -Continue threat systems engineering work to support future systems design</p>				
<p>Title: Aegis BMD 3.6.1 Development</p> <p>Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: -Completed pre-flight analysis to verify mission scenarios and to predict flight performance. -Successfully completed FTM-15 (Aegis Intercept Flight Test) (DT/OT). -Successfully completed evaluation and support for BMD data path enhancements aboard ship and at land-based communication sites. -Successfully evaluated ESL BMDS OPIR BOA space cue impacts on Aegis BMD performance. -Provided ongoing support for contingency operations. -Provided subject matter expert support for the fielded Aegis BMD 3.6.1 baseline.</p> <p>FY 2012 Plans: N/A</p> <p>FY 2013 Plans: N/A</p>		2.377 0	- 0	- 0
<p>Title: M&S Digital Framework, Simulation, Models</p> <p>Articles:</p> <p>Description: See Description Below</p>		4.365 0	4.540 0	4.916 0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p><i>FY 2011 Accomplishments:</i> Developed/delivered major releases of Model and simulation (M&S) digital products:</p> <ul style="list-style-type: none"> -Digital Simulation Architecture (DSA) framework for use in Technical Assessments -Ballistic Missile Defense (BMD) International Simulation for use in International virtual BMD demonstrations, BMD education, and warfighter wargames -Integrated, tested, functionally qualified, and delivered BMDS constructive Performance Assessment Simulation (utilizing DSA and Missile Defense Space warning Tool (MDST)) to support full-envelope BMDS performance assessment for Technical Assessments -Continued software operations/maintenance of the Extended Air Defense Simulation (EADSIM) code base for use in warfighter exercises -Procured, installed 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><i>FY 2012 Plans:</i></p> <ul style="list-style-type: none"> -Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses: -Performance Assessment Simulation (utilizing DSA, Missile Defense space Warning Tool (MDST), and Element-provided high-resolution models) to support full-envelope BMDS Performance Assessment events. -Real-time Digital Simulation (utilizing DSA, MDST, and Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaign. <p><i>FY 2013 Plans:</i></p> <ul style="list-style-type: none"> -Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses: -Performance Assessment Simulation (utilizing DSA, MDST, and Element-provided high-resolution models) to support full-envelope BMDS - Performance Assessment events. -Real-time Digital Simulation (utilizing DSA, MDST, and Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaign. 			
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Title: M&S VV&A and Test Operations	38.119	10.686	11.571
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Provided integrated Verification, Validation, and Accreditation (VV&A) of MDA Modeling and Simulations (M&S) at the system level for specific events, including Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and tier one Combatant Commander (COCOM) exercises.</p> <p>-Developed integrated VV&A event Plans and Reports for Focused Ground Tests, Integrated Ground Tests, Performance Assessments and Assured Response</p> <p>-Planned/specified system post-flight reconstructions events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level VV&A associated with Post Ground Test Reconstructions and System Post Flight Digital Reconstructions</p> <p>-Worked closely with Elements, Test Community, System Engineering, and Operational Test Agencies (OTA) to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree</p> <p>-Conducted system-level verification and validation of threat trajectory and signature; end-to-end environmental implementation is consistent and correct; communications and architecture behave properly; and interoperability is adequately addressed</p> <p>-Developed and implemented M&S standards consistent with industry best practices</p> <p>Conducted annual review of BMDS Element VV&A programs</p> <p>-Developed, implemented and configured control of web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure M&S improvement</p> <p>-Led BMDS VV&A working group to improve VV&A operations and ultimately improve BMDS performance</p> <p>-Developed and implemented metrics for system-level M&S to increase efficiencies and effectiveness</p> <p>-Ensured individual BMDS elements and components properly VV&A their own models</p> <p>FY 2012 Plans:</p> <p>-Provide integrated VV&A of MDA M&S at the system level for specific events, to include Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and tier one COCOM exercises</p> <p>-Develop integrated VV&A event Plans and Reports for events as reflected in the IMTP and the Exhibit R-4 schedule.</p> <p>-Plan and specify system post-flight reconstructions and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level VV&A associated with these events as reflected in the IMTP and the Exhibit R-4 schedule.</p> <p>-Work closely with Elements, Test Community, System Engineering, and OTA to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree</p> <p>-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</p> <p>-Develop and implement M&S standards consistent with industry best practices</p> <p>-Conduct annual review of BMDS Element VV&A programs</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Develop, implement and configure control of web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure Model and Simulation (M&S) improvement</p> <p>-Lead BMDS VV&A working group to improve Verification, Validation and Accreditation (VV&A) operations and ultimately improve BMDS performance</p> <p>-Develop and implement metrics for system-level M&S to increase efficiencies and effectiveness</p> <p>-Ensure that individual BMDS elements and components properly VV&A their own models</p> <p>FY 2013 Plans:</p> <p>-Continue to demonstrate initial OA redesign capabilities and improved Instantaneous Object Processing capabilities.</p> <p>-Continue support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development.</p> <p>Title: High Performance Interceptor/SM-3 Block IIB</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Funding originally planned for High Performance Interceptor work in the Ballistic Missile Command (BMD) Technology, 0603175C, Program Element was appropriated to the BMD Aegis, 0603892C, Program Element for FY 2011. Accomplishments for this effort are captured in the Standard Missile-3 Block IIB, 0603902C, Program Element.</p> <p>FY 2012 Plans:</p> <p>-Beginning in FY 2012, the SM-3 Block IIB source selection activities moves to the SM-3 Block IIB, 0603902C, Program Element with comprehensive SM-3 Block IIB program management in FY 2013.</p> <p>FY 2013 Plans:</p> <p>NA</p>	40.000 0	- 0	- 0
Accomplishments/Planned Programs Subtotals			
	1,474.296	935.029	775.978

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	299.767	473.843	420.630		420.630	273.926	200.699	185.007	46.103	Continuing	Continuing

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 SM-3 missile and the Aegis BMD Weapon System, respectively.

Competition will be maximized for procurement of any products or services in FY 2012, as appropriate.

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. In addition, in FY 2012 the Objective Simulation Framework (OSF) contract will be awarded. This full-and-open competition will unify M&S framework development efforts to allow seamless end-to-end representation of the BMDS, across HWIL and Digital domains, to support all Use Cases at substantial savings to the Agency.

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E. Performance Metrics

N/A

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09	MIPR	NSWC/DD:DAHLGREN, VA	59.679	3.501	Oct 2011	3.979	Oct 2012	-		3.979	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142293189	MIPR	NSWC/PHD:PT. HUENEME, CA	9.812	0.600	Oct 2011	2.484	Oct 2012	-		2.484	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142293191	MIPR	JHU/APL/MD:COLUMBIA, MD	17.906	4.000	Oct 2011	10.151	Oct 2012	-		10.151	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142293194	MIPR	MDA:VA	10.818	10.208	Oct 2011	5.010	Oct 2012	-		5.010	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142293195	SS/CPIF	LOCKHEED MARTIN:MOORESTOWN, NJ	633.432	18.054	Oct 2011	60.887	Oct 2012	-		60.887	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142293198	SS/CPAF	RAYTHEON/AZ:TUCSON, AZ	1.900	-		10.989	Oct 2012	-		10.989	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 201171422932	MIPR	AEGIS BMD:DAHLGREN, VA	53.887	13.369	Oct 2011	2.000		-		2.000	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT	MIPR	NAVSEA:VA	-	-		2.662	Oct 2012	-		2.662	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 201112203132279	MIPR	CORONA:CA	-	-		2.000	Oct 2012	-		2.000	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09	SS/CPHF	LOCKHEED MARTIN:MOORESTOWN, NJ	402.901	40.801	Oct 2011	111.410	Oct 2012	-		111.410	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142316263	MIPR	NSWC/DD:DAHLGREN, VA	23.062	7.303	Oct 2011	10.208	Oct 2012	-		10.208	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142316266	MIPR	NSWC/PHD:PT. HUENEME, CA	1.084	0.370	Oct 2011	0.366	Oct 2012	-		0.366	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142316267	MIPR	JHU/APL/MD:COLUMBIA, MD	22.020	2.260	Oct 2011	10.199	Oct 2012	-		10.199	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 2011714231627	MIPR	MDA:VA	44.594	41.150	Oct 2011	52.674	Oct 2012	-		52.674	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142316272	C/CPAF	RAYTHEON/AZ:TUCSON, AZ	0.030	-		-		-		-	0.000	0.030	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142316275	SS/CPAF	RAYTHEON/AZ:TUCSON, AZ	4.000	5.237	Oct 2011	5.617	Oct 2012	-		5.617	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142316278	MIPR	AEGIS BMD:AZ, VA, CA	-	10.175	Oct 2011	12.542	Oct 2012	-		12.542	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09	MIPR	NSWC/DD:DAHLGREN, VA	24.949	1.649	Oct 2011	16.366	Oct 2012	-		16.366	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142323684	MIPR	NSWC/PHD:PT HUENEME, CA	1.049	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142323686	MIPR	JHU/APL/MD:COLUMBIA, MD	20.703	1.524	Oct 2011	19.054	Oct 2012	-		19.054	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142323689	SS/CPAF	LOCKHEED MARTIN:MOORESTOWN, NJ	110.373	64.668	Oct 2011	118.008	Oct 2012	-		118.008	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142323691	SS/CPAF	RAYTHEON/AZ:TUCSON, AZ	0.210	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development VARIOUS	MIPR	MDA:VA	4.541	9.164	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09	MIPR	AEGIS BMD:AZ, VA, CA	49.605	4.802	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09	SS/CPAF	Raytheon:Tucson, AZ	671.572	70.705	Oct 2011	55.319	Oct 2012	-		55.319	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142332255	MIPR	NSWC/DD:Dahlgren, VA	25.232	0.649	Oct 2011	2.500	Oct 2012	-		2.500	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142332256	MIPR	JHU/APL/MD:Columbia, MD	33.847	1.791	Oct 2011	2.700	Oct 2012	-		2.700	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142332259	MIPR	NSWC/PHD:Port Huneme, CA	8.357	0.931	Oct 2011	1.120	Oct 2012	-		1.120	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142332261	MIPR	NSWC Carderock:MD	15.020	3.143	Oct 2011	1.993	Oct 2012	-		1.993	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142332264	MIPR	AEGIS BMD:VA, AZ, CA	66.372	6.352	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - MD09	MIPR	NSWC/DD:DAHLGREN, VA	3.621	0.425		-		-		-	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341695	MIPR	NSWC/PHD:PT. HUENEME, CA	2.853	-		-		-		-	0.000	2.853	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341698	MIPR	JHU/APL/ MD:COLUMBIA, MD	7.971	3.250		-		-		-	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341702	MIPR	NAVSEA:VA	4.181	57.187		-		-		-	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341705	MIPR	SPAWAR:SAN DIEGO, CA	1.016	-		-		-		-	0.000	1.016	0.000
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341708	MIPR	Corona:Corona, CA	1.383	-		-		-		-	0.000	1.383	0.000
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341709	C/CPAF	Lockheed Martin:Moorestown, NJ	-	0.825	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - MD09 - 20117142341713	MIPR	Aegis BMD:VA, AZ, CA	-	25.800	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - MD09	SS/CPPIF	Lockheed Martin:Moorestown, NJ	145.849	52.534	Oct 2011	58.584	Oct 2012	-		58.584	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - MD09 - 20117142347884	MIPR	NSWC/PHD:Port Hueneme, CA	30.171	11.106	Oct 2011	9.034	Oct 2012	-		9.034	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - MD09 - 20117142347888	MIPR	NSWC/DD:Dahlgren, VA	24.995	6.353	Oct 2011	1.500	Oct 2012	-		1.500	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - MD09 - 20117142347891	C/CPAF	Raytheon:Washington, DC	3.800	11.106	Oct 2011	2.130	Oct 2012	-		2.130	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - MD09 - 20117142347892	MIPR	PEO IWS:Minneapolis, MN	2.300	3.184	Oct 2011	4.600	Oct 2012	-		4.600	Continuing	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Fielding - AWS AWS FIELDING - MD09 - 20117142347895	MIPR	AEGIS TECHREP:Moorestown, NJ	1.700	1.600	Oct 2011	1.700	Oct 2012	-		1.700	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - MD09 - 20117142347898	MIPR	NAVSEA:VA	72.377	47.167	Oct 2011	9.100	Oct 2012	-		9.100	Continuing	Continuing	Continuing
SM-3 Manufacturing SM-3 BLK IB MANUFACTURING - MD09	SS/CPAF	Raytheon:Tucson, AZ	255.652	57.671	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Manufacturing SM-3 BLK IB MANUFACTURING - MD09 - 20117142352564	MIPR	NSWC/DD:Port Hueneme, CA	4.001	0.409	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Manufacturing SM-3 BLK IB MANUFACTURING - MD09 - 20117142352566	MIPR	NSWC Caderock:MD	11.760	10.361	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Production Support PRODUCTION SUPPORT - CANISTERS - MD09	MIPR	PEO IWS:Minneapolis, MN	15.800	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Production Support PRODUCTION SUPPORT - PRODUCTION ENGINEERING - MD09	SS/CPAF	Raytheon:Tucson, AZ	29.102	46.107	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Fleet Integration AWS O&S - MD09	SS/CPAF	Lockheed Martin:Moorestown, NJ	44.765	4.632	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Fleet Integration AWS O&S - MD09 - 20117142371309	MIPR	NSWC/DD:Dahlgren, VA	4.944	0.794	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - MD09	MIPR	JHU/APL/MD:Columbia, MD	3.299	1.010	Oct 2011	0.816	Oct 2012	-		0.816	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - MD09 - 20117142371317	MIPR	CSCS:Dahlgren, VA	8.670	1.322	Oct 2011	1.217	Oct 2012	-		1.217	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - MD09 - 2011714237132	MIPR	NSWC/DD:Dahlgren, VA	10.819	1.634	Oct 2011	1.360	Oct 2012	-		1.360	Continuing	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fleet Integration FLEET INTEGRATION - 20098185191945	MIPR	NSWC/PHD:Port Hueneme, CA	15.027	1.588	Oct 2011	1.456	Oct 2012	-		1.456	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - MD09	MIPR	SMDC/ARSTRST:Huntsville, AL	8.395	1.467	Oct 2011	0.118	Oct 2012	-		0.118	Continuing	Continuing	Continuing
Fleet Integration AWS O&S - MD09	MIPR	MDA:VA	-	1.036	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Operations & Support SM-3 O&S - MAINTENANCE - MD09	SS/CPAF	Raytheon:Tucson, AZ	13.637	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Operations & Support SM-3 O&S - SPARES - MD09	SS/CPAF	Raytheon:Tucson, AZ	62.971	-	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models Single Stimulation Framework & Objective Simulation Framework, Procure, Install, Test - MD09	C/CPAF	Boeing:AL	100.671	53.631		38.947	Oct 2012	-		38.947	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models DSA/SSF Integration - MD09	C/CPAF	Boeing:AL	21.506	-	Feb 2012	-		-		-	Continuing	Continuing	Continuing
Systems Engineering & Integration Industry - MD09	C/CPAF	Boeing:VA	12.117	-		5.154	Oct 2012	-		5.154	Continuing	Continuing	Continuing
Systems Engineering & Integration CSS - MD09	C/CPFF	CSC:VA	7.811	-		1.546	Oct 2012	-		1.546	Continuing	Continuing	Continuing
Systems Engineering & Integration CSS - MD09 - 20117142392773	C/CPFF	Cobham:CA	6.660	-		1.031	Oct 2012	-		1.031	Continuing	Continuing	Continuing
Systems Engineering & Integration SEI&T - MD09	MIPR	MDA:ARLINGTON, VA	-	19.794	Oct 2011	2.576	Oct 2012	-		2.576	Continuing	Continuing	Continuing
Systems Engineering & Integration Systems	MIPR	Lockheed Martin:Moorestown, NJ	-	-		-		-		-	Continuing	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Integration - MD09													
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - MD09	MIPR	NSWC/DD:DAHLGREN, VA	36.947	-		-		-		-	0.000	36.947	0.000
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - MD09 - 20117142395266	MIPR	NSWC/PHD:PT. HUENME, CA	23.300	-		-		-		-	0.000	23.300	0.000
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - MD09 - 20117142395272	MIPR	JHU/APL/MD:COLUMBIA, MD	41.620	-		-		-		-	0.000	41.620	0.000
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - MD09 - 20117142395275	MIPR	NAVSEA:VA	92.150	-		-		-		-	0.000	92.150	0.000
M&S Digital Framework, Simulation, Models Digital Simulation Architecture - MD09	C/CPAF	Northrop Grumman:CO	8.421	4.540		4.916	Oct 2012	-		4.916	Continuing	Continuing	Continuing
Subtotal			3,459.217	748.939		666.023		-		666.023			

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09	MIPR	MDA:Arlington, VA	36.244	2.132	Oct 2011	4.222	Oct 2012	-		4.222	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142431989	MIPR	NAVSEA:Washington, DC	17.962	1.468	Oct 2011	2.789	Oct 2012	-		2.789	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142431992	C/CPFF	GDIT:Dahlgren, VA	72.818	3.165	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142431995	C/CPFF	Paradigm:Dahlgren, VA	17.821	1.252	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410811	C/CPFF	Gryphon:Dahlgren, VA	3.801	0.215	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09	MIPR	NA:Dahlgren, VA	4.817	-		-		-		-	0.000	4.817	0.000
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142432002	C/CPFF	Lockheed Martin:Arlington, VA	2.006	-		0.622	Oct 2012	-		0.622	0.000	2.628	0.000
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142432014	C/CPAF	Raytheon:Arlington, VA	1.960	-		0.536	Oct 2012	-		0.536	0.000	2.496	0.000
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142432019	MIPR	Aegis BMD:Dahlgren, VA	2.628	0.520	Oct 2011	0.487	Oct 2012	-		0.487	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09 - 20117142432022	MIPR	MDA :Arlington, VA	17.000	7.262	Oct 2011	0.812	Oct 2012	-		0.812	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - MD09	MIPR	MDA MIDAESS:Arlington, VA	-	-		5.737	Oct 2012	-		5.737	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09	MIPR	MDA:Arlington, VA	12.050	6.232	Oct 2011	8.978	Oct 2012	-		8.978	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454161	MIPR	NAVSEA:Washington, DC	7.535	3.349	Oct 2011	6.508	Oct 2012	-		6.508	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454164	C/CPFF	GDIT:Dahlgren, VA	8.921	8.488	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454167	C/CPFF	Paradigm:Dahlgren, VA	6.829	2.857	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 2011714245417	C/CPFF	Gryphon:Dahlgren, VA	1.394	0.491	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454173	MIPR	NA:Dahlgren, VA	9.022	-		-		-		-	0.000	9.022	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454175	C/CPFF	Lockheed Martin:Arlington, VA	0.849	-		0.590	Oct 2012	-		0.590	0.000	1.439	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454178	C/CPAF	Raytheon:Arlington, VA	0.287	-		0.551	Oct 2012	-		0.551	0.000	0.838	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454181	MIPR	Aegis BMD:Dahlgren, VA	20.595	0.711	Oct 2011	1.087	Oct 2012	-		1.087	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454184	MIPR	MDA :Arlington, VA	17.000	16.554	Oct 2011	0.090	Oct 2012	-		0.090	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - MD09 - 20117142454188	MIPR	MDA MIDAESS:Arlington, VA	-	-		19.092	Oct 2012	-		19.092	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09	MIPR	MDA:Arlington, VA	1.547	1.836	Oct 2011	9.007	Oct 2012	-		9.007	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 2011714247033	MIPR	NAVSEA:Washington, DC	1.949	0.688	Oct 2011	8.934	Oct 2012	-		8.934	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470333	C/CPFF	GDIT:Dahlgren, VA	5.661	2.349	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470336	C/CPFF	Paradigm:Dahlgren, VA	1.587	0.734	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470338	C/CPFF	Gryphon:Dahlgren, VA	0.255	0.216	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470341	MIPR	NA:Dahlgren, VA	4.545	1.524	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470344	C/CPFF	Lockheed Martin:Arlington, VA	0.225	-		0.539	Oct 2012	-		0.539	0.000	0.764	0.000
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470352	C/CPAF	Raytheon:Arlington, VA	0.182	-		0.503	Oct 2012	-		0.503	0.000	0.685	0.000
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470355	MIPR	Aegis BMD:Dahlgren, VA	2.478	0.051	Oct 2011	0.997	Oct 2012	-		0.997	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470358	MIPR	MDA:Arlington, VA	17.000	4.432	Oct 2011	0.930	Oct 2012	-		0.930	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - MD09 - 20117142470359	MIPR	MDA MIDAESS:Arlington, VA	-	-		9.215	Oct 2012	-		9.215	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09	MIPR	MDA:Arlington, VA	17.260	3.648	Oct 2011	3.659	Oct 2012	-		3.659	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487038	MIPR	NAVSEA:Washington, DC	64.364	1.614	Oct 2011	2.417	Oct 2012	-		2.417	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487064	C/CPFF	GDIT:Dahlgren, VA	24.912	4.842	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487067	C/CPFF	Paradigm:Dahlgren, VA	6.007	1.156	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 2011714248707	C/CPFF	Gryphon:Dahlgren, VA	0.445	0.458	Oct 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487073	MIPR	NA:Dahlgren, VA	9.053	-		-		-		-	0.000	9.053	0.000
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487113	C/CPFF	Lockheed Martin:Arlington, VA	2.009	-		0.219	Oct 2012	-		0.219	0.000	2.228	0.000
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487117	C/CPAF	Raytheon:Arlington, VA	0.318	-		0.205	Oct 2012	-		0.205	0.000	0.523	0.000
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487119	MIPR	Aegis BMD:Dahlgren, VA	37.055	0.604	Oct 2011	0.427	Oct 2012	-		0.427	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487125	MIPR	MDA:Arlington, VA	18.869	8.120	Oct 2011	0.390	Oct 2012	-		0.390	Continuing	Continuing	Continuing

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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - MD09 - 20117142487128	MIPR	MDA MIDAESS:Arlington, VA	-	-		8.841	Oct 2012	-		8.841	Continuing	Continuing	Continuing
Aegis BMD Testing TESTING - MD09	MIPR	MDA:Arlington, VA	1.984	-		-		-		-	0.000	1.984	0.000
Aegis BMD Testing TESTING - MD09 - 20117142501342	MIPR	NAVSEA:Washington, DC	4.032	-		-		-		-	0.000	4.032	0.000
Aegis BMD Testing TESTING - MD09 - 20117142501345	C/CPFF	GDIT:Dahlgren, VA	13.868	-		-		-		-	0.000	13.868	0.000
Aegis BMD Testing TESTING - MD09 - 20117142501348	C/CPFF	Paradigm:Dahlgren, VA	3.621	-		-		-		-	0.000	3.621	0.000
Aegis BMD Testing TESTING - MD09 - 20117142501353	C/CPFF	Gryphon:Dahlgren, VA	0.667	-		-		-		-	0.000	0.667	0.000
Aegis BMD Testing TESTING - MD09 - 20117142501356	C/CPIF	Lockheed Martin:Arlington, VA	0.459	-		-		-		-	0.000	0.459	0.459
Aegis BMD Testing TESTING - MD09 - 20117142501359	C/CPAF	Raytheon:Arlington, VA	0.404	-		-		-		-	0.000	0.404	0.404
Aegis BMD Testing TESTING - MD09 - 20117142501363	MIPR	MDA:Arlington, VA	9.581	-		-		-		-	0.000	9.581	9.581
Aegis BMD Testing TESTING - MD09 - 20117142501366	MIPR	MDA MIDAESS:Arlington, VA	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			511.876	86.968		98.384		-		98.384			

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing BMDS Level Testing - MD09	MIPR	NSWC/ DD:DAHLGREN, VA	26.518	8.186	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514355	MIPR	NSWC/PHD:PT. HUENEME, CA	16.141	8.738	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514359	MIPR	JHU/APL/ MD:COLUMBIA, MD	30.505	15.063	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514364	MIPR	MDA:VA	50.987	38.254	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514369	SS/CPIF	Lockheed Martin:Moorestown, NJ	38.485	10.570	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514372	MIPR	SPAWAR:San Diego, CA	5.405	6.575	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514377	SS/CPAF	Raytheon:Tucson, AZ	4.500	-		-	Oct 2012	-		-	0.000	4.500	0.000
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514378	MIPR	PMRF:Barking Sands, Kauai, HI	7.000	-		-		-		-	0.000	7.000	0.000
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514383	MIPR	NAWC/PM:PT. MUGU, CA	2.700	1.050	Oct 2011	-		-		-	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - MD09 - 20117142514388	MIPR	MDA/ DTR:HUNTSVILLE, AL	3.490	-		-		-		-	0.000	3.490	0.000
M&S VV&A and Test Operations M&S VV&A and Test Operations - MD09	C/CPAF	Northrop Grumman:VA	46.418	10.686	Oct 2011	11.571	Oct 2012	-		11.571	73.741	142.416	67.478
Subtotal			232.149	99.122		11.571		-		11.571			

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4,203.242	935.029		775.978		-		775.978			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BMD 3.6.1 Ship Installations	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+													
BMD 4.0.1 Ship Installations																												
BMD 5.0 Ship Installations																												
BMD 4.0.1 Development	+	+	+	+	+																							
BMD 4.0.1 Certification																												
BMD 5.0 Development	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
BMD 5.0 Demo																												
BMD 5.0 Certification																												
BMD 5.1 System Requirements Review (SRR) #1				▲																								
BMD 5.1 System Requirements Review (SRR) #2					▲																							
BMD 5.1 Development	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
BMD 5.1 Demo																											▲	
BMD 5.1 System Design Review (SDR) #1							△																					
BMD 5.1 System Design Review (SDR) #2											△																	
BMD 5.1 Preliminary Design Review (PDR)													△															
BMD 5.1 Critical Design Review (CDR)																											△	
SM-3 Bk IB Missile Deliveries																												
SM-3 Bk IB Hazard Assessment Testing	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
SM-3 Bk IB Manufacturing Readiness Review (MRR)																												
SM-3 Bk IB System Integration Test (SIT)																												
SM-3 Bk IB Software Final Qualification Test (FQT)																												
FTI-01(Aegis/THADD/Patriot Multiple Engagement Flight Test Risk Reduction)																											△	
FTM-16 E2A (Aegis Intercept Flight Test)																											△	
FTM-18 (Aegis Intercept Flight Test)																											△	
FTM-19 (Aegis Intercept Flight Test)																											△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 3.6.1 Ship Installations	1	2011	1	2014
BMD 4.0.1 Ship Installations	3	2011	1	2015
BMD 5.0 Ship Installations	3	2012	4	2017
BMD 4.0.1 Development	1	2011	1	2012
BMD 4.0.1 Certification	1	2012	2	2012
BMD 5.0 Development	1	2011	2	2015
BMD 5.0 Demo	1	2013	1	2013
BMD 5.0 Certification	4	2014	4	2014
BMD 5.1 System Requirements Review (SRR) #1	3	2011	3	2011
BMD 5.1 System Requirements Review (SRR) #2	1	2012	1	2012
BMD 5.1 Development	1	2011	4	2017
BMD 5.1 Demo	2	2017	2	2017
BMD 5.1 System Design Review (SDR) #1	2	2012	2	2012
BMD 5.1 System Design Review (SDR) #2	1	2013	1	2013
BMD 5.1 Preliminary Design Review (PDR)	1	2014	1	2014
BMD 5.1 Critical Design Review (CDR)	1	2015	1	2015
SM-3 Blk IB Missile Deliveries	2	2012	2	2013
SM-3 Blk IB Hazard Assessment Testing	1	2011	2	2013
SM-3 Blk IB Manufacturing Readiness Review (MRR)	3	2012	3	2012
SM-3 Blk IB System Integration Test (SIT)	2	2011	2	2011
SM-3 Blk IB Software Final Qualification Test (FQT)	3	2011	3	2011
FTI-01(Aegis/THADD/Patriot Multiple Engagement Flight Test Risk Reduction)	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-16 E2A (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT09: <i>Aegis BMD Test</i>	-	-	150.291	-	150.291	138.573	134.996	106.871	134.241	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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), 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. 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 2011	FY 2012	FY 2013
Title: Aegis BMD Testing	-	-	87.199
Articles:	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>		PROJECT MT09: <i>Aegis BMD Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Description: See Description Below				
FY 2011 Accomplishments: Funded under MD09 accomplishments.				
FY 2012 Plans: Funded under MD09 accomplishments.				
FY 2013 Plans: -Conduct Aegis BMD-specific analysis during pre- and post-mission analysis phases -Begin test planning for FY 2014 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. -Participate in BMD special technology experiments				
Title: BMDS Level Testing				
Description: See Description Below				
FY 2011 Accomplishments: Funded under MD09 accomplishments.				
FY 2012 Plans: Funded under MD09 accomplishments.				
FY 2013 Plans: -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. -Exercise of Phase II capability of the Phased Adaptive Approach				
Title: Modeling & Simulation HWIL Framework, Simulations, Models				
Description: See Description Below				
FY 2011 Accomplishments: Funded under MD09 Accomplishments				
FY 2012 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Funded under MD09 Accomplishments			
<i>FY 2013 Plans:</i> -Continue to deploy and integrate BMDS Hardware in the Loop (HWIL) stimulation framework-Single Stimulation Framework (SSF) with Elements for BMDS ground, Flight tests and training -Implement upgrades to the BMDS HWIL SSF that support execution of increasingly more complex BMDS ground test campaigns -Support BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos			
Accomplishments/Planned Programs Subtotals	-	-	150.291

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	299.767	473.843	420.630		420.630	273.926	200.699	185.007	46.103	Continuing	Continuing

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 2013, as appropriate.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Subtotal				-		-		-		-	0.000	0.000	0.000	

Remarks

N/A

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

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Aegis BMD Testing AEGIS BMD TESTING	MIPR	NSWC:DAHLGREN, VA	-	-		10.755	Oct 2012	-		10.755	Continuing	Continuing	Continuing	
Aegis BMD Testing AEGIS BMD TESTING - 20111220266947	MIPR	NSWC/PHD PT.:HUENEME, CA	-	-		11.879	Oct 2012	-		11.879	Continuing	Continuing	Continuing	
Aegis BMD Testing AEGIS BMD TESTING - 201112202630564	MIPR	JHU/APL/ MD:COLUMBIA, MD	-	-		23.042	Oct 2012	-		23.042	Continuing	Continuing	Continuing	
Aegis BMD Testing AEGIS BMD TESTING - 201112202630567	MIPR	MDA:VA	-	-		7.278	Oct 2012	-		7.278	Continuing	Continuing	Continuing	
Aegis BMD Testing AEGIS BMD TESTING - 201112202630569	SS/CPIF	Lockheed Martin:Moorestown, NJ	-	-		10.752	Oct 2012	-		10.752	Continuing	Continuing	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Testing AEGIS BMD TESTING - 20111220263057	MIPR	SPAWARD:San Diego, CA	-	-		8.146	Oct 2012	-		8.146	Continuing	Continuing	Continuing
Aegis BMD Testing AEGIS BMD TESTING - 201112202597076	MIPR	PMRF Barking Sands:Kauai, HI	-	-		5.674	Oct 2012	-		5.674	0.000	5.674	0.000
Aegis BMD Testing AEGIS BMD TESTING - 201112202597078	MIPR	NAWC/ PM PT:MUGU, CA	-	-		5.790	Oct 2012	-		5.790	Continuing	Continuing	Continuing
Aegis BMD Testing AEGIS BMD TESTING - 201112202597082	MIPR	NSWC DD:/DAHLGREN, VA	-	-		3.883	Oct 2012	-		3.883	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing	MIPR	NSWC PHD PT.:HUENEME, CA	-	-		3.406	Oct 2012	-		3.406	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 201112202535339	MIPR	JHU/APL/ MD:COLUMBIA, MD	-	-		8.645	Oct 2012	-		8.645	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20111220253534	MIPR	NAVSEA:VA	-	-		11.014	Oct 2012	-		11.014	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 201112202535342	MIPR	SPAWAR SAN DIEGO:CA	-	-		1.586	Oct 2012	-		1.586	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 201112202535344	MIPR	CORONA:CA	-	-		1.751	Oct 2012	-		1.751	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 201112202535347	MIPR	LOCKHEED MARTIN:MOORESTOWN NJ	-	-		4.338	Oct 2012	-		4.338	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 201112202535348	MIPR	AEGIS BMD:VA	-	-		11.246	Oct 2012	-		11.246	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations,	C/CPAF	BOEING:AL	-	-		21.106	Oct 2012	-		21.106	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Models Objective Simulation Framework, Procure, Install, Test													
Subtotal			-	-			150.291			150.291			

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-	150.291	-	150.291			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTO-01 (Aegis/ THADD/ Patriot Multiple Engagement Flight Test)											△																	
FTM-21 E2 (Aegis Simulated intercept Flight Test)											△																	
FTM-21 E3 (Aegis Intercept Flight) (Salvo)											△																	
FTM-22 E2 (Aegis Intercept Flight Test)											△																	
FTM-21 E1 (Aegis Simulated Intercept Flight Test)											△																	
FTX-14 (Aegis simulated Intercept Flight Test)													△															
AA CTV-01 (Aegis Ashore Flight Test)														△														
FTM-20 E1 (Aegis Intercept Flight Test)															△													
FTM-24 (Aegis Intercept Flight Test)																△												
AA FTM-02 (Aegis Ashore Intercept Flight Test)																	△											
AA FTM-01 (Aegis Ashore Intercept Flight Test)																		△										
FTM-20 E2 (Aegis Intercept Flight Test)																			△									
FTM-25 E1 (Aegis Intercept Flight Test) (Raid)																				△								
FTM-26 E1 (Aegis Flight Test)																										△		
FTO-02 (Aegis/ THADD/ Patriot Multiple Engagement Flight Test)																											△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTO-01 (Aegis/ THADD/ Patriot Multiple Engagement Flight Test)	3	2013	3	2013
FTM-21 E2 (Aegis Simulated intercept Flight Test)	3	2013	3	2013
FTM-21 E3 (Aegis Intercept Flight) (Salvo)	3	2013	3	2013
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013
FTM-21 E1 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
FTX-14 (Aegis simulated Intercept Flight Test)	1	2014	1	2014
AA CTV-01 (Aegis Ashore Flight Test)	2	2014	2	2014
FTM-20 E1 (Aegis Intercept Flight Test)	3	2014	3	2014
FTM-24 (Aegis Intercept Flight Test)	4	2014	4	2014
AA FTM-02 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
AA FTM-01 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
FTM-20 E2 (Aegis Intercept Flight Test)	1	2015	1	2015
FTM-25 E1 (Aegis Intercept Flight Test) (Raid)	1	2015	1	2015
FTM-26 E1 (Aegis Flight Test)	3	2016	3	2016
FTO-02 (Aegis/ THADD/ Patriot Multiple Engagement Flight Test)	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MX09: <i>Aegis BMD Development Support</i>	-	12.600	15.588	-	15.588	24.262	39.716	70.331	118.990	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Aegis Ballistic Missile Defense, in accordance with negotiated agreements between the U. S. Navy and the Missile Defense Agency has identified and segregated funding for Operations and Sustainment of Aegis BMD specific elements resident aboard Aegis capable Navy ships and Land Based, Aegis Ashore Facilities. This support is identified under several categories. First, initial sustainment to Land Based SM-3 Pacific Missile Range Facility (PMRF). Second, Computer Program Sustainment, consisting of, but not limited to, review of Trouble Observation Reports (TORs) that are generated by ship crews during exercises or deployments, determination of root causes and preparation of Computer Program Change Request (CPCR) to correct TORs, updates to the in-service computer program to apply, test and certify multiple CPCRs, and tests installation of Aegis Weapon System (SPY / FCS) alignment updates (as required). Third, provide Support to Annual Integration Events (AIEs) to ensure any updated Aegis Combat System (ACS) computer programs do not degrade BMD equipped ships and provide distance and technical support for BMD equipped ships. Fourth, provide 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). Last, provide technical support documentation updates and provide an In-Service Engineering Agent (NSWC PHD) for annual technical evaluations of training, logistics, and material readiness, to include any corrective actions required prior to a BMDS mission.

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

	FY 2011	FY 2012	FY 2013
Title: Aegis BMD Operations and Support	-	12.600	15.588
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Funds for FY 2011 Accomplishments were reported in prior year budget project MD09.			
FY 2012 Plans: -Threat updates to support real world events and flight missions			
FY 2013 Plans: -Provide In-service Engineering support to Aegis BMD. -Provide operational and maintenance training for Aegis BMD ship crews.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD. -Provide initial sustainment to Land Based SM-3 Pacific Missile Range Facility (PMRF). -Provide Sustainment of BMD 3.6.1 Computer Program. -Provide Sustainment of Shipboard BMD Specific Equipment. -Provide Sustainment of SM-3 -Provide support to Phase III/IV system engineering studies			
Accomplishments/Planned Programs Subtotals	-	12.600	15.588

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	299.767	473.843	420.630		420.630	273.926	200.699	185.007	46.103	Continuing	Continuing

D. Acquisition Strategy

The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall 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 SM-3 missile and the Aegis BMD Weapon System, respectively.

Competition will be maximized for procurement of any products or services in FY 2012, as appropriate.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Operations and Support ABMD O&S - MX09	MIPR	VARIOUS:/NJ, VA, CA	-	12.600	Oct 2011	15.588	Oct 2012	-		15.588	Continuing	Continuing	Continuing
Subtotal			-	12.600		15.588		-		15.588			

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	12.600		15.588		-		15.588			

Remarks
NA

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	56.471	41.299	50.550	-	50.550	54.053	51.767	55.815	53.796	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY2012, Program Wide Support reflects a proportional decrease as a result of decreases to BMD AEGIS.

In FY 2013, Program Wide Support reflects a proportional increase as a result of increases to BMD AEGIS.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	56.471	41.299	50.550
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	56.471	41.299	50.550

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>AEGIS BMD</i>	PROJECT MD40: <i>Program-Wide Support</i>

C. Other Program Funding Summary (\$ in Millions) N/A
D. Acquisition Strategy N/A
E. Performance Metrics NA

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	105.580	96.232	51.313	-	51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	101.744	91.957	48.708	-	48.708	43.067	30.839	32.507	33.306	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	3.836	4.275	2.605	-	2.605	2.288	1.584	1.688	1.781	Continuing	Continuing

Note

The Program Office for Space Tracking and Surveillance System (STSS) relocated to Colorado Springs in the MDA Missile Defense Integration and Operations Center (MDIOC) within the Missile Defense Space Experimentation Center (MDSEC) 25 May 2011. At that time, the MDSEC was renamed to the Missile Defense Space Development Center (MDSDC).
MDA will continue to assess the health/utility of the Near Field Infrared Experiment (NFIRE) satellite on an annual basis to determine whether to continue NFIRE operations and testing.

A. Mission Description and Budget Item Justification

Space Tracking and Surveillance System (STSS)

With the successful launch of two (STSS) demonstration satellites in 2009, the agency has on-orbit capability to validate remote sensor and fire control integration to inform the design and operation of the Precision Tracking Space System (PTSS), to characterize contribution of space data into the BMDS architecture, and to provide sensor measurements and background data supporting trade studies and analyses for PTSS and Standard Missile-3 (SM-3) IIB development. Lessons learned from the two STSS demonstration satellites are guiding decisions on the development of a fiscally sustainable, continuously available, operational PTSS constellation and ground communications/processing system.

Beginning FY 2013, funding in this element is provided for STSS on-orbit operations which includes contractor operation of the STSS Demonstration Satellites and software maintenance, Government costs, BMDS Level Testing, Data Collection and Analysis activities, and the NFIRE satellites tests and experiments. Funding availability for NFIRE will be determined as the health and utility of the satellite is assessed for FY 2013.

STSS is providing risk reduction for PTSS 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 is also providing definition to BMDS Concept of Operations, timelines and performance requirements for sensor cuing and weapons engagement such as Aegis Launch On/Engage On from remote space sensors.

STSS will emphasize continued research and development to address the more sophisticated threats we expect 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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>
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Combatant Commanders. STSS is a capability development activity for the demonstration of technologies to support development and future capability delivery of the BMDS space layer, PTSS. For example, during Aegis Intercept Flight Test (FTM-15), STSS demonstrated the capability to receive an external cue and transmit that cue to the out-of-view STSS satellite, resulting in stereo midcourse tracking. This provided significant risk reduction for PTSS by closely emulating a communication, cuing, and track reporting chain for an operational engagement. In addition, the STSS Demonstration 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 Space Tracking and Surveillance System (STSS) 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 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). In FY 2013, STSS will provide real-time data to Aegis during a live fire test that will culminate in an actual Standard Missile-3 (SM-3) launching against the target using STSS data to initiate the engagement. Finally, STSS provides a new infrared sensor phenomenology for the Ballistic Missile Defense System (BMDS) that will demonstrate the benefit of the Precision Tracking Space System (PTSS) when combined with radars that will provide robustness against current and advanced countermeasures.

MDA has developed, and is testing, two STSS Demonstration Satellites to demonstrate key functions of space sensors in support of PTSS risk reduction. STSS Element Level testing is funded as part of a capabilities development program and reflected in the Program Element submission. Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components were tested early in development and this testing was necessary prior to conducting BMD level testing. Key data from the STSS Demonstration Satellites efforts continue to provide lessons learned as MDA pursues longer term space sensor needs with PTSS.

- Space sensors extend BMDS sensor coverage to a global level. The STSS has 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 sensors are not limited by basing rights issues or deployment decisions, and will allow cost effective coverage of countries and large areas not accessible from ground based sensors.
- Space based visible and Infrared (IR) sensors will complement radars and contribute to a sensor architecture more robust to countermeasures
- Space-based sensors will enable near continuous threat observation and tracking from launch to intercept, covering threats by augmenting the coverage of the BMDS radars, and providing state vectors to Command and Control, Battle Management and Communications (C2BMC) to enable interceptor fire control via multiple BMDS assets (Aegis, Ground-based Midcourse Defense (GMD), Terminal High Altitude Area Defense (THAAD))

Goals for STSS

- Risk reduction for PTSS
- Risk reduction for SM-3 IIB interceptor sensor trades
- Demonstrate C2BMC interfaces, sensor registration, communication chains and latencies to support PTSS concept of operation development

Near Field Infrared Experiment (NFIRE)

The NFIRE technology project was designed to collect near field phenomenology data for use in plume to hard body handover algorithms for boost phase interceptor programs. MDA used this data to validate the models and simulations that are fundamental to developing the guidance and endgame homing algorithms. NFIRE

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>
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is now focused on PTSS and SM-3 IIB 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 Near Field Infrared Experiment (NFIRE)

- Conduct multiple data collection missions from the Missile Defense Space Development Center (MDSDC) against ground, air, space and ballistic missile targets of opportunity
- Conduct low earth orbit satellite-to-satellite and satellite-to-ground laser communication experiments
- Provide data to validate models and simulations that are fundamental to developing the navigation, guidance and control, and endgame homing algorithms, as well as laser communication proof of concept

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

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	112.678	96.353	53.577	-	53.577
Current President's Budget	105.580	96.232	51.313	-	51.313
Total Adjustments	-7.098	-0.121	-2.264	-	-2.264
• Congressional General Reductions	-0.767	-0.121			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.000	-			
• SBIR/STTR Transfer	-3.331	-			
• Other Adjustment	-	-	-2.264	-	-2.264

Change Summary Explanation

FY 2011 adjustments include Congressional reductions (Department of Defense ((DoD)) and Full year continuing Appropriation Act, Public Law 112-10) and reflects realignment to DoD priorities.

The FY 2012 decrease reflects a congressional reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

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

R-1 ITEM NOMENCLATURE
PE 0603893C: *Space Tracking & Surveillance System*

The FY 2013 reduction reflects a realignment of DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>				PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	101.744	91.957	48.708	-	48.708	43.067	30.839	32.507	33.306	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

The Program Office for Space Tracking and Surveillance System (STSS) relocated to Colorado Springs in the MDA Missile Defense Integration and Operations Center (MDIOC) within the Missile Defense Space Experimentation Center (MDSEC) 25 May 2011. At that time, the MDSEC was renamed to the Missile Defense Space Development Center (MDSDC).

MDA will continue to assess the health/utility of the Near Field Infrared Experiment (NFIRE) satellite on an annual basis to determine whether to continue NFIRE operations and testing.

A. Mission Description and Budget Item Justification

Space Tracking and Surveillance System (STSS)

The STSS Demonstration 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 sensor data. The two Demonstration Satellites are operated 24 hours a day, 7 days a week from the ground station processing center at the MDSDC with a government and contractor team. On-orbit, STSS Demonstration Satellites continue data collection and analyses in FY 2012 and beyond striving to view all available Targets of Opportunity (TOOs) to include participation with other BMDS target and flight tests that provide demonstration of the 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 Precision Tracking Space System (PTSS) risk reduction. On-orbit sensor operations are collecting invaluable background, scene and target signatures to support PTSS and Standard Missile-3 (SM-3) IIB sensor development trade studies. STSS activities support PTSS 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 risk reduction for PTSS 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 PTSS 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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603893C: <i>Space Tracking & Surveillance System</i>	MD12: <i>Space Tracking and Surveillance System (STSS)</i>

activities will support future PTSS capability development and will enable meeting a Warfighter's requirements to include tracking missile threats and objects of interest; provide post-launch sensor cueing; integrate, fuse and correlate sensor data; engage/re-engage ballistic missile threats; and provide system modeling tools.

MDA Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting Ballistic Missile Defense System (BMDS) level testing. The Space Tracking and Surveillance System (STSS) Element Level testing is funded as part of a capabilities development program and reflected in this Program Element (PE) submission. The STSS Demonstration Satellites demonstrate key functions of space sensors. MDA will continue planning for and conducting integrated BMDS intercept tests based on track data passed from the STSS Demonstration Satellites through Command and Control, Battle Management and Communications (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 Development Center (MDSDC) and continues to collect environmental background characterization (regional/seasonal atmospheric radiance variability, day-night, land-sea clutter, clouds, auroral measurements, etc) for the Precision Tracking Space System (PTSS) sensor and Standard Missile-3 (SM-3) IIB seeker development programs, hyper-temporal short wave infrared data to support research and development of early launch detection and tracking capabilities, and earth limb radiance measurements to support improvement of environmental models. The NFIRE satellite also carries a Laser Communication Terminal to conduct communication experiments with the German Terra SAR-X satellite. These communications experiments test low earth orbit satellite-to-ground and satellite-to-satellite laser communications capabilities for potential incorporation into the BMS. The laser communication experiments will be conducted on a non-interference basis with other MDA missions. MDA will continue to assess the health/utility of the NFIRE satellite on an annual basis to determine whether to continue NFIRE operations and testing.

Lessons learned and data gathered from the STSS program and the NFIRE program will continue to provide valuable information for PTSS 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 2011	FY 2012	FY 2013
Title: Demonstration Satellites	72.384	70.163	45.689
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
- Completed on-orbit calibration and system performance testing			
- Achieved a number of firsts in demonstrating capability of space-based sensors for the BMDS			
-- First ever birth-to-death tracking of a missile target from low earth orbit (Aegis Simulated Intercept Flight Test (FTM-16 E1))			
-- First stereo collection on birth-to-death missile flight and providing the missile tracking data to the BMDS in near real-time (Sensors Flight Test (FTX-16 E1))			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-- First on-orbit demonstration of receipt of an external cue and the use of the Space Tracking and Surveillance System (STSS) crosslink to transmit that cue to the out-of-view satellite, resulting in stereo midcourse tracking and first observation of missile intercept from low earth orbit (Aegis Intercept Flight Test (FTM-15))</p> <p>-- First simulated remote Aegis engagement authorization based on STSS trajectory (Aegis Intercept Flight Test (FTM-15))</p> <p>-- First stereo acquisition sensor-to-track sensor hand-off (Air-Launched Target Return to Flight (FTX-17))</p> <p>- Conducted missile tracking experiments as identified in the test specific sections, BMDS Level Testing and Element Integration and Testing, that follow</p> <p>- FY 2011 testing of the STSS Demonstration Satellites continued the execution of the STSS-related Critical Engagement Conditions (CECs)/Empirical Measurement Events (EMEs)</p> <p>-- Collection of test data from CECs/EMEs used in updating and verification, validation, and accreditation of modeling and simulation representations for assessing system performance</p> <p>- The STSS program office relocated from the Space and Missile Systems Center (SMC) to the Missile Defense Space Development Center (MDSDC) in Colorado Springs, CO</p> <p>- Conducted independent government validation of STSS Demonstration Satellites data in the STSS Demo Analysis Center</p> <p>FY 2012 Plans:</p> <p>- Conduct missile tracking experiments as identified in the test specific sections, BMDS Level Testing and Element Integration and Testing, that follow</p> <p>- FY 2012 testing of the STSS Demonstration Satellites continues the execution of the STSS-related CECs/EMEs</p> <p>-- Collection of test data from CECs/EMEs used in updating and verification, validation, and accreditation of modeling and simulation representations for assessing system performance</p> <p>- Conduct independent government validation of STSS Demonstration Satellites data in the STSS Demo Analysis Center</p> <p>FY 2013 Plans:</p> <p>- Testing includes SM-3 intercept using STSS as a remote sensor.</p> <p>- Conduct missile tracking experiments as identified in the test specific sections, BMDS Level Testing and Element Integration and Testing</p> <p>- FY 2013 testing of the STSS Demonstration Satellites continues the execution of the STSS-related CECs/EMEs</p> <p>-- Collection of test data from CECs/EMEs used in updating and verification, validation, and accreditation of modeling and simulation representations for assessing system performance</p> <p>- Conduct independent government validation of Space Tracking and Surveillance System (STSS) Demonstration Satellites data at the Missile Defense System Development Center (MDSDC)</p> <p>- Perform satellite functionality testing and calibration as part of the satellite operations</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
- In FY 2013, testing begins to transition from dedicated, more costly, first-time efforts to missions collecting data to verify earlier results. These verifications further strengthen BMDS-related modeling and simulation as well as support development of future systems design and concept of operations.				
Title: BMDS Level Testing		18.838	14.645	3.019
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: Planned and executed STSS participation in BMDS flight tests. Collection from a variety of test targets and conditions enable a statistically relevant database to be constructed to support future space system design.				
<ul style="list-style-type: none"> - Tracked five BMDS targets -- Aegis Simulated Intercept Flight Test (JTFM-04 E1): Aegis 4.0.1 simulated intercept of a surrogate separating Medium-Range Ballistic Missile (MRBM) --- Collected data demonstrating stereo track sensor tracking --- Collected data demonstrating autonomous fully calibrated stereo acquisition sensor Object Sighting Messages --- Used data to analyze simulation of Aegis Launch-On STSS track --- Fused STSS Object Sighting Message data in the Enterprise Sensors Laboratory and passed data to X-Lab using post-test playback of recorded data -- Aegis Simulated Intercept Flight Test (FTM-16 E1): Aegis 4.0.1 simulated Standard Missile-3 (SM-3) Block IB intercept of a Short-Range Ballistic Missile (SRBM) target with Associated Objects --- Performed first demonstration of birth-to-death tracking of missile target from low earth orbit --- Collected data to analyze real-time sharing of track messages to the BMDS --- Simulated Aegis (Hardware-in-the-Loop) Engage-On STSS track --- Conducted post-test assessment to support STSS providing precision cue to the Terminal High Altitude Area Defense in post-test playback of recorded data -- Sensors Flight Test (FTX-16 E1): Aegis 3.6.1 simulated Launch on Remote engagement of a ballistic missile using STSS data in the Fire Control Solution in 20 post-test hardware-in-the-loop playbacks of recorded data --- Conducted first-ever stereo collection on birth-to-death missile flight --- Demonstrated ability to provide missile tracking data to the BMDS in near real-time -- Aegis Intercept Flight Test (FTM-15): Aegis 3.6.1 SM-3 Block IA engagement of an Intermediate-Range Ballistic Missile (IRBM) with Remote Engagements Authorized 				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>--- Demonstrated first on-orbit receipt of external cue and ability to crosslink the cue to the out-of-view satellite resulting in stereo midcourse tracking and the first missile intercept observation from low earth orbit</p> <p>--- Collected data to analyze Space Tracking and Surveillance System (STSS) emerging threat detection and threat capability</p> <p>--- Fused STSS Object Sighting Message and other sensors data in the Enterprise Sensors Laboratory and pass to the X-Lab to provide a precision cue using post-test playback of recorded data as risk reduction for future Launch on Remote</p> <p>-- Air-Launched Target Return to Flight (FTX-17): Return to flight of the Short-Range Air Launch Target</p> <p>--- Conducted first-ever stereo automatic onboard acquisition sensor-to-track sensor handover</p> <p>--- Collected data to analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, and Multiple Objects in a Scene</p> <p>--- STSS Object Sighting Messages fused in the Enterprise Sensors Laboratory and passed to the X-Lab to produce Ballistic Missile Defense System (BMDS) system tracks</p> <p>- Conducted planning for integrated BMDS intercept tests based on track data passed from the STSS Demonstration Satellites through Command and Control, Battle Management and Communications (C2BMC) to Aegis or other weapon systems</p> <p>- Planned and participated in available Targets of Opportunity (TOOs)</p> <p>- Planned and coordinated range activities to support the MDA Integrated Master Test Plan (IMTP)</p> <p>- Continued STSS Demo Analysis Center participation in BMDS testing and collection of scientific data for refinement of BMDS-relevant models</p> <p><i>FY 2012 Plans:</i></p> <p>- Demonstrate first simultaneous tracking of two targets with STSS during Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements</p> <p>-- Both STSS satellites accomplish acquisition sensor-to-track sensor handoff and tracked both the Medium and Short-Range Ballistic Missiles (SRBM) in stereo. Also, internally sent cues to both STSS satellites to acquire and track the Short-Range Ballistic Missile in midcourse.</p> <p>-- At the same time, in shadow mode, transmit data through the Enterprise Sensors Laboratory and X-Lab to the Space and Naval Warfare Systems Command (SPAWAR) lab (Aegis 3.6.1) and accomplished Aegis Remote Engagement Authorized (REA) using STSS data.</p> <p>- Plan and execute STSS participation in BMDS flight tests. Collection from a variety of test targets and conditions enable a statistically relevant database to be constructed to support future space system design.</p> <p>- Current STSS participation in the IMTP is planned to include the following BMDS flight tests with STSS striving to meet reasonable expectations to view these as well as seeking opportunities to participate in other IMTP events:</p> <p>-- Ground-based Midcourse Defense Controlled Test Vehicle (GM CVT-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test</p> <p>--- Collect data to analyze STSS cold-body target tracking capability</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-- Aegis Intercept Flight Test (FTM-16 E2a): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB intercept of a SRBM target with Associated Objects</p> <p>--- Demonstrate birth-to-death tracking of missile target from low earth orbit</p> <p>--- Collect data to analyze real-time sharing of track messages to the BMDS</p> <p>--- Simulate Aegis (Hardware-in-the-Loop) Launch-On STSS track</p> <p>-- Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 intercept of a Medium-Range Ballistic Missile (MRBM) target with a Standard Missile-3 (SM-3) Block IB</p> <p>--- Simulate Aegis Engage-On Space Tracking and Surveillance System (STSS) in shadow mode</p> <p>--- Fuse STSS Object Sighting Message and other sensors data in the Enterprise Sensors Laboratory and pass to the X-Lab to provide a simulated Aegis Engage-On fused track</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>-- Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a Short-Range Ballistic Missile (SRBM) target with a SM-3 Block IB missile</p> <p>--- Simulate Aegis Engage-On STSS in shadow mode</p> <p>--- Fuse STSS Object Sighting Message and other sensors data in the Enterprise Sensors Laboratory and pass to the X-Lab to provide a simulated Aegis Engage-On fused track</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>-- Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of Intermediate-Range Ballistic Missile (IRBM) target based on results from FTG-06a (Ground-based Midcourse Defense intercept of IRBM with Associated Objects, Medium Closing Velocity using Exo-atmospheric Kill Vehicle (EKV) Capability Enhancement-II) Failure Investigation Team</p> <p>--- Demonstrate STSS ability to precision cue BMDS radars and receive system cues live during the event and post-test using playback of recorded data</p> <p>--- Collect data to analyze STSS cold-body target tracking capability</p> <p>--- STSS Object Sighting Messages will be fused in the Enterprise Sensors Laboratory and passed to the X-Lab to produce BMDS system tracks</p> <p>-- Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>--- Fuse STSS Object Sighting Message and other sensors data in the Enterprise Sensors Laboratory and pass data to X-Lab using post-test playback of recorded data</p>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>--- Simulate Aegis Launch-On STSS in shadow mode --- Demonstrate STSS ability to precision cue BMDS radars and receive system cues live during the event and post-test using playback of recorded data - Plan and participate in available Targets of Opportunity (TOOs) - Collect both STSS and Overhead Persistent Infrared (OPIR) data live during TOOs and MDA Flight Tests, then play back OPIR data through the Enterprise Sensors Laboratory and pass data to X-Lab. The X-Lab will then provide an OPIR system cue to the STSS track sensor, the STSS track sensor will then point to the target based solely on the OPIR cue. This will validate STSS Cueing Campaign and demonstrate the viability of the Precision Tracking Space System (PTSS) Concept of Operations. - Conduct planning for integrated BMDS intercept test based on track data passed from the STSS Demonstration Satellites through Command and Control, Battle Management and Communications (C2BMC) to Aegis or other weapon systems - Continue Space Tracking and Surveillance System (STSS) Demo Analysis Center participation in BMDS testing and collection of scientific data for refinement of BMDS-relevant models, demonstration and trade space determination for Precision Tracking Space System (PTSS), and development support for the Standard Missile-3 (SM-3) Block IIB interceptor</p> <p>FY 2013 Plans:</p> <p>- Testing includes SM-3 intercept using Space Tracking and Surveillance System (STSS) as a remote sensor. -- STSS will provide to an Aegis 3.6.x or 4.0.1 ship the Quality of Service data track that will initiate a Remote Engagement Authorized (REA) launch of a SM-3 Block IB against an actual Medium Range Ballistic Missile (MRBM) target - Plan and execute STSS participation in BMDS flight tests. Collection from a variety of test targets and conditions enable a statistically relevant database to be constructed to support future space system design. - Current STSS participation in the Integrated Master Test Plan (IMTP) is planned to include the following BMDS flight tests with STSS striving to meet reasonable expectations to view these as well as seeking opportunities to participate in other IMTP events: -- Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three Short-Range Ballistic Missiles (SRBMs) --- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene --- Simulate Aegis (Hardware-in-the-Loop) Engage-On STSS track --- Conduct post-test assessment to support STSS providing precision cue through post-test playback of recorded data --- Demonstrate STSS precision cue of radar in post-test playback of recorded data -- Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs --- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene --- Simulate Aegis (Hardware-in-the-Loop) Engage-On STSS track</p>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>--- Conduct post-test assessment to support STSS providing precision cue through post-test playback of recorded data</p> <p>--- Demonstrate STSS precision cue of radar in post-test playback of recorded data</p> <p>-- Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>--- Simulate Aegis (Hardware-in-the-Loop) Engage-On STSS track</p> <p>--- Conduct post-test assessment to support STSS providing precision cue through post-test playback of recorded data</p> <p>--- Demonstrate STSS precision cue of radar in post-test playback of recorded data</p> <p>-- Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 SM-3 Block IB engagement of a SRBM</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, and Post Boost Detection</p> <p>-- Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTO-1): BMDS Operational Flight Test against SRBM and MRBM targets</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>--- Fuse Space Tracking and Surveillance System (STSS) Object Sighting Message and other sensors data in the Enterprise Sensors Laboratory and pass data to X-Lab using post-test playback of recorded data</p> <p>--- Simulate Aegis Launch-On STSS in shadow mode</p> <p>--- Demonstrate STSS ability to precision cue BMDS radars and receive system cues live during the event and post-test using playback of recorded data</p> <p>- Plan and participate in available Targets of Opportunity (TOOs)</p> <p>- Collect both STSS and Overhead Persistent Infrared (OPIR) data live during TOOs and MDA Flight Tests, then play back OPIR data through the Enterprise Sensors Laboratory and pass data to X-Lab. The X-Lab will then provide an OPIR system cue to the STSS Track sensor, the STSS Track sensor will then point to the target based solely on the OPIR cue. This will validate STSS Cueing Campaign and demonstrate the viability of the Precision Tracking Space System (PTSS) Concept of Operations.</p> <p>- Continue participation in BMDS testing and collection of scientific data for refinement of BMDS-relevant models, demonstration and trade space determination for PTSS, and development support for the Standard Missile-3 (SM-3) Block IIB interceptor</p> <p>- In FY 2013, testing begins to transition from dedicated, first time efforts to less costly missions collecting data to verify earlier results. These verifications further strengthen BMDS-related modeling and simulation, as well as support development of future systems design and concept of operations.</p>			
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Title: Near Field Infrared Experiment (NFIRE)	5.075	4.073	-
Articles:	0	0	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Continued On-Orbit Operations at the Missile Defense Space Development Center (MDSDC) to support data collection and analysis on targets of opportunity - Conducted cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity -- Executed 116 Data Collection Events in support of missile defense requirements definition for future space-based systems --- Data Collection Events included: 51 Earth Limb Background, Clutter and Aurora characterization tests in support of the PTSS design, 19 maintenance and calibrations, 14 Intelligence Collections, 9 Flight Tests including BMDS Flight Tests in support of MDA and other users, 7 software improvements, 6 Targets of Opportunity, 6 Cueing Experiments with stars and ground sources, 3 Ground Static Rocket Motor Firings, and 1 Resident Space Object (RSO) data collection - Continued laser communication experiments to assess viability of the technology -- Performed 54 space-to-space links with the German Terra SAR-X satellite recording 4,405.89 seconds of total communications with 3,360 seconds of bi-directional communication having a maximum duration of 423 second. Each 6.1 seconds of data is equivalent to a DVD's worth of data. - Continued to support, as requested by Air Force Space Command (AFSPC) and other agencies, Space Situational Awareness - Assessed satellite health/utility for potential, future utilization <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue On-Orbit Operations at the Missile Defense Space Development Center (MDSDC) to support data collection and analysis on targets of opportunity - Conduct cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity - Continue laser communication experiments to assess viability of the technology - Continue to support, as requested by Air Force Space Command (AFSPC) and other agencies, Space Situational Awareness - Assess satellite health/utility for potential, future utilization <p>FY 2013 Plans:</p> <p>Funding for On-Orbit Operations and cooperative tests are planned to continue pending a positive assessment of the Near Field Infrared Experiment (NFIRE) satellite's health and utility. Participation is planned for tests in the Integrated Master Test Plan to include SM-3 intercept using Space Tracking and Surveillance System (STSS) as a remote sensor.</p>			
Title: Element Integration and Testing		5.447	3.076
Articles:		0	0
		-	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Completed remaining 23 functionality tests for early on-orbit testing - Completed Space Vehicle 1's track sensor line of sight calibration - Conducted planning and execution of 182 Data Collection Events in support of missile defense requirements definition for future space-based systems -- Data Collection Events included: 2 Static Motor Rocket Firings, 4 area of interest, 2 Sensor Registration Health & Status Monitoring star collects, 11 Battlespace Awareness Campaign collections, 38 Midcourse Tracking of Resident Space Objects, 74 Technical Intelligence Campaign collections, 18 Geo-Transfer Orbit Campaign collections, 8 collections of the Space Shuttle, and 25 Earth Limb Characterization collections in support of the Precision Tracking Space System design - Conducted periodic acquisition/calibration of Demonstration Satellites with ground laser source <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Conduct planning and execution of Missile Surrogate Testing (Resident Space Objects) - Conduct periodic acquisition/calibration of Demonstration Satellites with ground laser source <p>FY 2013 Plans:</p> <p>In FY 2013, funding and activity associated with performing satellite functionality testing and calibration is captured above under Demonstration Satellites and conducted as part of satellite operations.</p>			
Accomplishments/Planned Programs Subtotals	101.744	91.957	48.708

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	10.569	7.940	6.912		6.912	6.576	6.610	7.219	7.371	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	0.000	2,763.751
• 0604883C: <i>Precision Tracking Space System</i>	36.693	80.723	297.375		297.375	267.505	285.529	326.073	354.190	Continuing	Continuing

D. Acquisition Strategy

The Space Tracking and Surveillance System (STSS) program follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, and evolutionary acquisition. The STSS Demonstration Satellites effort utilizes a single prime contractor, Northrop Grumman Aerospace Systems (NGAS), formerly known as Northrop Grumman Space Technology (NGST), with the subcontractor Raytheon providing the sensor payload. The contract for the STSS Demonstration Satellites effort was awarded in third quarter FY 2002. 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.

The acquisition strategy shifted from the launch phase to the operations and testing of the STSS Demonstration satellites. Options for Operations and Testing were definitized April 2011.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Demonstration Satellites Capability Based R&D	SS/CPAF	NGAS:Redondo Beach, CA	444.353	56.595	Oct 2011	35.491	Oct 2012	-		35.491	Continuing	Continuing	Continuing
Demonstration Satellites Systems Engineering	FFRDC	Aerospace:Los Angeles AFB CA, Schriever AFB CO	43.614	3.374	Oct 2011	3.429	Oct 2012	-		3.429	Continuing	Continuing	Continuing
Demonstration Satellites STSS Support to Missile Defense Space Development Center (MDSDC)	C/CPAF	MDIOC:CO	4.990	3.683	Dec 2011	-		-		-	0.000	8.673	8.673
Near Field Infrared Experiment (NFIRE) Prime Contract	SS/CPAF	Orbital Sciences Corporation:AZ	8.391	2.977	Nov 2011	-		-		-	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) Mission Planning/Data Reduction	MIPR	MIT/LL:MA	3.294	1.096	Nov 2011	-		-		-	0.000	4.390	4.390
Subtotal			504.642	67.725		38.920		-		38.920			

Remarks

Funding for Capability Based R&D efforts is placed on contract for Northrop Grumman Aerospace Systems (NGAS) to assist in conducting mission planning and operations of the Demonstration Satellites. BMD Systems Engineering provides System Description Documents and System Specifications for elements to design, build, integrate and test BMDS components. These products optimize performance at the system level and further ensure that the assessment of the designed BMD System is based on sufficient ground and flight testing. Compliance of the Space Tracking and Surveillance System (STSS) to BMD System level requirements is monitored in a series of requirements and design reviews both at the system and element levels. Systems Engineering support is provided by Aerospace directly to the Demonstration Satellites effort. STSS Support to Missile Defense Space Development Center (MDSDC) funds support cost associated with the satellite operations conducted at the MDSDC. This support is obtained through the Joint National Integration Center (JNIC) Research and Development Contract (JRDC). NFIRE funding will be forwarded to several contractors and government organizations to include, but not limited to Orbital Sciences Corporation (formerly General Dynamics) and the Air Force Research Laboratory. Funding covers support for operations, testing, and analysis activities. The Target Value of Contract above for the NFIRE Prime Contract reflects continuing pending negotiation to extend operations, testing, and support for the NFIRE satellite based on health and utility assessment of the satellite.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Demonstration Satellites Program Mission Support	Various	SMC:CA	18.832	1.425	Oct 2011	0.727	Oct 2012	-		0.727	Continuing	Continuing	Continuing
Demonstration Satellites Other Government Agency (OGA) Civilian	MIPR	SMC:CA	9.547	2.784	Oct 2011	2.400	Oct 2012	-		2.400	Continuing	Continuing	Continuing
Demonstration Satellites MDA Civilian	Allot	MDA:AL	5.044	1.672	Oct 2011	2.314	Oct 2012	-		2.314	Continuing	Continuing	Continuing
Demonstration Satellites Contract Support Services (CSS)	C/BPA	MDA:AL	11.184	0.630	Nov 2011	1.328	Oct 2012	-		1.328	Continuing	Continuing	Continuing
Subtotal			44.607	6.511		6.769		-		6.769			

Remarks

Demonstration Satellites Support Costs include the following: Program Mission Support to include funding personnel travel, training, and supplies; OGA Civilian personnel for reimbursement of Air Force Personnel costs that directly support the Space Tracking and Surveillance System (STSS) program, for the Demonstration Satellites programs and functions at the Missile Defense Space Development Center (MDSDC); MDA Civilian Salaries to support program office management; and CSS Costs that provide for administrative, engineering, logistics and financial management/cost estimating support services. In FY2012, STSS will have completed transition to the MDSDC and will fund for IT Network Support, telephone operations and maintenance, hardware and software purchases and maintenance through the Missile Defense Integration and Operations Center (MDIOC) service contracts.

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing STSS Demo Analysis Center (SDAC) - Government Verification & Validation (V&V)	MIPR	Various:Various	1.845	1.409	Jan 2012	-		-		-	0.000	3.254	3.254
BMDS Level Testing BMDS Integration-Test Engineering and Resources	SS/CPAF	NGAS:Redondo Beach, CA	9.603	7.914	Dec 2011	3.019	Oct 2012	-		3.019	Continuing	Continuing	Continuing
BMDS Level Testing Systems Engineering	FFRDC	Aerospace:Los Angeles AFB CA	16.142	5.322	Oct 2011	-		-		-	0.000	21.464	21.464

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Element Integration and Testing Ground Support for Acquisition Line-of-Sight Calibration	MIPR	AFRL:Kirtland AFB NM	1.283	0.680	Jan 2012	-		-		-	0.000	1.963	1.963
Element Integration and Testing STSS Capability Based R&D-Test Support	SS/CPAF	NGAS:Redondo Beach, CA	18.246	2.396	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Subtotal			47.119	17.721		3.019		-		3.019			

Remarks
 BMDS Level Testing: As the Space Tracking and Surveillance System (STSS) moves into FY 2012, engineering costs associated with BMDS Level Test increases to complete necessary analyses of data collected in FY 2011; conduct mission planning, test execution, and data analysis of FY 2012 test events; and prepare and conduct pre-mission planning as necessary for upcoming FY 2013 test events. In FY 2013, testing begins to transition from dedicated, first-time efforts to missions collecting data to verify earlier results and further strengthen BMDS-related modeling and simulation as well as supporting development of future systems design and concept of operations. Funding for the STSS Demo Analysis Center maximizes return on investment to further the development of the future BMDS space layer. Costs covered include the purchase and maintenance of software tools for mission planning and simulation, data management and Overhead Persistent Infrared (OPIR) data analysis as well as test engineering and analysis support for BMDS testing and collection of scientific data for refinement of BMDS-relevant models. BMDS Integration-Test Engineering and Resources funding covers: test engineering to conduct pre-mission planning, execution, and post-mission analyses for testing events associated with STSS participation in BMDS flight tests. Funding for Systems Engineering is allocated to Aerospace to provide independent test engineering to: assist in requirements definition; mission planning and tasking capability for BMDS missile flight tests and targets of opportunity; analyze mission results and prepare detailed reports; analyze data for use in anchoring and validating the modeling and simulation tool System Performance Evaluation Tool (SPET) and other MDA models; aid in issue resolution; support interface with design engineers to understand and develop operating and test procedures; and support interface with other government agencies. Element Integration and Testing: Funding for Ground Support for Acquisition Line-of-Sight (LOS) Calibration goes to the Air Force Research Laboratory (AFRL) to provide laser ground source to perform line-of-sight calibration of acquisition sensors on board the two STSS Demonstration Satellites. The STSS Capability Based R&D-Test Support funding covers costs associated with the STSS Prime Contractor providing satellite functionality testing and calibration support. As the level of specific, dedicated test support transitions into data collection testing to further support and refine BMDS-related modeling and simulation, the satellite functionality testing and calibration will be included as part of the satellite operations captured above in the Capability Based R&D effort performed by the STSS Prime Contractor under Product Development.

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	596.368	91.957	48.708	-	48.708			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Aegis Simulated Intercept Flight Test (JFTM-04 E1): Aegis 4.0.1 simulated intercept of a surrogate separating Medium-Range Ballistic Missile (MRBM)	◆																											
Aegis Simulated Intercept Flight Test (FTM-16 E1): Aegis 4.0.1 simulated Standard Missile-3 (SM-3) Block 1B intercept of a Short-Range Ballistic Missile (SRBM) target with Associated Objects		◆																										
Sensors Flight Test (FTX-16 E1): Aegis 3.6.1 simulated Launch on Remote Engagement of a ballistic missile using Space Tracking and Surveillance System (STSS) data in the Fire Control Solution		●																										
Aegis Intercept Flight Test (FTM-15): Aegis 3.6.1 SM-3 Block 1A engagement of an Intermediate-Range Ballistic Missile (IRBM) with Remote Engagements Authorized			●																									
Air-Launched Target Return to Flight (FTX-17): Return to flight of the Short-Range Air Launch Target				◆																								
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements					●																							
Ground-based Midcourse Defense Controlled Test Vehicle (GM CVT-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test								◇																				
Aegis Intercept Flight Test (FTM-16 E2a)								◇																				
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 Standard Missile-3 (SM-3) Block 1B engagement of a SRBM target, STSS Engage on Remote Shadow Mode								◇																				
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block 1B missile, STSS Launch on Remote Shadow Mode									◇																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a								○																				
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets								○																				
Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs												◇																
Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs												◇																
Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of Short Range Ballistic Missile (SRBM)												◇																
Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB intercept of a SRBM												◇																
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile (MRBM) targets												○																
Aegis Simulated Intercept Flight Test (FTX-14): Aegis 4.0.1 SM-3 Block IB simulated engagement of a Wildcat Target																◇												
Arrow System Test (AST-15): First Arrow 3 engagement test																◇												
Aegis Flight Test (SCDPTV-01): SM-3 Block IIA 1st, 2nd, and 3rd stage performance test																◇												
Aegis Ashore Flight Test (AA CVT-01)																◇												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 Intercept Flight Test (FTM-20 E1): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block 1B missile																												
Ground-based Midcourse Defense Intercept Flight Test (FTG-08): Intercept of Intermediate-Range Ballistic Missile target with Associated Objects using 2-stage booster with first generation avionics																												
Aegis Ashore Intercept Flight Test (AA FTM-01)																												
Aegis Ashore Intercept Test Flight (AA FTM-02)																												
Aegis Flight Test, Standard Missile (FTM-24)																												
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM																												
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity (TOO)- 1Q2011	▲																											
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity (TOO)- 2Q2011		▲																										
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2011			▲																									
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2011				▲																								
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 1Q2012					▲																							
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 2Q2012						△																						
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2012							△																					
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity (TOO) - 4Q2012								△																				
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2013									△																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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- 2Q2013											△																	
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2013												△																
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2013													△															
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2014														△														
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2014															△													
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2014																△												
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2014																	△											
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2015																		△										
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2015																			△									
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2015																				△								
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2015																					△							
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2016																						△						
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2016																							△					
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2016																								△				
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2016																									△			
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 1Q2017																											△	
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2017																												△

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NFIRE LCT Experiments/Operations - 4Q2011				▲																								
NFIRE LCT Experiments/Operations - 1Q2012					▲																							
NFIRE LCT Experiments/Operations - 2Q2012						△																						
NFIRE LCT Experiments/Operations - 3Q2012							△																					
NFIRE LCT Experiments/Operations - 4Q2012								△																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Simulated Intercept Flight Test (JFTM-04 E1): Aegis 4.0.1 simulated intercept of a surrogate separating Medium-Range Ballistic Missile (MRBM)	1	2011	1	2011
Aegis Simulated Intercept Flight Test (FTM-16 E1): Aegis 4.0.1 simulated Standard Missile-3 (SM-3) Block IB intercept of a Short-Range Ballistic Missile (SRBM) target with Associated Objects	2	2011	2	2011
Sensors Flight Test (FTX-16 E1): Aegis 3.6.1 simulated Launch on Remote Engagement of a ballistic missile using Space Tracking and Surveillance System (STSS) data in the Fire Control Solution	2	2011	2	2011
Aegis Intercept Flight Test (FTM-15): Aegis 3.6.1 SM-3 Block IA engagement of an Intermediate-Range Ballistic Missile (IRBM) with Remote Engagements Authorized	3	2011	3	2011
Air-Launched Target Return to Flight (FTX-17): Return to flight of the Short-Range Air Launch Target	4	2011	4	2011
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements	1	2012	1	2012
Ground-based Midcourse Defense Controlled Test Vehicle (GM CVT-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test	3	2012	3	2012
Aegis Intercept Flight Test (FTM-16 E2a)	3	2012	3	2012
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 Standard Missile-3 (SM-3) Block 1B engagement of a SRBM target, STSS Engage on Remote Shadow Mode	3	2012	3	2012
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block IB missile, STSS Launch on Remote Shadow Mode	4	2012	4	2012
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a	4	2012	4	2012
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs	3	2013	3	2013
Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs	3	2013	3	2013
Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of Short Range Ballistic Missile (SRBM)	3	2013	3	2013
Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB intercept of a SRBM	3	2013	3	2013
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile (MRBM) targets	3	2013	3	2013
Aegis Simulated Intercept Flight Test (FTX-14): Aegis 4.0.1 SM-3 Block IB simulated engagement of a Wildcat Target	1	2014	1	2014
Arrow System Test (AST-15): First Arrow 3 engagement test	1	2014	1	2014
Aegis Flight Test (SCDPTV-01): SM-3 Block IIA 1st, 2nd, and 3rd stage performance test	1	2014	1	2014
Aegis Ashore Flight Test (AA CVT-01)	2	2014	2	2014
Aegis Intercept Flight Test (FTM-20 E1): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block IB missile	3	2014	3	2014
Ground-based Midcourse Defense Intercept Flight Test (FTG-08): Intercept of Intermediate-Range Ballistic Missile target with Associated Objects using 2-stage booster with first generation avionics	3	2014	3	2014
Aegis Ashore Intercept Flight Test (AA FTM-01)	4	2014	4	2014
Aegis Ashore Intercept Test Flight (AA FTM-02)	4	2014	4	2014
Aegis Flight Test, Standard Missile (FTM-24)	4	2014	4	2014
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM	4	2014	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity (TOO)- 1Q2011	1	2011	1	2011
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity (TOO)- 2Q2011	2	2011	2	2011
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2011	3	2011	3	2011
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2011	4	2011	4	2011
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 1Q2012	1	2012	1	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 2Q2012	2	2012	2	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2012	3	2012	3	2012
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity (TOO) - 4Q2012	4	2012	4	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2013	1	2013	1	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
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2013	4	2013	4	2013
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2014	1	2014	1	2014
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2014	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
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2015	1	2015	1	2015
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2015	2	2015	2	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2015	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2015	4	2015	4	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2016	1	2016	1	2016
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2016	2	2016	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT 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/TOO- 3Q2016	3	2016	3	2016
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2016	4	2016	4	2016
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 1Q2017	1	2017	1	2017
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2017	2	2017	2	2017
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2017	3	2017	3	2017
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2017	4	2017	4	2017
STSS Demonstration Satellites On-Orbit Operations - 1Q2011-4Q2011	1	2011	4	2011
STSS Demonstration Satellites On-Orbit Operations - 1Q2012-4Q2012	1	2012	4	2012
STSS Demonstration Satellites On-Orbit Operations - 1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites On-Orbit Operations - 1Q2014-4Q2014	1	2014	4	2014
STSS Demonstration Satellites On-Orbit Operations - 1Q2015-4Q2015	1	2015	4	2015
STSS Demonstration Satellites On-Orbit Operations - 1Q2016-4Q2016	1	2016	4	2016
STSS Demonstration Satellites On-Orbit Operations - 1Q2017-4Q2017	1	2017	4	2017
Near Field Infrared Experiment (NFIRE) - TOO- 1Q2011	1	2011	1	2011
NFIRE - Targets of Opportunity - 2Q2011	2	2011	2	2011
Near Field Infrared Experiment (NFIRE) - TOO- 3Q2011	3	2011	3	2011
NFIRE - TOO- 4Q2011	4	2011	4	2011
NFIRE - TOO- 1Q2012	1	2012	1	2012
NFIRE - TOO-2Q2012	2	2012	2	2012
NFIRE - TOO- 3Q2012	3	2012	3	2012
NFIRE - TOO- 4Q2012	4	2012	4	2012
NFIRE On-Orbit Operations - 1Q2011-4Q2011	1	2011	4	2011
Near Field Infrared Experiment (NFIRE) On-Orbit Operations - 1Q2012-4Q2012	1	2012	4	2012
NFIRE Laser Communications Terminal (LCT) Experiments/Operations - 1Q2011	1	2011	1	2011
NFIRE LCT Experiments/Operations - 2Q2011	2	2011	2	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NFIRE LCT Experiments/Operations - 3Q2011	3	2011	3	2011
NFIRE LCT Experiments/Operations - 4Q2011	4	2011	4	2011
NFIRE LCT Experiments/Operations - 1Q2012	1	2012	1	2012
NFIRE LCT Experiments/Operations - 2Q2012	2	2012	2	2012
NFIRE LCT Experiments/Operations - 3Q2012	3	2012	3	2012
NFIRE LCT Experiments/Operations - 4Q2012	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	3.836	4.275	2.605	-	2.605	2.288	1.584	1.688	1.781	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012, Program Wide Support reflects a proportional increase as a result of adjustments made to the Space Tracking and Surveillance System (STSS).

In FY 2013, Program Wide Support reflects a proportional decrease as a result of decreases made to the Space Tracking and Surveillance System (STSS).

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	3.836	4.275	2.605
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	3.836	4.275	2.605

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603893C: <i>Space Tracking & Surveillance System</i>	PROJECT MD40: <i>Program-Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	10.569	7.940	6.912	-	6.912	6.576	6.610	7.219	7.371	Continuing	Continuing
MD33: <i>MD Space Exp Center (MDSEC)</i>	10.162	7.940	6.561	-	6.561	6.244	6.286	6.862	6.996	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	0.407	-	0.351	-	0.351	0.332	0.324	0.357	0.375	Continuing	Continuing

Note

The Program Office for Space Tracking and Surveillance System (STSS) relocated to Colorado Springs in the MDA Missile Defense Integration and Operations Center (MDIOC) within the Missile Defense Space Experimentation Center (MDSEC) 25 May 2011. At that time, the MDSEC was renamed to the Missile Defense Space Development Center (MDSDC).

A. Mission Description and Budget Item Justification

The MDSDC, formerly MDSEC, facilitates the integration and demonstration of missile defense space capabilities with other defense and national security systems. The MDSDC infrastructure provides MDA users capabilities for supporting flight tests, conducting concept development, demonstrations, experiments, and developing and evaluating algorithms within a multi-security level, collaborative environment. As part of a collaborative environment, the MDSDC conducts studies and experiments with Air Force Space Command seeking to optimize the Precision Tracking Space System (PTSS) support for Space Situational Awareness (SSA).

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

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

Goals for the MDSDC:

- Develop and refine ground operational concepts for MDA space systems, sensors, data, services, and networks
- Conduct satellite operations for MDA space sensor satellites (STSS, NFIRE)
- Operate and refine the MDSDC Interchange System (MIS) to provide robust access to MDA space data and MDA user net-centric sensor tasking request interface
- Develop a security environment to support data integration, test, demonstrations, and experiments across multiple security levels
- Provide a Test Integration Lab (TIL) to support testing, demonstrations, experiments, integration and algorithm development
- Demonstrate connectivity and integration of space sensor layer data for the BMDS community and external users
- Conduct experiments to test algorithm validity for Missile Defense space systems
- Conduct studies and experiments with Air Force Space Command to optimize PTSS support for SSA

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i>
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- Develop and demonstrate real Infrared/Radar data fusion (System Track)
 - Conduct experiments and demonstrate STSS discrimination capabilities (identifying object details to determine the target from debris or decoys)
 - Provide infrastructure to demonstrate integration of missile defense space capabilities with other defense and national security systems
- MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS).

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	10.942	7.951	6.781	-	6.781
Current President's Budget	10.569	7.940	6.912	-	6.912
Total Adjustments	-0.373	-0.011	0.131	-	0.131
• Congressional General Reductions	-0.075	-0.011			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.298	-			
• Other Adjustment	-	-	0.131	-	0.131

Change Summary Explanation

FY 2011 adjustment reflects SBIR/STTR transfers and a Congressional decrease (DoD and Full year continuing appropriation Act, FY 2011, Public Law 112-10).

FY 2013 adjustment reflects funds realignment to DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD33: <i>MD Space Exp Center (MDSEC)</i>	10.162	7.940	6.561	-	6.561	6.244	6.286	6.862	6.996	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

The Program Office for Space Tracking and Surveillance System (STSS) relocated to Colorado Springs in the MDA Missile Defense Integration and Operations Center (MDIOC) within the Missile Defense Space Experimentation Center (MDSEC) 25 May 2011. At that time, the MDSEC was renamed to the Missile Defense Space Development Center (MDSDC).

A. Mission Description and Budget Item Justification

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

The MDSDC provides infrastructure to support satellite operations for STSS and NFIRE as the single location for MDA elements to conduct satellite on-orbit operations. The MDSDC also provides a multi-level security environment for sensor data management and integration across space and terrestrial sensor data activities. MDSDC experiments leverage DoD (Defense Support Program, Space Based Infrared System) and National Security Space capabilities. MDSDC activities support analysis, demonstration and integration of space sensor capabilities into developmental and operational MDA elements. MDSDC enables the development of advanced technology and algorithms including fusion of multiple sensor types (radar, overhead persistent infrared, electro-optical and other merging sensor technologies). MDSDC supports mission integration of space-based missile tracking (boost and midcourse phases), sensor and weapons cueing via C2BMC, features and discrimination, kill and impact point assessments into C2BMC, Aegis Launch on STSS, Aegis Engage on STSS, 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 MDSDC continues to develop and refine on-orbit operations for the STSS Demonstration Satellites and NFIRE. In addition to satellite operations, the MDSDC hosts a collaborative experimentation environment via the MDSDC Interchange System (MIS) and the MDSDC Test Integration Lab (TIL) for BMDS elements that rely on, experiment with, integrate with, or seek to improve the BMDS capability by utilizing space-based, systems-derived data. The MIS provides a common, secure data architecture for MDA,

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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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 MDSDC supports efforts to increase the effectiveness of the BMD System (including probability of engagement success, increase in defended area and raid size capacity, additional redundancy of architecture, unity of command) through the integration of MDA developed capabilities. The MDSDC Sensor Registration Health & Status Monitoring (SRHSM) Experiment addresses efforts such as Sensor Registration (reporting of sensor errors/biases) and Correlation (ensuring the information from multiple sensors seeing a threat relates to the same object). Other MDSDC experiments can explore areas from, System Track (creating a single engageable track of a threat from multiple reports provided by different land, sea, and space based multiple sensors), Discrimination (identifying object details to determine the target from debris or decoys), Battle Management (combining the best sensors and shooters to ensure the highest probability of a kill), Hit/Kill Assessment (determining if the target selected was destroyed after missile impact), to Communications (providing the worldwide connection of sensors and shooters to command authorities). These experiments are structured to be implemented across the 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 2011	FY 2012	FY 2013
<p>Title: Missile Defense Space Development Center (MDSDC)</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Provided infrastructure support for Space Tracking and Surveillance System (STSS) and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations - Continued maturation of the STSS and NFIRE satellite on-orbit operations - Implemented measures to consolidate and increase efficiency in STSS and NFIRE satellite on-orbit operations - Participated in cooperative tests with other BMDS elements to include planning, execution and analyses; performed data collection on other targets of opportunity - Used test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance - First on-orbit demonstration of receipt of an external cue and the use of the STSS crosslink to transmit that cue to the out-of-view satellite, resulting in stereo midcourse tracking and first observation of missile intercept from low earth orbit (Aegis Intercept Flight Test (FTM-15)) - Provided core infrastructure support and conducted joint experiments with the Enterprise Sensors Laboratory (ESL); Command and Control, Battle Management and Communications (C2BMC) X-Lab; and the BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) - Supported laser communications experiments to assess viability of the technology 	<p>10.162</p> <p>0</p>	<p>7.940</p> <p>0</p>	<p>6.561</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>- Provided reports and data to include: STSS Sensor Performance Reports, Clutter Characterization for the Precision Tracking Space System (PTSS), Plume Phenomenology from NFIRE and STSS for MDA users, and Space Situational Awareness with NFIRE for Air Force Space Command</p> <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Implement measures to consolidate and increase efficiency in STSS and NFIRE satellite on-orbit operations - Continue to provide infrastructure support for STSS and NFIRE satellite on-orbit operations - Continue maturation of the STSS and NFIRE satellite on-orbit operations - Participate in cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity - Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance -- An example of this is the STSS Object Sighting Messages fused in the ESL to produce system tracks. System tracks are used to provide precision cues to BMDS radars and enables interceptor quality fire control. - Provide core infrastructure support and conduct joint experiments with the ESL, C2BMC X-Lab, and the BOA - Continue to support laser communications experiments to assess viability of the technology - Continue to support Air Force Space Command Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Testing includes SM-3 intercept using Space Tracking and Surveillance (STSS) as a remote sensor -- STSS will provide to an Aegis 3.6.x or 4.0.1 ship the Quality of Service data track that will initiate a Remote Engagement Authorized (REA) launch of a Standard Missile-3 (SM-3) Block IB against an actual Medium-Range Ballistic Missile (MRBM) target - Continue maturation of the STSS and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations (NFIRE as health and utility permit) - Participate in tests outlined in the Integrated Master Test Plan with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity - Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance -- An example of this is the STSS Object Sighting Messages fused in the Enterprise Sensors Laboratory (ESL) to produce system tracks. System tracks are used to provide precision cues to BMDS radars and enables interceptor quality fire control. - Provide core infrastructure support to enable joint experiments with the ESL; Command and Control, Battle Management and Communications (C2BMC) X-Lab; and the BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) - Continue to support laser communications experiments (as the NFIRE satellite's health and utility permit) to assess viability of the technology 				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
- Continue to support Air Force Space Command Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning			
Accomplishments/Planned Programs Subtotals	10.162	7.940	6.561

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603893C: <i>Space Tracking & Surveillance System</i>	105.580	96.232	51.313		51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	0.000	2,763.751
• 0604883C: <i>Precision Tracking Space System</i>	36.693	80.723	297.375		297.375	267.505	285.529	326.073	354.190	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>

D. Acquisition Strategy

Functions and operations of the Missile Defense Space Development Center (MDSDC) are currently financed through a 10-year MDSDC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. Beginning FY 2005, the annual operating expenses have been consolidated into one centralized delivery order on the contract which includes core capabilities (labor and hardware) that are being performed in the MDSDC and supporting MDSDC participants.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Missile Defense Space Development Center (MSDC) MSDC Support (JRDC Services Contract)	C/CPAF	MDIOC:CO	20.951	4.439	Dec 2011	5.405	Dec 2012	-		5.405	Continuing	Continuing	Continuing
Missile Defense Space Development Center (MSDC) MSDC/Enterprise Sensors Laboratory (ESL) Experiments	MIPR	Various:Various	4.975	1.032	Dec 2011	-		-		-	0.000	6.007	6.007
Subtotal			25.926	5.471		5.405		-		5.405			

Remarks
As on-orbit satellite operations for the Space Tracking and Surveillance System (STSS) and the Near Field Infrared Experiment (NFIRE) mature, the MSDC will continue to seek opportunities to achieve operational efficiencies.

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Missile Defense Space Development Center (MSDC) Contract Support Services (CSS)	C/BPA	MDIOC, MDA:CO/AL	1.791	0.762	Dec 2011	-		-		-	0.000	2.553	2.553
Missile Defense Space Development Center (MSDC) MDA Civilian	Allot	MDA:AL	0.732	0.608	Oct 2011	-		-		-	0.000	1.340	1.340
Subtotal			2.523	1.370		-		-		-	0.000	3.893	3.893

Remarks
Beginning FY 2013, funding for the MSDC MDA Civilians is incorporated with MDA Civilian pay under the Space Tracking and Surveillance System (STSS) Program Element 0603893C, Project MD12 STSS.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Missile Defense Space Development Center (MDSDC) Space Dynamics Laboratory (SDL)	FFRDC	SDL:UT	2.218	1.099	Nov 2011	1.156	Nov 2012	-		1.156	Continuing	Continuing	Continuing
Subtotal			2.218	1.099		1.156		-		1.156			

Remarks
SDL is funded via University Affiliated Research Center (UARC) contract. SDL provides operations and engineering support for mission planning, tasking, and data collection activities at the MDSDC.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		30.667	7.940		6.561		-	6.561			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity Planned Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations - 1Q2011-4Q2011	✦	✦	✦	✦																								
STSS Demonstration Satellites Operations - 1Q2012-4Q2012					✦	✦	✦	✦																				
STSS Demonstration Satellites Operations - 1Q2013-4Q2013									✦	✦	✦	✦																
STSS Demonstration Satellites Operations - 1Q2014-4Q2014													✦	✦	✦	✦												
STSS Demonstration Satellites Operations - 1Q2015-4Q2015																	✦	✦	✦	✦								
STSS Demonstration Satellites Operations - 1Q2016-4Q2016																					✦	✦	✦	✦				
STSS Demonstration Satellites Operations - 1Q2017-4Q2017																									✦	✦	✦	✦
Near Field Infrared Experiment (NFIRE) Satellite Operations - 1Q2011-4Q2011	✦	✦	✦	✦																								
NFIRE Satellite Operations-1Q2012-4Q2012					✦	✦	✦	✦																				
Mission Planning, Tasking and Analysis - 1Q2011-4Q2011	✦	✦	✦	✦																								
Mission Planning, Tasking and Analysis - 1Q2012-4Q2012					✦	✦	✦	✦																				
Mission Planning, Tasking and Analysis - 1Q2013-4Q2013									✦	✦	✦	✦																
Mission Planning, Tasking and Analysis - 1Q2014-4Q2014													✦	✦	✦	✦												
Mission Planning, Tasking and Analysis - 1Q2015-4Q2015																	✦	✦	✦	✦								
Mission Planning, Tasking and Analysis - 1Q2016-4Q2016																					✦	✦	✦	✦				
Mission Planning, Tasking and Analysis - 1Q2017-4Q2017																									✦	✦	✦	✦
Enterprise Sensors Lab Engineering Baseline Release (5.0/5.1)		▲																										
Enterprise Sensors Lab Engineering Baseline Release (6.1/6.2)			▲																									

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	MD33: <i>MD Space Exp Center (MDSEC)</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments - 1Q2011-4Q2011	✦	✦	✦	✦																								
ESL Engineering Baseline Release (7.1/7.2)								△																				
STSS/ESL-BOA Midcourse Tracking Experiments-1Q2012-4Q2012							✦	✦	✦	✦																		
STSS/ESL-BOA)/X-Lab System Track Experiments - 1Q2011-2Q2011	✦	✦																										
STSS/ESL-BOA OPIR Cueing Experiments - 1Q2011-4Q2011	✦	✦	✦	✦																								
STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) OPIR Cueing Experiments-1Q2012-4Q2012							✦	✦	✦	✦																		
STSS Sensor Registration Health & Status Experiments - 1Q2011-4Q2011	✦	✦	✦	✦																								
STSS Sensor Registration Health & Status Experiments-1Q2012-4Q2012							✦	✦	✦	✦																		
Missile Defense Space Development Center (MDSDC) Interchange System (MIS) Operations - 1Q2011-4Q2011	✦	✦	✦	✦																								
MDSDC Interchange System (MIS) Operations - 1Q2012-4Q2012							✦	✦	✦	✦																		
MIS Operations - 1Q2013-4Q2013											✦	✦	✦	✦														
MIS Operations - 1Q2014-4Q2014															✦	✦	✦	✦										
MIS Operations - 1Q2015-4Q2015																			✦	✦	✦	✦						
MIS Operations - 1Q2016-4Q2016																							✦	✦	✦	✦		
MIS Operations - 1Q2017-4Q2017																											✦	✦
MDSDC Test Integration Lab (TIL) Operations - 1Q2011-4Q2011	✦	✦	✦	✦																								
MDSDC TIL Operations - 1Q2012-4Q2012							✦	✦	✦	✦																		
MDSDC TIL Operations - 1Q2013-4Q2013											✦	✦	✦	✦														
MDSDC TIL Operations - 1Q2014-4Q2014															✦	✦	✦	✦										
MDSDC TIL Operations - 1Q2015-4Q2015																			✦	✦	✦	✦						
MDSDC TIL Operations - 1Q2016-4Q2016																							✦	✦	✦	✦		
MDSDC TIL Operations - 1Q2017-4Q2017																											✦	✦

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Aegis Simulated Intercept Flight Test (JFTM-04 E1): Aegis 4.0.1 simulated intercept of a surrogate separating Medium-Range Ballistic Missile (MRBM)	◆																											
Aegis Simulated Intercept Flight Test (FTM-16 E1): Aegis 4.0.1 simulated SM-3 Block 1B intercept of a Short-Range Ballistic Missile (SRBM) target with Associated Objects		◆																										
Sensors Flight Test (FTX-16 E1): Aegis 3.6.1 simulated Launch on Remote Engagement of a ballistic missile using STSS data in the Fire Control Solution		●																										
Aegis Intercept Flight Test (FTM-15): Aegis 3.6.1 Standard Missile-3 (SM-3) Block 1A engagement of an Intermediate-Range Ballistic Missile (IRBM) with Remote Engagements Authorized			●																									
Air-Launched Target Return to Flight (FTX-17): Return to flight of the Short-Range Air Launch Target				◆																								
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements					●																							
Ground-based Midcourse Defense Controlled Test Vehicle (GM CVT-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test								◇																				
Aegis Intercept Flight Test (FTM-16 E2a)								◇																				
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 SM-3 Block 1B engagement of a Short-Range Ballistic Missile (SRBM) target, Space Tracking and Surveillance System (STSS) Engage on Remote Shadow Mode								◇																				
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block 1B missile, STSS Launch on Remote Shadow Mode									◇																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	MD33: <i>MD Space Exp Center (MDSEC)</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a								○																				
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets								○																				
Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs												◆																
Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs												◆																
Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM												◆																
Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 SM-3 Block IB intercept of a SRBM												◆																
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile targets												○																
Aegis Simulated Intercept Flight Test (FTX-14): Aegis 4.0.1SM-3 Block IB simulated engagement of a Wildcat Target												◆																
Arrow System Test (AST-15): First Arrow 3 engagement test												◆																
Aegis Flight Test (SCDPTV-01): SM-3 Block IIA 1st, 2nd, and 3rd stage performance test												◆																
Aegis Ashore Flight Test (AA CVT-01)												◆																
Aegis Intercept Flight Test (FTM-20 E1): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block IB missile																○												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 - 4Q2013												△																
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014												△																
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2014													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2014														△														
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014															△													
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015																△												
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015																	△											
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015																		△										
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015																			△									
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016																				△								
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016																					△							
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016																						△						
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2016																							△					
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2017																								△				
STSS Demonstration Satellites-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																											△	
Near Field Infrared Experiment (NFIRE) - Targets of Opportunity - 1Q2011	▲																											
NFIRE - Targets of Opportunity - 2Q2011		▲																										

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NFIRE - Targets of Opportunity - 3Q2011			▲																									
NFIRE - Targets of Opportunity - 4Q2011				▲																								
NFIRE - Targets of Opportunity - 1Q2012					▲																							
NFIRE - Targets of Opportunity - 2Q2012						△																						
NFIRE - Targets of Opportunity - 3Q2012							△																					
NFIRE - Targets of Opportunity - 4Q2012								△																				
NFIRE Laser Communications Terminal (LCT) Experiments/Operations - 1Q2011	▲																											
NFIRE LCT Experiments/Operations - 2Q2011		▲																										
NFIRE LCT Experiments/Operations - 3Q2011			▲																									
NFIRE LCT Experiments/Operations - 4Q2011				▲																								
NFIRE LCT Experiments/Operations - 1Q2012					▲																							
NFIRE LCT Experiments/Operations - 2Q2012						△																						
NFIRE LCT Experiments/Operations - 3Q2012							△																					
NFIRE LCT Experiments/Operations - 4Q2012								△																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations - 1Q2011-4Q2011	1	2011	4	2011
STSS Demonstration Satellites Operations - 1Q2012-4Q2012	1	2012	4	2012
STSS Demonstration Satellites Operations - 1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites Operations - 1Q2014-4Q2014	1	2014	4	2014
STSS Demonstration Satellites Operations - 1Q2015-4Q2015	1	2015	4	2015
STSS Demonstration Satellites Operations - 1Q2016-4Q2016	1	2016	4	2016
STSS Demonstration Satellites Operations - 1Q2017-4Q2017	1	2017	4	2017
Near Field Infrared Experiment (NFIRE) Satellite Operations - 1Q2011-4Q2011	1	2011	4	2011
NFIRE Satellite Operations-1Q2012-4Q2012	1	2012	4	2012
Mission Planning, Tasking and Analysis - 1Q2011-4Q2011	1	2011	4	2011
Mission Planning, Tasking and Analysis - 1Q2012-4Q2012	1	2012	4	2012
Mission Planning, Tasking and Analysis - 1Q2013-4Q2013	1	2013	4	2013
Mission Planning, Tasking and Analysis - 1Q2014-4Q2014	1	2014	4	2014
Mission Planning, Tasking and Analysis - 1Q2015-4Q2015	1	2015	4	2015
Mission Planning, Tasking and Analysis - 1Q2016-4Q2016	1	2016	4	2016
Mission Planning, Tasking and Analysis - 1Q2017-4Q2017	1	2017	4	2017
Enterprise Sensors Lab Engineering Baseline Release (5.0/5.1)	2	2011	2	2011
Enterprise Sensors Lab Engineering Baseline Release (6.1/6.2)	4	2011	4	2011
STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments - 1Q2011-4Q2011	1	2011	4	2011
ESL Engineering Baseline Release (7.1/7.2)	4	2012	4	2012
STSS/ESL-BOA Midcourse Tracking Experiments-1Q2012-4Q2012	1	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
STSS/ESL-BOA)/X-Lab System Track Experiments - 1Q2011-2Q2011	1	2011	2	2011
STSS/ESL-BOA OPIR Cueing Experiments - 1Q2011-4Q2011	1	2011	4	2011
STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) OPIR Cueing Experiments-1Q2012-4Q2012	1	2012	4	2012
STSS Sensor Registration Health & Status Experiments - 1Q2011-4Q2011	1	2011	4	2011
STSS Sensor Registration Health & Status Experiments-1Q2012-4Q2012	1	2012	4	2012
Missile Defense Space Development Center (MDSDC) Interchange System (MIS) Operations - 1Q2011-4Q2011	1	2011	4	2011
MDSDC Interchange System (MIS) Operations - 1Q2012-4Q2012	1	2012	4	2012
MIS Operations - 1Q2013-4Q2013	1	2013	4	2013
MIS Operations - 1Q2014-4Q2014	1	2014	4	2014
MIS Operations - 1Q2015-4Q2015	1	2015	4	2015
MIS Operations - 1Q2016-4Q2016	1	2016	4	2016
MIS Operations - 1Q2017-4Q2017	1	2017	4	2017
MDSDC Test Integration Lab (TIL) Operations - 1Q2011-4Q2011	1	2011	4	2011
MDSDC TIL Operations - 1Q2012-4Q2012	1	2012	4	2012
MDSDC TIL Operations - 1Q2013-4Q2013	1	2013	4	2013
MDSDC TIL Operations - 1Q2014-4Q2014	1	2014	4	2014
MDSDC TIL Operations - 1Q2015-4Q2015	1	2015	4	2015
MDSDC TIL Operations - 1Q2016-4Q2016	1	2016	4	2016
MDSDC TIL Operations - 1Q2017-4Q2017	1	2017	4	2017
Aegis Simulated Intercept Flight Test (JFTM-04 E1): Aegis 4.0.1 simulated intercept of a surrogate separating Medium-Range Ballistic Missile (MRBM)	1	2011	1	2011
Aegis Simulated Intercept Flight Test (FTM-16 E1): Aegis 4.0.1 simulated SM-3 Block IB intercept of a Short-Range Ballistic Missile (SRBM) target with Associated Objects	2	2011	2	2011
Sensors Flight Test (FTX-16 E1): Aegis 3.6.1 simulated Launch on Remote Engagement of a ballistic missile using STSS data in the Fire Control Solution	2	2011	2	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Intercept Flight Test (FTM-15): Aegis 3.6.1 Standard Missile-3 (SM-3) Block IA engagement of an Intermediate-Range Ballistic Missile (IRBM) with Remote Engagements Authorized	3	2011	3	2011
Air-Launched Target Return to Flight (FTX-17): Return to flight of the Short-Range Air Launch Target	4	2011	4	2011
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements	1	2012	1	2012
Ground-based Midcourse Defense Controlled Test Vehicle (GM CVT-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test	3	2012	3	2012
Aegis Intercept Flight Test (FTM-16 E2a)	3	2012	3	2012
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 SM-3 Block 1B engagement of a Short-Range Ballistic Missile (SRBM) target, Space Tracking and Surveillance System (STSS) Engage on Remote Shadow Mode	3	2012	3	2012
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block IB missile, STSS Launch on Remote Shadow Mode	4	2012	4	2012
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a	4	2012	4	2012
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets	4	2012	4	2012
Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs	3	2013	3	2013
Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs	3	2013	3	2013
Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM	3	2013	3	2013
Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 SM-3 Block IB intercept of a SRBM	3	2013	3	2013
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile targets	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Simulated Intercept Flight Test (FTX-14): Aegis 4.0.1SM-3 Block IB simulated engagement of a Wildcat Target	1	2014	1	2014
Arrow System Test (AST-15): First Arrow 3 engagement test	1	2014	1	2014
Aegis Flight Test (SCDPTV-01): SM-3 Block IIA 1st, 2nd, and 3rd stage performance test	1	2014	1	2014
Aegis Ashore Flight Test (AA CVT-01)	2	2014	2	2014
Aegis Intercept Flight Test (FTM-20 E1): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block IB missile	3	2014	3	2014
Ground-based Midcourse Defense Intercept Flight Test (FTG-08): Intercept of Intermediate-Range Ballistic Missile target with Associated Objects using 2-stage booster with first generation avionics	3	2014	3	2014
Aegis Ashore Intercept Flight Test (AA FTM-01)	4	2014	4	2014
Aegis Ashore Intercept Flight Test (AA FTM-02)	4	2014	4	2014
Aegis Flight Test, Standard Missile (FTM-24)	4	2014	4	2014
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM	4	2014	4	2014
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2011	1	2011	1	2011
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2011	2	2011	2	2011
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2011	3	2011	3	2011
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2011	4	2011	4	2011
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2012	1	2012	1	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2012	2	2012	2	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2012	3	2012	3	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2012	4	2012	4	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2013	1	2013	1	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2013	2	2013	2	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT 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 - 3Q2013	3	2013	3	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2013	4	2013	4	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014	1	2014	1	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
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014	4	2014	4	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015	1	2015	1	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015	2	2015	2	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015	4	2015	4	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016	1	2016	1	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016	2	2016	2	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016	3	2016	3	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2016	4	2016	4	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2017	1	2017	1	2017
STSS Demonstration Satellites-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
Near Field Infrared Experiment (NFIRE) - Targets of Opportunity - 1Q2011	1	2011	1	2011
NFIRE - Targets of Opportunity - 2Q2011	2	2011	2	2011
NFIRE - Targets of Opportunity - 3Q2011	3	2011	3	2011
NFIRE - Targets of Opportunity - 4Q2011	4	2011	4	2011
NFIRE - Targets of Opportunity - 1Q2012	1	2012	1	2012
NFIRE - Targets of Opportunity - 2Q2012	2	2012	2	2012
NFIRE - Targets of Opportunity - 3Q2012	3	2012	3	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NFIRE - Targets of Opportunity - 4Q2012	4	2012	4	2012
NFIRE Laser Communications Terminal (LCT) Experiments/Operations - 1Q2011	1	2011	1	2011
NFIRE LCT Experiments/Operations - 2Q2011	2	2011	2	2011
NFIRE LCT Experiments/Operations - 3Q2011	3	2011	3	2011
NFIRE LCT Experiments/Operations - 4Q2011	4	2011	4	2011
NFIRE LCT Experiments/Operations - 1Q2012	1	2012	1	2012
NFIRE LCT Experiments/Operations - 2Q2012	2	2012	2	2012
NFIRE LCT Experiments/Operations - 3Q2012	3	2012	3	2012
NFIRE LCT Experiments/Operations - 4Q2012	4	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>				MD40: <i>Program-Wide Support</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	0.407	-	0.351	-	0.351	0.332	0.324	0.357	0.375	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	0.407	-	0.351
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	0.407	-	0.351

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603895C: <i>Ballistic Missile Defense System</i> <i>Space Programs</i>	MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	454.440	363.640	366.552	-	366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	439.876	285.993	194.367	-	194.367	215.166	199.753	185.137	195.760	Continuing	Continuing
MT01: <i>C2BMC Test</i>	-	-	59.189	-	59.189	53.874	59.433	56.766	49.689	Continuing	Continuing
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	-	62.725	94.394	-	94.394	88.115	105.185	98.861	100.788	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	14.564	14.922	18.602	-	18.602	18.961	18.684	17.667	18.488	Continuing	Continuing

Note

N/A

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) with a forward based AN/TPY-2 identified for a future BMDS deployment. The C2BMC program will also upgrade existing suite to Spiral 6.4 suite for Central Command (CENTCOM), install communications, support hardware-in-the-loop (HWIL) integration testing, provide operations and distraction, and add a training suite in CENTCOM.

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 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 Extremely High Frequency (EHF) satellite communications. The C2BMC program will also work to increase coalition partners' capabilities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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The C2BMC Program will expand defense of the United States, allies, and deployed forces by continuing work which has focused on limited Iranian long-range threats by enabling a coordinated defense against short- to intermediate-range threats in two 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.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	342.625	364.103	330.337	-	330.337
Current President's Budget	454.440	363.640	366.552	-	366.552
Total Adjustments	111.815	-0.463	36.215	-	36.215
• Congressional General Reductions	-3.116	-0.463			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	114.100	-			
• Reprogrammings	3.410	-			
• SBIR/STTR Transfer	-2.104	-			
• Other Adjustment	-0.475	-	36.215	-	36.215

Change Summary Explanation

The FY 2011 increase of \$111.815 Million reflects a congressional increase (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)).

The FY 2012 decrease of \$0.463 Million reflects a congressional reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

The FY 2013 increase of \$36.215 Million reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>				PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	439.876	285.993	194.367	-	194.367	215.166	199.753	185.137	195.760	Continuing	Continuing
Quantity of RDT&E Articles	1	0	0		0	0	0	0	0		

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 one RDT&E article, Spiral 6.4, which was successfully completed in FY 2011/FY 2012.

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.

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 the work initiated in Budget Project BX01 which has focused on limited Iranian long-range threats by enabling a coordinated defense against short-to intermediate- range threats in two regions/theaters.

Specific goals are to deliver the following, which include BMDS planning, situational awareness, sensor management, and engagement coordination functions incorporated in BMDS Integrated Build C and D specifications approved content:

- Fully integrated BMD Planner and situational awareness displays with integrated intelligence information and defended asset priority schemes
- Initial Global Engagement Manager (GEM) at Ramstein AB
- Continuity of Operations Global Engagement Manager (GEM) at Northern Command (NORTHCOM) (Missile Defense Integration and Operations Center (MDIOC))
- Incorporate Central Command (CENTCOM) into the C2BMC operational architecture
- 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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
<p>-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</p> <p>-Install more effective network monitoring and computer network defense software and hardware at the BMDS Network Operations and Security Center (BNOSC)</p> <p>-Information Assurance (IA) monitoring and modifications of global network devices at all C2BMC locations</p> <p>-Support system flight and ground testing in accordance with the MDA Integrated Master Test Plan (IMTP)</p> <p>C2BMC ELEMENT</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>C2BMC battle management, via the Global Engagement Manager (GEM), will deliver full X-Band radar sensor control and capabilities for the following:</p> <ul style="list-style-type: none"> - Improved threat object correlation which calculates a common threat track from multiple sensors through data fusion, with sufficient data accuracy and timeliness for BMDS weapon Elements to enable successful engagements via Link-16 and Extremely High Frequency (EHF) satellite communications - Incorporation of BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) and upgraded Space Based Infra-Red System (SBIRS) sensor data - Improved BMD system discrimination logic using multiple sensors discrimination results, selecting the best result, and assigning object type to common threat tracks - Sensor management and weapons engagement coordination aids to direct the BMDS fight and make efficient use of limited inventory <p>C2BMC Spiral 8.2 Distributed Training System (DTS; AKA DMETS) 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 that 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.</p>		

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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 a 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, interfaces with other DoD communications systems, evolving 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.

SITE ACTIVATION

Command and Control, Battle Management and Communications (C2BMC) hardware and software have been deployed to Northern Command (NORTHCOM), Strategic Command (STRATCOM), Pacific Command (PACOM), and European Command (EUCOM) with existing sites receiving Spiral upgrades as needed. Current capabilities were expanded with Ballistic Missile Defense (BMD) Planner, web browser, and workstation installations per warfighter requirements. Planning instituted for future Ballistic Missile Defense System (BMDS) operations and site installations included Global Engagement Manager (GEM) at European Command (EUCOM), GEM on the Parallel Support Network (PSN) at Northern Command (NORTHCOM), and network-enabled capability at various locations. Central Command (CENTCOM) has been incorporated into the operational C2BMC architecture. Site Activation also included participation in planning for future BMDS operations and site installations.

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 COCOM suites, 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; 6) hardware and software maintenance, and upgrade installation to ensure continuity of C2BMC operations.

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C2BMC Spiral 6.4 Distributed Training System (DTS; AKA DMETS) operations and sustainment will continue until Spiral 8.2 becomes operational. The Spiral 6.4 DTS provides training for STRATCOM, NORTHCOM, PACOM, EUCOM, and CENTCOM. The DTS will be maintained to the same hardware and software baseline as the operational system and will incorporate simulation upgrades to keep pace with evolving BMDS system capabilities.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Spiral Development</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Completed software development of improvements to support Spiral 6.4 fielding to EUCOM meeting European Phase Adaptive Approach (EPAA) Phase 1 architecture deployment of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar and Aegis Ballistic Missile Defense (BMD) capable ships. - Completed verification of functional and performance capabilities of Spiral 6.4 to support fielding to PACOM, STRATCOM, NORTHCOM, and EUCOM. - Completed allocation of system-level functional and performance requirements and initial prototype designs for C2BMC Spiral 8.2 capabilities. These include the incorporation of the Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture for sensor cueing and track forwarding to support Aegis Ballistic Missile Defense (BMD) Launch on Remote capability, as well as improvements to discrimination, sensor management, situational awareness and engagement coordination/engagement direction capabilities. - Initiated Spiral 8.2 design in the functional areas of BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development - Continued engineering to demonstrate the incorporation of Airborne Infrared (ABIR) and its integrated ground processor data into the C2BMC architecture - Continued engineering to demonstrate the performance and incorporation of (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA) into the C2BMC and BMDS architecture - Participated in and analyzed results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP). Tests included GTD-04b (BMDS Distributed Ground Test), FTG-06a (GM Intercept Flight Test), FTM-15 (THAAD Intercept Flight Test), FTT-12 (THAAD Intercept Flight Test), FTM-16 (Aegis Intercept Flight Test), GTI-04d (BMDS Integrated HWIL Ground Test), GTD-04d part1 (BMDS Distributed Ground Test), and GTX-04e (BMDS Focused Ground Test) - Updated, verified, validated, and certified the BMDS C2BMC model, using 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 	<p>215.391</p> <p>1</p>	<p>222.181</p> <p>0</p>	<p>151.324</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Upgraded the BMD Communications Network capability (development, integration and test) - Upgraded DoD teleports to enhance satellite communications (SATCOM) connectivity - Incorporated Enhanced C2BMC advanced technologies and prototypes into the C2BMC architecture - Performed Security Event Collection & Correlations, Remote Firewall Management, Host Based Intrusion Detection <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue systems engineering to provide the System Description Document and the Integrated Build C and Build D specifications for the Elements to design, build, integrate and test BMDS components. The BMDS Integrated Build C specification directs limited peer-to-peer engagement coordination, sensor, resource management, initial multi-radar capability, warfighter planning, warfighter enhancements, and improved situational awareness -Continue BMDS Integrated Build D specification to continue the communications enhancements adding improved correlation, initial BMDS system track, and expanded BMDS C2BMC interfaces with Friends and Allies -Award follow on contract to continue development by Dec 2011 -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 - Refine and expand the C2BMC planned architecture to incorporate Enhanced C2BMC advanced technology development in integrated discrimination and data fusion and tasking techniques using RF, infrared, advanced remote, and JOG (Joint OPIR Ground Study) sensors -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 -By the close of FY 2012, with the completion of BMD System tests, C2BMC Program will collect the CEC data collection points to verify models and simulations for Spiral 6.4C operations and Spiral 8.2 development. -Continue to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) -Upgrade DoD teleports to enhance satellite communications (SATCOM) connectivity and add additional Combatant Commands to operations -Update production drawings and installation procedures -Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Operate Spiral 6.2 and initiate upgrade to Spiral 6.4C at Central Command (CENTCOM)</p> <p>- The C2BMC Program will ship a C2BMC Deployable Interface Node (CDIN) with a forward based AN/TPY-2 identified for a future BMDS deployment.</p> <p>- The C2BMC program will also upgrade existing suite to Spiral 6.4 suite for Central Command (CENTCOM), install communications, support hardware-in-the-loop (HWIL) integration testing, provide operations and distrainment, and add a training suite in CENTCOM.</p> <p>- Operate the new Spiral 6.4C Global Engagement Manager (GEM) hardware at European Command (EUCOM), Northern Command (NORTHCOM), Strategic Command (STRATCOM), Pacific Command (PACOM)</p> <p>- Continue to incorporate C2BMC Advanced Technologies and prototypes into the enhanced C2BMC architecture</p> <p>- Identify and acquire the long-haul terrestrial communications circuits to support the European Phased Adaptive Approach (EPAA) Phase 1 Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) site in EUCOM</p> <p>- Upgrade the BCN communications systems at the Pacific Missile Range Facility to support the testing of the European Phase Adaptive Approach (EPAA) Phase 2 concept</p> <p>- Initiate Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2</p> <p>- Continue Active Layered Theatre Ballistic Missile Defense (ALTBMD) Systems Engineering</p> <p>- Complete North Atlantic Treaty Organization (NATO) Architecture Design Review</p> <p>- Complete Situational Awareness Node at Eskisehir, Turkey</p> <p>- Participate in the development of NATO Staff Requirements (NSR) for new NATO Territorial Defense Mission</p> <p>FY 2013 Plans:</p> <p>- 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</p> <p>- 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</p> <p>- Continue to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA)</p>			

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

	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Upgrade DoD teleports to enhance satellite communications (SATCOM) connectivity and add additional Combatant Commands to operations - Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continue Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Integrate BMDS Overhead Architecture (BOA) into spiral 8.2 C2BMC - Develop the initial BMDS C2BMC Model for Spiral 8.2 - Continue development of Spiral 8.2 software, hardware, and network capability - Design, procure, and integrate Spiral 8.2 test infrastructure and tools at Missile Defense Integration and Operations Center (MDIOC) to support Spiral 8.2 verification testing and distributed testing support - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Complete development and testing of new BMDS Overhead Architecture (BOA) baseline release to support Spiral 8.2 integration and testing - Complete development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Spiral 8.2 will prototype and deliver the Two-Factor Authentication (Smart-card) capability on a classified weapons system. Additional improvements to remote administration of the systems, remote monitoring and event response will improve the security configuration management of this growing architecture. Automated anti-virus and patch management will allow for faster deployment of critical patches and anti-virus signatures keeping the systems secured in a timely manner. - Finalize the C2BMC Command and Control (C2) and battle management architecture, including Enhanced C2BMC advanced technologies, to fulfill the European Phase Adaptive Approach (EPAA) 3/4 Architecture - Complete requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 3 requirements - Complete a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design - Complete NATO Capability 2 Interface Control Documents (ICDs) 			
<p>Title: Operations and Support (O&S)</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Additional O&S funding is reported in Program Element 0603884C, Budget Project MD11 \$13.782 Million</p> <p>- Maintained C2BMC training suites</p>	<p>59.237</p> <p>0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Sustained Global Engagement Manager (GEM) trainers - Developed curriculum for and trained operators, maintenance personnel, and testers - Resolved real-time operational issues through the C2BMC Control Center and Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC) - Provided global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provided and supported communications circuits for fielded C2BMC locations - Provided integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provided support of AN/TPY-2 Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Provided operations and sustainment personnel to support test and operations for AN/TPY-2 at 4 deployed operational test sites - Supported 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 <p>FY 2012 Plans: FY 2012 Plans are reported in budget project MX01</p> <p>FY 2013 Plans: FY 2012 Plans are reported in budget project MX01 \$64.797 Million</p>			
<p>Title: Site Activation and Fielding</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Updated production drawings and installation procedures -Acquired and installed Enterprise Work Stations (EWS), web browsers, and BMD Planners -Installed Spiral 6.4 Global Engagement Manager (GEM) hardware at European Command (EUCOM) <p>FY 2012 Plans:</p>	42.875 0	- 0	- 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
FY 2012 Plans are captured in Spiral Development Plans \$18.222 Million			
FY 2013 Plans: FY 2013 Plans are captured in Spiral Development Plans \$9.231 Million			
Title: Integrated Master Test Plan	-	32.084	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: FY 2011 accomplishments are in the Spiral Development Plans \$13.748 Million and in Program Element 0603904C, Budget Project MD22 \$23.803 Million			
FY 2012 Plans: -Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) -Plan, collect data, assess, examine, and report on C2BMC spiral integration testing -Support interoperability and integration of the BMDS program elements -Support the field testing of the European Deployment -Sustain the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training -Provide infrastructure, network, and troubleshooting support to IMTP Event: --C2BMC Control Center (CCC) --System Test and Operations Center (STOC) --BMDS Communications Network (BCN) --Parallel Staging Network (PSN) --BMDS Network Operations and Security Center (BNOSC) - Continue BMD Overhead Persistent Infrared (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conduct concept development for virtualized C2BMC services, service oriented architectures - Develop and maintain Concurrent, Test, Training, and Operations (CTTO) Network Architectures - Conduct initial prototypes and associated operations with CTTO interfaces and architectures			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> - Conduct North Atlantic Treaty Organization (NATO) Multi-National Ensemble Test #2 - Conduct Exercise Rapid Arrow 2012 German/Dutch Live Fire Event <p>FY 2013 Plans: FY 2013 Plans are reported in budget project MT01 \$59.189 Million</p>			
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Title: X-Lab	-	7.311	12.199
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:
FY 2011 Plans are in Program Element 0603175C, Budget Project MD25 \$12.846 Million

FY 2012 Plans:
The X-lab communications effort focuses on developing the next generation command and control and battle management concepts and the enabling technologies required to implement them among the BMDS. These activities will develop, integrate, and demonstrate in a system of systems concept, the Command and Control, Battle Management and Communications (C2BMC) and enabling technologies for improving BMDS performance across all mission areas and layers of defense including Early Intercept (EI) to include defense of friends and allies. BMDS integration concepts and techniques are demonstrated and evaluated in system-wide flight tests to facilitate the transition to the operational C2BMC.

- Enable integration of new capabilities into C2BMC Spiral 8.2 through performance characterization of Spiral 6.4 and Spiral 8.2 prototypes
- Demonstrate and evaluate new C2BMC capabilities in live-flight test events using the C2BMC X-Lab
- Continue to evolve warfighter concept of operations (CONOPS) to insert new subsystems and capabilities into the BMDS in the areas of boost phase tracking and classification, sensor resource management, weapons resource management, post-intercept debris information flow, and communication with allies and friendly nations. Note: This is a Phased Adaptive Approach Phase 2 capability
- Continue to develop and demonstrate next generation sensor netting and sensor resource management techniques
- Conduct sensor netting experiments associated with tracking, integrated discrimination, sensor resource tasking, and Communications/bandwidth constraints

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>- Continue to support the efforts of the Enhanced C2BMC program to develop the Integrated Sensor Manager and to prototype the interface between C2BMC and the Integrated Sensor Manager. Capability improvements will be demonstrated through a series of integrated experiments (simulation events, hardware-in-the-loop tests, and system-wide flight tests)</p> <p>- Continue to develop and demonstrate advanced battle management (BM) and integrated fire control capabilities</p> <p>- Conduct architecture assessments of BM functions federated within C2BMC and various allied/coalition partners and friendly nations</p> <p>- Integrate the CONOPS information and BMS integration priorities for advanced and emerging BMDS capabilities (such as Early Intercept and Space Tracking and Surveillance System (STSS)) into battle management constructs</p> <p>- Refine C2BMC interfaces to BMDS Elements and Sensors</p> <p>FY 2013 Plans: The C2BMC Experimentation Lab (X-Lab) will focus on prototyping, demonstrating, and analyzing new C2BMC capabilities that will enable (1) status reporting and tasking of BMDS elements, (2) integrated battle management with smart allocation of sensor, shooter and other critical resources, (3) robust communications between BMDS elements, and (4) a C2BMC architecture that meets near term needs while enabling future growth. While the focus of the X-Lab is on demonstrating the feasibility of new capabilities for insertion into future C2BMC cycles, Spirals 8.2 and 6.4; the X-Lab will also assess current Spiral 6.4 C2BMC capabilities to establish baselines for performance metrics and to assist in verifying requirements. The FY 2013 focus will be:</p> <p>- Tasking of Aegis, THAAD, and infrared sensors through cues from space based assets and other BMDS assets: Spirals 6.4 and 8.2</p> <p>- Demonstrating the communications, CONOPS and cueing logic required for ensuring a remote engagement authorized quality cue is generated and forwarded to Aegis: Spiral 8.2</p> <p>- Evaluating C2BMC architectures to include evaluation of the BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) performance in the Space Based Infrared Systems (SBIRS) Operations Migration Capability (OMC) environment: Spiral 8.2</p> <p>- 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</p> <p>- 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>			
Title: C2BMC Communications	13.800	24.417	30.844
Articles:	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Provided Regional Testbed (RTB) and Test Support for Ground Based Interceptor Flight Test (FTM-06a) at Wake Island - Fielded Spiral 6.2 Suite at Central Command - Fielded Spiral 6.4 Suite at Ramstein AFB - 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 - Designed, procured and installed RTB equipment at Pacific Command (PACOM) DISA Defense Enterprise Computing Center (DECC) and Missile Defense Integration and Operations Center (MDIOC) - Completed threshold development of components of the Protected Anti-jam/Anti-scintillation Net-Centric System (PAAWNS) - Continued support for fielding of C2BMC Spiral 6.4 in EUCOM, STRATCOM, NORTHCOM, and PACOM - Participated in Ballistic Missile Defense System (BMDS) Distributed Ground Tests (GTD-04b, GTD-04d, and GTD-04d part1); Integrated HWIL Ground Tests (GTI-04d), and Focused Ground Tests (GTX-04e); and GM Intercept Flight Tests (FTG-06a), Aegis Intercept Flight Tests (FTM-15 and FTM-16), and THAAD Intercept Flight Tests (FTT-12) to verify Spiral 6.4C6.4 operational performance - Moved COCOM EWS from Missile Defense Agency Operations Center (MOC) to Fort Belvoir due to BRAC - Continued development and acquisition of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management; Sensors Element funded hardware, installation, and checkout) - Participated in and analyzed results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Supported integration and testing of U.S. BMDS interface with NATO Active Layered Theater Ballistic Missile Defense (ALTBMD) - Resolved real-time operational issues through the C2BMC Control Center and BMDS Network Operation and Security Center (BNOSC) - Operated BNOSC 24 hours a day, 7 days a week, 365 days a year - Provided global BMDS communications via leased DISA circuit lines - Provided and supported communications circuits for fielded C2BMC locations - 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</p> <p>FY 2012 Plans: -Transport and install the second Modernization of Enterprise Terminal (MET) in EUCOM</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Perform First Article Testing (FAT) of the Protected Anti-jam/Antiscintillation Net-Centric System (PAAWNS) -Support exercises and tests of the AN/TPY-2 radar system with BMDS Communications Networks (BCN) support systems (HBCN and CDIN) -Continue BMDS communications systems integration and certifications <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Design and implement redundant fiber path in support of Clear Air Force Station (AFS) Upgraded Early Warning Radar (UEWR) integration into the Ballistic Missile Defense System (BMDS) - Upgrade SBX SATCOM capability and transition land-side terminal service to COMSAT terminals at FGA and VAFB - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Install AN/GSC-52B SATCOM terminal at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Perform High Altitude Electromagnetic Pulse (HEMP) upgrade Building 543 at Ramstein AFB - Continue support for C2BMC 6.4 in EUCOM, STRATCOM, NORTHCOM, PACOM, and CENTCOM - Continue development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management; Sensors Element funded hardware, installation, and checkout) - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Resolve real-time operational issues through the C2BMC Control Center and BNOSC - Operate BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide global BMDS communications via leased DISA circuit lines - Provide and support communications circuits for fielded C2BMC locations - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software - Provide support of AN/TPY-2 radar communications nodes - Acquire and install Enterprise Work Stations, Web Browsers, and Planners per warfighter requirements 				
Title: Comms for European Phased Adaptive Approach		34.850	-	-
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments:				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>- Procured and prepared Command and Control, Battle Management, and Communications (C2BMC) Deployable Interface Node (CDIN) #3 in support of a rapid deployment for European Phased Adaptive Approach (EPAA) Phase I TPY-2 Radar</p> <p>- Procured two Navy Multiband Terminal (NMT) Q/KA band satellite terminals and two Advance Digital Network Switches (ADNS) (Increment III) for AEGIS Ashore for EPAA Phase 2 use at Pacific Missile Range Facility (PMRF) and Romania sites</p> <p>FY 2012 Plans: FY 2012 plans are captured in Spiral Development Plans \$5.208 Million</p> <p>FY 2013 Plans: FY 2013 plans are captured in Spiral Development Plans \$6.234 Million</p>			
<p>Title: Concurrent, Test, Training, and Operations (CTTO)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Increased confidence in the Ballistic Missile Defense System (BMDS) through the use of CTTO capabilities in test and training events without degrading protection capability of Unified Combatant Commanders. -Operated and sustained Distributed Multi-Echelon System (DMETS) at 80 hours per week to support training and exercise events with Aegis, THAAD, GMD, Sensors, and C2BMC. -Began integration of element capabilities with Aegis and THAAD. -Coordinated with the execution of Agency Modeling and Simulation development to provide M&S tools capable of meeting CTTO requirements. -Completed technical refresh of DMETS by upgrading from Spiral 6.2 to Spiral 6.4 configuration. -Expanded training audience to theater/regional by deploying C2BMC Spiral 6.4 Distributed Training System (DTS) to EUCOM and began deployment of C2BMC Spiral 6.2 Distributed Training System to CENTCOM. -Coordinated and integrated BMDS CTTO Element-level activities and capabilities to update the Change Notice to implement CTTO content into the technical baseline. -Coordinated development and deployment of Regional Testbed (RTB) enabling PACOM to participate in flight tests while maintaining an operational capability. -Completed all CTTO prototyping efforts to include asset management and monitoring and virtualization that enable safe inject consistent high fidelity test and evaluation threat data on operational equipment to exercise all phases of the kill chain using all sensor/shooter combinations <p>FY 2012 Plans:</p>	<p>73.723</p> <p>Articles: 0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-FY 2012 plans are captured in MX04 - PE 0603888C - Ballistic Missile Defense Test and Targets \$32.389 Million			
FY 2013 Plans: -FY 2013 plans are captured in MX01 - PE 0603896C - Ballistic Missile Defense C2BMC \$29.585 Million			
Accomplishments/Planned Programs Subtotals	439.876	285.993	194.367

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603893C: <i>Space Tracking & Surveillance System</i>	105.580	96.232	51.313		51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	151.032	176.831	9.730		9.730	9.725	9.739	9.725	9.728	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604884C: <i>Airborne Infrared (ABIR)</i>	71.550	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	71.550

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 ends 1Q FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1Q FY2012. 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 (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. Competition will be conducted for CSS follow-on effort.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Spiral Development C2BMC Hardware(HW)/Software(SW) Development, Integration & Test (I&T)	SS/CPAF	Lockheed Martin Team:Colorado Springs, CO	237.410	14.177	Oct 2011	-		-		-	0.000	251.587	251.587
Spiral Development C2BMC HW/SW Development, I&T	SS/CPAF	Lockheed Martin Team:Huntsville, AL	35.970	2.148	Oct 2011	-		-		-	0.000	38.118	38.118
Spiral Development C2BMC Product Engineering & Development	SS/CPAF	Lockheed Martin Team:Arlington, VA	445.434	26.636	Oct 2011	-		-		-	0.000	472.070	471.752
Spiral Development C2BMC Integration	Various	Services DISA Agency:-	110.956	14.091	Oct 2011	2.713	Oct 2012	-		2.713	Continuing	Continuing	Continuing
Spiral Development Contract Support Services	SS/FFP	Cobham Analytic Solutions, Paradigm, CACI, CSC:Arlington, VA/Huntsville, VA	112.496	20.193	Oct 2011	15.124	Oct 2012	-		15.124	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	62.742	15.745	Oct 2011	12.065	Oct 2012	-		12.065	Continuing	Continuing	Continuing
Spiral Development MDA Civilian, Travel & PCS	Various	:-Arlington, VA/ Huntsville, AL/Colorado Springs, CO	33.683	11.095	Oct 2011	14.979	Oct 2012	-		14.979	Continuing	Continuing	Continuing
Spiral Development C2BMC Hardware(HW)/Software(SW) Development, Integration & Test (I&T)	SS/IDIQ	Lockheed Martin Team:Arlington, VA	-	118.096	Dec 2011	106.443	Nov 2012	-		106.443	Continuing	Continuing	Continuing
Spiral Development Common Threat Engineering	C/CR	Various:Various	1.684	-		-		-		-	0.000	1.684	1.684
Operations and Support (O&S) Unit Personnel, Control System Improvement, Sustaining Support	SS/CPAF	Lockheed Martin Team:Arlington, VA	183.285	-		-		-		-	0.000	183.285	83.285

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operations and Support (O&S) Indirect Support	MIPR	DISA DECC:-	19.065	-		-		-		-	0.000	19.065	9.065
Operations and Support (O&S) Communications Leases	IA	DISA:-	34.691	-		-		-		-	0.000	34.691	4.691
Operations and Support (O&S) DOTMLPF	IA	SETAC:-	2.000	-		-		-		-	0.000	2.000	2.000
Operations and Support (O&S) Warfighter Training	SS/CPAF	Lockheed Martin Team:Arlington, VA	2.665	-		-		-		-	0.000	2.665	2.665
Site Activation and Fielding Suites and Communications Gateways	SS/CPAF	Lockheed Martin Team:-	121.138	-		-		-		-	0.000	121.138	21.138
X-Lab X-Lab	SS/CPAF	Various / Northrop Grumman Mission Systems:Colorado Springs, CO	11.898	7.311	Oct 2011	12.199	Oct 2012	-		12.199	Continuing	Continuing	Continuing
C2BMC Communications Communication Leases	SS/CR	DISA:Arlington, VA	-	6.200	Oct 2011	6.143	Oct 2012	-		6.143	Continuing	Continuing	Continuing
C2BMC Communications Communication Equipment and Fielding	SS/CR	DISA:Various	34.994	4.986	Oct 2011	16.051	Oct 2012	-		16.051	Continuing	Continuing	Continuing
C2BMC Communications BNOSC	SS/CPAF	Lockheed Martin Team / JRDC:Colorado Springs, CO	-	6.761	Oct 2011	6.900	Oct 2012	-		6.900	Continuing	Continuing	Continuing
C2BMC Communications EUCOM Communications	MIPR	USAFE :Ramstein, DE	-	6.470	Oct 2011	1.750	Oct 2012	-		1.750	Continuing	Continuing	Continuing
C2BMC Communications EMR, EIS, ECI Communications	MIPR	Various:Various	63.904	-		-		-		-	0.000	63.904	63.904
C2BMC Communications GCN Transition	IA	DISA:Various	18.000	-		-		-		-	0.000	18.000	8.000

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Comms for European Phased Adaptive Approach Phased Adaptive Approach	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/Colorado Springs, CO	34.850	-		-		-		-	0.000	34.850	4.850
Concurrent, Test, Training, and Operations (CTTO) Concurrent Test, Training and Operations	SS/CPAF	Northrop Grumman:Boeing	9.437	-		-		-		-	0.000	9.437	9.437
Concurrent, Test, Training, and Operations (CTTO) Concurrent Test, Training and Operations Test/Training Enhancements	SS/CPAF	Lockheed Martin Team Arlington:VA/Huntsville,AL/Colorado Springs, CO	64.286	-		-		-		-	0.000	64.286	64.286
Subtotal			1,640.588	253.909		194.367		-		194.367			

Remarks
 Funding for Operations and Sustainment is captured in Budget Project MX01 starting in FY 2012

 In order to more accurately capture the aggregate program of work for C2BMC, starting in FY 2012 the PE is consolidating communications support and equipment funding that traditionally was aligned to other program elements planned activities (i.e., communications in support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) fielding).

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

Remarks
N/A

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Spiral Development BMDS Level Testing	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/Colorado Springs, CO	13.430	-		-		-		-	0.000	13.430	3.430
Integrated Master Test Plan BMDS Level Testing	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/Colorado Springs, CO	-	3.020	Oct 2011	-		-		-	0.000	3.020	0.000
Integrated Master Test Plan BMDS Level Testing (Element/System Test Lab Facilities)	SS/CPAF	JRDC:Colorado Springs, CO	20.226	17.367	Oct 2011	-		-		-	37.593	75.186	37.593
Integrated Master Test Plan BMDS Level Testing-	SS/IDIQ	Lockheed Martin Team:Arlington, VA/Huntsville, AL/Colorado Springs, CO	-	11.697	Jan 2012	-		-		-	9.064	20.761	9.064
Subtotal			33.656	32.084		-		-		-	46.657	112.397	50.087

Remarks
In order to more accurately capture the aggregate program of work for C2BMC, starting in FY 2012 the PE is consolidating communications support and equipment funding that traditionally was aligned to other program elements planned activities (i.e., communications in support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) fielding).

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

Remarks
N/A

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	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,674.244	285.993	194.367	-	194.367			

Remarks
NA

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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT01: <i>C2BMC Test</i>	-	-	59.189	-	59.189	53.874	59.433	56.766	49.689	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

TESTING
In order to ensure C2BMC capabilities delivered meet warfighter requirements and are interoperable with other BMDS components, C2BMC will support system flight and ground testing as detailed in the MDA Integrated Master Test Plan (IMTP).

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

	FY 2011	FY 2012	FY 2013
Title: Integrated Master Test Plan	-	-	59.189
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: FY 2011 accomplishments are in the Spiral Development Plans \$13.748 Million and in Program Element 0603904C, Budget Project MD22 \$23.803 Million			
FY 2012 Plans: FY 2012 Plans are reported in budget project MD01 \$32.084 Million			
FY 2013 Plans: - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Plan, collect data, assess, examine, and report on C2BMC spiral integration testing - Support interoperability and integration of the BMDS program elements - Support the field testing of the European Deployment - Sustain the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training - Provide infrastructure, network, and troubleshooting support to: - C2BMC Control Center (CCC)			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - System Test and Operations Center (STOC) - Ballistic Missile Defense System (BMDS) Communications Network (BCN) - Parallel Staging Network (PSN) - BMDS Network Operations and Security Center (BNOSC) - Continue BMD OPIR Architecture (BOA) performance assessments, integration, and testing - Conduct concept development test for virtualized C2BMC services, service oriented architectures - CTTO Network Architectures - Conduct initial prototypes and associated operations with CTTO interfaces and architectures - Conduct NATO Multi-National Ensemble Test #3 / Joint Project Optical Windmill (JPOW) 2013 - Conduct Exercise Rapid Arrow 2013 German/Dutch Live Fire Event 			
Accomplishments/Planned Programs Subtotals	-	-	59.189

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

N/A

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 ends 1Q FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1Q FY2012. 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 (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. Competition will be conducted for CSS follow-on effort.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Master Test Plan Integrated Master Test Plan BMDS level Testing (Element/ System Test Lab Facilities)	SS/CPAF	JRDC :Colorado Springs, CO	-	-		37.336	Oct 2012	-		37.336	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	-	-		21.853	Oct 2012	-		21.853	Continuing	Continuing	Continuing
Subtotal			-	-		59.189		-		59.189			

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-	59.189	-	59.189			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Spiral 6.4 Cycle 5 Testing																												
GTD-04b (BMDS Distributed Ground Test)	▲																											
FTG-06a (GM Intercept Flight Test)	●																											
Spiral 6.4 GEM HW Installation at EUROM		▲																										
GTD-04d Part 1 (BMDS Distributed Ground Test)			+	+																								
FTM-15 (Aegis Intercept Flight Test)			●																									
GTI-04 ISR-1 (BMDS Integrated HWIL Ground Test)	+	+	+	+																								
GTX-04e (BMDS Focused Ground Test) -1					△																							
European Phase Adaptive Approach (EPAA)-1 Capability Declaration				▲																								
GTI-04e EUROM/CENTCOM (OT) (BMDS Integrated HWIL Ground Test)					✦	✦	✦																					
FTM-16 E2 (Aegis Intercept Flight Test)					△																							
FTM-18 (Aegis Intercept Flight Test)					△																							
FTG-06b (GM Intercept Flight Test)					△																							
GTI-04e EUROM/CENTCOM (DT) (BMDS Integrated HWIL Ground Test)					✦	✦																						
FTM-19 (Aegis Intercept Flight Test)					○																							
FTI-01 (FTO-01 Risk Reduction Flight Test)					△																							
GTD-04e EUROM (BMDS Distributed Ground Test)								✦	✦																			
GTD-04e CENTCOM (BMDS Distributed Ground Test)								✦	✦																			
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (DT)										✦	✦																	
FTO-01 (Operational Test)										✦	✦																	
FTM-21 E1/E2/E3 (Aegis Flight Test)												△																
FTM-22 E2 (Aegis Intercept Flight Test)												△																
GTD-04 NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)												✦	✦															
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (OT)												✦	✦															
AST-14 (Arrow WS Intercept Flight Test)												△																

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Install Spiral 8.2 Management Node - C2BMC Testbed												✦	✦	✦														
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed												✦	✦	✦														
Install Spiral 8.2 Mission Node - Ground Test												✦	✦															
WFTP-04e (Ground Test) (Warfighter Trial Period)													△															
AST-15 (Arrow WS Intercept Flight Test)													△															
FTG-08 (GM Intercept Flight Test) (Two-Stage)														○														
FTM-20 E1 (Aegis Intercept Flight Test)													△															
GTX-06a (BMDS Focused Ground Test)													△															
AA FTM-01/02 (Aegis Ashore Intercept Flight Test)														△														
FTM-24 (Aegis Intercept Flight Test)														△														
FTT-11a (THAAD Intercept Flight Test)														△														
FTM-20 E2 (Aegis Intercept Flight Test)															△													
FTM-25 E1 (Aegis Intercept Flight Test)															△													
FTX-19 (Aegis SBT Simulated Intercept Flight Test)															△													
GTI-06a (BMDS Integrated HWIL Ground Test)															△													
AST-16 (Arrow WS Intercept Flight Test)																△												
GTD-06a CENTCOM (BMDS Distributed Ground Test)																△												
GTD-06a EUCOM (BMDS Distributed Ground Test) (OT)																△												
GTD-06a EUCOM (BMDS Distributed Ground Test)																△												
GDEx-06a (Ground Test) (Warfighter Exercise)																△												
WFTP-06a (Ground Test) (Warfighter Trial Period)																△												
FTM-30 (Aegis SBT Intercept Flight Test)																	△											
FTX-10 (Cobra Dane Flight Test)																	△											
GTD-06a CENTCOM (BMDS Distributed Ground Test) (OT)																	△											

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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-06a NORTHCOM/PACOM (BMDS Distributed Ground Test)																			△									
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)																			△									
GTI-06 (BMDS Integrated HWIL Ground Test)																			△									
FTG-11 (GM Intercept Flight Test)																			○									
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																			○									
WFTP-06 (Ground Test) (Warfighter Trial Period)																			△									
GDEX-06 (Ground Test) (Warfighter Exercise)																			△									
GTI-ISR-16 (BMDS Integrated HWIL Ground Test)																			△									
AST-17 (Arrow WS Intercept Flight Test)																				△								
GTX-06b (BMDS Ground Test)																				△								
SFTM-1 E1/E2 (Aegis Simulated Intercept Flight Test)																												
FTM-26 E1 (Aegis Flight Test)																												
GTI-06b (BMDS Integrated HWIL Ground Test) (OT)																												
GTI-06b (BMDS Integrated HWIL Ground Test)																												
FTG-13 (GM Intercept Flight Test)																												
GTD-06b CENTCOM (BMDS Distributed Ground Test) (OT)																												
GTD-06b CENTCOM (BMDS Distributed Ground Test)																												
GTD-06b EUCOM (BMDS Distributed Ground Test) (OT)																												
GTD-06b EUCOM (BMDS Distributed Ground Test)																												
WFTP-06b (Ground Test) (Warfighter Trial Period)																												
GDEX-06b (Ground Test) (Warfighter Exercise)																												
Spiral 8.2 Tri-Node IOC																												
SFTM-2 E2 (Aegis Intercept Flight Test)																												
FTX-20 (Aegis SBT Flight Test)																												
AST-18 (Arrow WS Intercept Flight Test)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Spiral 6.4 Cycle 5 Testing	1	2011	1	2011
GTD-04b (BMDS Distributed Ground Test)	2	2011	2	2011
FTG-06a (GM Intercept Flight Test)	1	2011	1	2011
Spiral 6.4 GEM HW Installation at EUCOM	2	2011	2	2011
GTD-04d Part 1 (BMDS Distributed Ground Test)	3	2011	4	2011
FTM-15 (Aegis Intercept Flight Test)	3	2011	3	2011
GTI-04 ISR-1 (BMDS Integrated HWIL Ground Test)	1	2011	4	2011
GTX-04e (BMDS Focused Ground Test) -1	2	2012	2	2012
European Phase Adaptive Approach (EPAA)-1 Capability Declaration	1	2012	1	2012
GTI-04e EUCOM/CENTCOM (OT) (BMDS Integrated HWIL Ground Test)	2	2012	4	2012
FTM-16 E2 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
GTI-04e EUCOM/CENTCOM (DT) (BMDS Integrated HWIL Ground Test)	3	2012	4	2012
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012
FTI-01 (FTO-01 Risk Reduction Flight Test)	4	2012	4	2012
GTD-04e EUCOM (BMDS Distributed Ground Test)	4	2012	1	2013
GTD-04e CENTCOM (BMDS Distributed Ground Test)	1	2013	2	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (DT)	2	2013	3	2013
FTO-01 (Operational Test)	2	2013	3	2013
FTM-21 E1/E2/E3 (Aegis Flight Test)	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013
GTD-04 NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)	3	2013	4	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (OT)	3	2013	4	2013
AST-14 (Arrow WS Intercept Flight Test)	3	2013	3	2013
Install Spiral 8.2 Element and User Gateway Nodes (5) - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Management Node - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Mission Node - Ground Test	4	2013	1	2014
WFTP-04e (Ground Test) (Warfighter Trial Period)	1	2014	1	2014
AST-15 (Arrow WS Intercept Flight Test)	2	2014	2	2014
FTG-08 (GM Intercept Flight Test) (Two-Stage)	3	2014	3	2014
FTM-20 E1 (Aegis Intercept Flight Test)	3	2014	3	2014
GTX-06a (BMDS Focused Ground Test)	3	2014	3	2014
AA FTM-01/02 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
FTM-24 (Aegis Intercept Flight Test)	4	2014	4	2014
FTT-11a (THAAD Intercept Flight Test)	4	2014	4	2014
FTM-20 E2 (Aegis Intercept Flight Test)	1	2015	1	2015
FTM-25 E1 (Aegis Intercept Flight Test)	1	2015	1	2015
FTX-19 (Aegis SBT Simulated Intercept Flight Test)	1	2015	1	2015
GTI-06a (BMDS Integrated HWIL Ground Test)	1	2015	1	2015
AST-16 (Arrow WS Intercept Flight Test)	2	2015	2	2015
GTD-06a CENTCOM (BMDS Distributed Ground Test)	2	2015	2	2015
GTD-06a EUCOM (BMDS Distributed Ground Test) (OT)	2	2015	2	2015
GTD-06a EUCOM (BMDS Distributed Ground Test)	2	2015	2	2015
GDEx-06a (Ground Test) (Warfighter Exercise)	2	2015	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
WFTP-06a (Ground Test) (Warfighter Trial Period)	2	2015	2	2015
FTM-30 (Aegis SBT Intercept Flight Test)	3	2015	3	2015
FTX-10 (Cobra Dane Flight Test)	3	2015	3	2015
GTD-06a CENTCOM (BMDS Distributed Ground Test) (OT)	3	2015	3	2015
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test)	3	2015	3	2015
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)	3	2015	3	2015
GTI-06 (BMDS Integrated HWIL Ground Test)	3	2015	3	2015
FTG-11 (GM Intercept Flight Test)	4	2015	4	2015
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
WFTP-06 (Ground Test) (Warfighter Trial Period)	4	2015	4	2015
GDEx-06 (Ground Test) (Warfighter Exercise)	4	2015	4	2015
GTI-ISR-16 (BMDS Integrated HWIL Ground Test)	4	2015	4	2015
AST-17 (Arrow WS Intercept Flight Test)	1	2016	1	2016
GTX-06b (BMDS Ground Test)	1	2016	1	2016
SFTM-1 E1/E2 (Aegis Simulated Intercept Flight Test)	3	2016	3	2016
FTM-26 E1 (Aegis Flight Test)	3	2016	3	2016
GTI-06b (BMDS Integrated HWIL Ground Test) (OT)	3	2016	3	2016
GTI-06b (BMDS Integrated HWIL Ground Test)	3	2016	3	2016
FTG-13 (GM Intercept Flight Test)	4	2016	4	2016
GTD-06b CENTCOM (BMDS Distributed Ground Test) (OT)	4	2016	4	2016
GTD-06b CENTCOM (BMDS Distributed Ground Test)	4	2016	4	2016
GTD-06b EUCOM (BMDS Distributed Ground Test) (OT)	4	2016	4	2016
GTD-06b EUCOM (BMDS Distributed Ground Test)	4	2016	4	2016
WFTP-06b (Ground Test) (Warfighter Trial Period)	4	2016	4	2016
GDEx-06b (Ground Test) (Warfighter Exercise)	4	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Spiral 8.2 Tri-Node IOC	1	2017	1	2017
SFTM-2 E2 (Aegis Intercept Flight Test)	1	2017	1	2017
FTX-20 (Aegis SBT Flight Test)	1	2017	1	2017
AST-18 (Arrow WS Intercept Flight Test)	1	2017	1	2017
GTD-06b NORTHCOM/PACOM (BMDS Distributed Ground Test)	1	2017	1	2017
GTD-06b NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)	1	2017	1	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
GTX-07a (BMDS Focused Ground Test)	3	2017	3	2017
FTG-15 (GM Intercept Flight Test)	4	2017	4	2017
GTX-07b (BMDS Focused Ground Test)	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	-	62.725	94.394	-	94.394	88.115	105.185	98.861	100.788	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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 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
- On-site maintenance of hardware and software on a 8 hours a day 5 days a week basis
- 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 network and equipment operations monitoring
- Support to operators and testers during test, exercises, and wargames

Off-site support provides:

- C2BMC Control Center (help desk) in Colorado Springs, CO provides
- Real-time resolution of operational issues

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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- 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
- 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

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 2011	FY 2012	FY 2013
<p>Title: Operations and Support</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: FY 2011 accomplishments are reported in budget project MD01, PE 0603896C - Ballistic Missile Defense C2BMC \$59.237 Million</p> <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Maintain C2BMC training suites - Sustain Global Engagement Manager (GEM) trainers - Develop curriculum for and train operators, maintenance personnel, and testers - Resolve real-time operational issues through the C2BMC Control Center and BMDS Network Operation and Security Center (BNOSC) at FY 2010 level 	<p>-</p> <p>0</p>	<p>62.725</p> <p>0</p>	<p>64.809</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - 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 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 test sites - Support Host Nation operations, demonstrations, and tests - Provide sustainment training/skills proficiency to C2BMC operations - Upgrade and maintain computer network defense and network monitoring in the BNOSC - Operate the BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide support/sustainment for C2BMC installations - Provide sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Support the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continue round-the-clock sustainment for Communications capabilities with AN/TPY-2 (previously in Program Element 0603884C, Project MD11) - Continue on-site C2BMC support of fielded sites for hardware and software (previously in Program Element 0603884C, Project MD11) - Continue C2BMC operator training for fielded capabilities (previously in Program Element 0603884C, Project MD11) - Continue sustaining engineering support and integrated logistics support for fielded hardware and software (previously in Program Element 0603884C, Project MD11) <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Maintain C2BMC training suites - Sustain Global Engagement Manager (GEM) trainers - Develop curriculum for and train operators, maintenance personnel, and testers - Resolve real-time operational issues through the C2BMC Control Center and Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC) at FY 2010 level - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations - 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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Provide support of AN/TPY-2 radar communications nodes - Provide operations and sustainment personnel to support test and special operations for Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) at 5 deployed operational test sites - Support Host Nation operations, demonstrations, and tests - Provide sustainment training/skills proficiency to C2BMC operations - Upgrade and maintain computer network defense and network monitoring in the BNOSC - Operate the BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide support/sustainment for C2BMC installations - Provide sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Support the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continue round-the-clock sustainment for Communications capabilities with AN/TPY-2 (previously in Program Element 0603884C, Project MD11) - Continue on-site C2BMC support of fielded sites for hardware and software (previously in Program Element 0603884C, Project MD11) - Continue C2BMC operator training for fielded capabilities (previously in Program Element 0603884C, Project MD11) - Continue sustaining engineering support and integrated logistics support for fielded hardware and software (previously in Program Element 0603884C, Project MD11) 				
Title: Concurrent, Test, Training, and Operations (CTTO)		-	-	29.585
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments:				
- FY 2011 accomplishments are reported in budget project MD01- PE 0603896C - Ballistic Missile Defense C2BMC \$73.723 Million				
FY 2012 Plans:				
- FY 2012 plans are captured in MX04, PE 0603888C - Ballistic Missile Defense Test and Targets \$32.389 Million				
FY 2013 Plans:				
Operate and Sustain C2BMC Spiral 6.4 Tri-Node (Tri-Node includes PACOM, NORTHCOM, and STRATCOM) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS).				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Operate and Sustain C2BMC Spiral 6.4 EUCOM and CENTCOM Distributed Training System (DTS). - Continue providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture. - Monitor and coordinate the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of CTTO. - Development of C2BMC Spiral 8.2 Training Systems. 			
Accomplishments/Planned Programs Subtotals	-	62.725	94.394

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603893C: <i>Space Tracking & Surveillance System</i>	105.580	96.232	51.313		51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	151.032	176.831	9.730		9.730	9.725	9.739	9.725	9.728	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604884C: <i>Airborne Infrared (ABIR)</i>	71.550	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	71.550

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 ends 1Q FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1Q FY2012. 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 (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. Competition will be conducted for CSS follow-on effort.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operations and Support Unit Personnel, Control System Improvement, Sustaining Support	SS/CPIF	Lockheed Martin Team:Arlington, VA	-	13.001	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Operations and Support Indirect Support	MIPR	DISA DECC:-	-	4.761	Oct 2011	9.000	Oct 2012	-		9.000	Continuing	Continuing	Continuing
Operations and Support DOTMLPF	IA	SETAC:-	-	0.500	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Operations and Support Warfighter Training	IA	Lockheed Martin Team:Arlington, VA	-	2.661	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Operations and Support Teleport Sustainment	MIPR	SPAWAR:San Diego, CA	-	2.799	Oct 2011	2.045	Oct 2012	-		2.045	Continuing	Continuing	Continuing
Operations and Support Unit Personnel, Control System Improvement, Sustaining Support	SS/IDIQ	Lockheed Martin Team:Arlington, VA	-	39.003	Jan 2012	53.764	Jan 2013	-		53.764	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) Concurrent Test, Training And Operations	SS/CPAF	Northrop Grumman:Boeing	-	-		3.782	Nov 2012	-		3.782	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) Concurrent Test, Training And Operations/Training Enhancements	SS/CPAF	Lockheed Martin Team Arlington,VA:Huntsville, Al, Colorado Springs, CO	-	-		25.803	Nov 2012	-		25.803	Continuing	Continuing	Continuing
Subtotal			-	62.725		94.394		-		94.394			

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	62.725		94.394		-		94.394			

Remarks

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	14.564	14.922	18.602	-	18.602	18.961	18.684	17.667	18.488	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2013, Program Wide Support reflects a proportional increase as a result of increases to BMD C2BMC..

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	14.564	14.922	18.602
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	14.564	14.922	18.602

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	MD40: <i>Program-Wide Support</i>

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

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	55.351	41.174	55.550	-	55.550	53.139	53.718	59.291	60.540	Continuing	Continuing
MD03: <i>Joint Warfighter Support</i>	52.986	39.484	52.765	-	52.765	50.501	51.145	56.419	57.522	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	2.365	1.690	2.785	-	2.785	2.638	2.573	2.872	3.018	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

The Joint Warfighter Support Program enables the Warfighter and the Developer to work together to coordinate:

- Information/analysis through technical reviews and technical analysis development to support shot doctrine development
- System attributes, capability needs, and the identification of gaps and seams in war fighting capability
- Inputs to BMDS development and product improvements (through Modification and Fielding Requests)
- Timely responses to Warfighter Requests for Information and Requests for Analyses to support contingency and routine BMDS operations
- BMDS objectives incorporated into Combatant Commander and Developer-sponsored wargames and exercises

The Joint Warfighter Support Program enables the effective delivery of BMDS capabilities to the Warfighter and ensures Warfighter participation in the identification and development of new capabilities via the Warfighter Involvement Process. The Joint Warfighter Support Program is executed within a single project, Joint Warfighter Support, through the performance of the following major functions/tasks:

- Enable Joint Staff and Service collaboration on BMDS issues by providing strategic level interfaces from MDA, to the Military Services, COCOMs, the Joint Staff, and the Office of the Under Secretary of Defense for Policy (OSD (P))
- Focus on cross-Departmental initiative (such as the transition of BMDS Elements to the Services and emergency deployments of BMDS capabilities), and cross-Departmental Corporate Boards (such as the Missile Defense Executive Board)
- Develop and maintain the BMDS Operational Readiness Reporting System (BORRS) to track and report up to the minute BMDS operational readiness, configuration control and situational awareness information and provide technical assistance that enables senior leader decisions and also provides data for accurate operational availability and reliability cost drivers
- Develop and maintain the Integrated Scheduling Tool (IST) for global asset management operational scheduling of Homeland Missile Defense, Missile Warning and Space Surveillance, and Regional / Theater Missile Defense
- Current operations execution through the MDA Operations Support Center (OSC) at the Missile Defense Integration and Operations Center (MDIOC)

MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	68.726	41.225	58.089	-	58.089
Current President's Budget	55.351	41.174	55.550	-	55.550
Total Adjustments	-13.375	-0.051	-2.539	-	-2.539
• Congressional General Reductions	-0.399	-0.051			
• Congressional Directed Reductions	-10.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.976	-			
• Other Adjustment	-	-	-2.539	-	-2.539

Change Summary Explanation

FY 2011: The FY 2011 decrease of \$13.375M is reflected as follows:

- \$10M congressional directed reduction in the Department of Defense and Full Year Appropriation Act, 2011 (Public Law 112-10)
- \$2.976M Small Business Innovation Research Program/Small Business Technology Transfer (SBIR/STTR)
- \$0.399M realignment to DoD priorities

FY 2012: The FY 2012 decrease of \$.051M reflects a realignment to DoD priorities

FY 2013: The FY 2013 decrease of \$2.539M reflects a realignment to DoD priorities

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD03: <i>Joint Warfighter Support</i>	52.986	39.484	52.765	-	52.765	50.501	51.145	56.419	57.522	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

The Joint Warfighter Support Program is planned and executed jointly by the Warfighter Strategic Integration Directorate and the Warfighter Operational Support functions within the Test Directorate. The Warfighter Strategic Integration Directorate executes BMDS Operational Support and BMDS Education and Training and is responsible for interfacing and coordinating with the Functional Combatant Commands, the Joint Staff and Military Services. Within the Test Directorate, the Warfighter Operational Support function executes Wargames and Exercises and BMDS Capability Delivery and is responsible for interfacing with Geographic Combat Commands.

Joint Warfighter Support is comprised of six primary functions/responsibilities/tasks: 1) Geographic Combatant Commander Support; 2) Joint Staff, Military Service, STRATCOM, NORTHCOM, and JFCC Integration; 3) Current Operations Support; 4) Exercises and Wargames; 5) BMDS Training and Education; 6) Plans and Capability.

Joint Warfighter Support acts as the Agency coordination element to provide Executive secretarial support to Operational Forces Standing Committee as required and coordinate Agency internal coordination for the Warfighter Involvement Process (including Primary Capability List/Modification and Fielding Request List element workups).

1) Geographic Combatant Commander Support

The Warfighter Strategic Integration Directorate is responsible for interfacing with Geographic Combatant Commands (GCCs) for BMDS capabilities delivered and for assessing MDA's ability to provide current and future capabilities to meet war fighting needs.

- The Warfighter Strategic Integration Directorate coordinates with the GCCs for asset management processes and assisting in planning, capability delivery and fielding assets as required
- The Ground Test Execution Directorate interfaces with the Combatant Commands at US Pacific Command, US European Command, and US Central Command
- Provides operational readiness reporting in accordance with USSTRATCOM Instructions on BMDS assets
- Synchronize the execution of Warfighter Operational and Sustainment Requirements
- Maintain BMDS Configuration Control through the positive control of test, development, and operational activities in accordance with USSTRATCOM Instruction 538-1 and approved configuration documentation
- Provide Asset Management training and support in response to Warfighter requirements

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
<p>-Manage the MDA process for responding to Warfighting Requests for Analysis and Requests for Information (RFA/RFI)</p> <p>2) Joint Staff, Services and Combatant Commander Integration The Developer-Warfighter Interface continues to be critically important for the effective and efficient fielding of BMDS capabilities worldwide. To this end, the Warfighter Interface Integration Directorate maintains a Joint Staff, Service and Combatant Commander integration responsibility.</p> <p>3) Operations Support The Warfighter Strategic Integration Directorate performs the critical and unique function of providing around the clock BMDS Operations Support to MDA leadership and Warfighter stakeholders at Combatant Commander staffs, Functional Component Commands and military units. Current operations support includes but is not limited to: maintaining the MDA Operations Support Center at the Missile Defense Integration and Operations Center (MDIOC) at Schriever AFB, CO 24 hours a day, 7 days a week, 365 days a year and the MDA Mission Operations Center at MDA Headquarter 5 days per week, 16 hours per day; maintain the Integrated Scheduling Tool (IST) to include the planning and execution of scheduled maintenance, upgrades and testing using the Asset Management System; maintaining strict control of BMDS architecture configurations consistent with the Operations Capacity Baseline and Event Owner needs as properly scheduled; the measurement and accounting of BMDS Operational Availability, Equipment Readiness Rates and Warfighter Availability through the execution of BORRS; reporting Commanders Critical Information Requirements as defined by MDA leadership; maintaining a current and accurate BMDS Handbook; and readiness to support Warfighter Exercises or Real World Contingencies on short notice; Manage the MDA process for responding to Warfighter Requests for Analysis and Requests for Information (RFA/RFI); Perform BMDS Strategic Planning in concert with Joint Forces Component Command Integrated Missile Defense (JFCC IMD); Provide Geographic Combatant Command (GCC) Asset Management Training and staff augmentation as required.</p> <p>4) Exercises and Wargames Conducting exercises and wargames enables end-user mission training, qualification, certification and rehearsal of mission operations, strengthens user confidence in the current system and shapes development of the future BMDS. This activity enables the Warfighter to build missile defense plans and Tactics, Techniques and Procedures for the near term BMDS, and then tests execution of those plans via high fidelity simulations. It also incorporates system engineering and interoperability test activities, when possible, to leverage MDA materiel development events by providing real-world training to operators. This activity provides analysis support, as required, for each wargame and exercise to conduct data collection and analysis, and prepares and publishes an event After Action Assessment Report. Finally, exercises and wargames create the conditions for continued, in-depth foreign and/or international participation in BMDS operations and development. Geographic Combatant Commander Support enables key Warfighters to participate in selected MDA activities, wargames and exercises to obtain their input and feedback on the BMDS developmental processes. Every year BMDS overlays are incorporated into Combatant Command Tier 1 Exercises to enable end-user mission rehearsal and sustainment training, qualification and certification of BMDS operations. The yearly, or in some cases every other year, exercises are necessary for both familiarization of the user, but also to ensure capability upgrades accomplished in each BMDS capability upgrade are added to the exercise and training scenarios. By involving participating Combatant Commands in building coherent missile defense plans and Tactics, Techniques and Procedures for the near term BMDS, and then testing cohesive execution of those plans via high fidelity simulations, this effort optimizes BMDS operational effectiveness.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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5) BMDS Training and Education

This activity develops and maintains BMDS Training and Education at the system level that is not conducted by the Services. Courses for Joint Warfighters, Department of Defense officials and the Services provide critical knowledge on BMDS capabilities and system operation. The training focuses on how the elements of the BMDS interact in the joint environment and what is needed to employ those individual elements effectively as an integrated BMDS. A key part of this activity includes developing BMDS educational courses and conducting education and training of select BMDS stakeholders, staffs and organizations on emerging BMDS capabilities development. As new BMDS capabilities are transitioned to the field, upgrades and improvements will be incorporated to maintain the requisite level of training.

6) Plans and Capability Delivery

These functions enable effective operation of emerging and future BMDS material capabilities and technologies. These activities result in Warfighter development of new BMDS employment constructs and Concepts of Operation. They also serve MDA as the vehicle for the Warfighter Involvement Process which seeks user feedback and guidance to shape future capability development of the BMDS and serves as the lead for the conduct of operational readiness assessments and Military Utility Assessments for the BMDS and is the integration point for the Warfighter Requests for Information and Requests for Analyses. These processes also provide Joint Warfighter support to include, for example, Aegis Ashore site surveys and feasibility studies leading to the deployment of Command and Control/Battle Management Communications (C2BMC) and TPY-2 to OCONUS sites, and support to GMD firing doctrine analysis for Combatant Commanders.

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

	FY 2011	FY 2012	FY 2013
Title: Warfighter Operational Support / Wargames and Exercises	27.612	21.988	32.141
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
This plan was previously captured in budget project MD03 Exercise and Wargames (\$24.636 million), Warfighter Interface Management and Combatant Commander (COCOM) Support (\$2.429 million) and Plans and Capability Delivery (\$.547 million) and is now a part of Warfighter Operational Support / Wargames and Exercises.			
-AIR MISSILE DEFENSE 11-01 CENTCOME Exercise 2 2Q FY 2011			
-AIR MISSILE DEFENSE 11-01 CENTCOM Exercise 4 4Q FY 2011			
-International Symposium on Integrated AIR MISSILE DEFENSE SYMP 2Q FY 2011			
-ASSURED RESPONSE 04X Exercise Event 1Q FY 2011			
-ASSURED RESPONSE 04d Exercise Event 2Q FY2011			
-Global Defender Exercise Event 4Q FY 2011			
-Global Defender Exercise Planning 2Q FY 2011			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -BMDS WARGAME Series Event 1Q FY 2011 -EAGLE RESOLVE 11 Exercise Event 3Q FY 2011 -GLOBAL LIGHTNING 11 Exercise Event 3Q FY 2011 -GLOBAL THUNDER 11-1 Exercise Event 1Q FY 2011 -GLOBAL THUNDER 11-2 Exercise Event 3Q FY 2011 -JOINT AIR DEFENSE CENTCOM Exercise Event 1 & 2 1Q FY 2011 -JOINT AIR DEFENSE CENTCOM Exercise Event 3 & 4 2Q FY 2011 -JOINT AIR DEFENSE CENTCOM Exercise Event 5 & 6 3Q FY 2011 -JOINT AIR DEFENSE CENTCOM Exercise Event 7 4Q FY 2011 -KEEN EDGE 12 Exercise Planning 3Q FY 2011 -KEY RESOLVE 12 Exercise Planning 3Q FY 2011 -MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 4Q FY 2011 -NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 2Q FY 2011 -SHARP SENTRY Table Top Exercise 1 Event 2Q FY 2011 -SHARP SENTRY Table Top Exercise 2 Event 3Q FY 2011 -SHARP SENTRY Table Top Exercise 3 & 7 Event 4Q FY 2011 -TERMINAL FURY 11 Exercise Event 3Q FY 2011 -TERMINAL FURY 12 Exercise Planning 3Q FY 2011 -ULCHI FREEDOM GUARD 11 Event 4Q FY 2011 -ULCHI FREEDOM GUARD 11 Planning 1Q FY 2011 -VIGILANT SHIELD 11-1 Exercise Event 1Q FY 2011 -Provided support for Component Command participants to attend numerous missile defense exercises and wargames -Supported travel requirements of the Directorate for Warfighter Integration Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provided Contractor Technical Services Support to the Directorate for Warfighter Integration -Enabled the Warfighter to define, test, deploy and employ new missile defense capabilities -Trained to maintain proficiency with current capabilities -Provided feedback and support involvement in MDA's BMDS development process -Supported the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and refined the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Developed Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>-Provided 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process</p> <p>-Conducted annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements</p> <p>-Conducted Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development</p> <p>-Conducted Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use</p> <p>-Conducted BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders</p> <p>-Worked with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development</p> <p>-Managed MDA/Geographic Combatant Command (COCOM) interfaces</p> <p>-Provided support to the development and update of BMD portions of COCOM Operation Plans (OPLANS) and Contingency Plans (CONPLANS)</p> <p>-Provided support to the BMDS Capability Delivery process and transition and transfer to the services</p> <p>-Supported USSTRATCOM with development of the annual BMDS Military Utility Assessment</p> <p>FY 2012 Plans: Below is the following Wargame and Exercise Events for FY 2012:</p> <p>-AIR MISSILE DEFENSE 12 CENTCOM Exercise 1 2Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 CENTCOM Exercise 2 2Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 CENTCOM Exercise 3 2Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 CENTCOM Exercise 4 4Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 EUCOM Exercise 1 1Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 EUCOM Exercise 2 2Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 EUCOM Exercise 3 3Q FY 2012</p> <p>-AIR MISSILE DEFENSE 12 EUCOM Exercise 4 4Q FY 2012</p> <p>-ARMY CENTRAL COMMAND INTEGRATED AIR MISSILE DEFENSE SYMP 3Q FY 2012</p> <p>-ASSURED RESPONSE Exercise Series 4Q FY 2012</p> <p>-BMDS WARGAME Series Event 3Q FY 2012</p> <p>-CONGRESSIONAL WARGAME 2Q FY2012</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-CONSOLIDATED PLANNING Exercise Event 4Q FY 2012			
-CONSOLIDATED PLANNING Exercise Planning 2Q FY 2012			
-EAGLE RESOLVE 12 Exercise Event 3Q FY 2012			
-GLOBAL LIGHTNING 12 Exercise Event 3Q FY 2012			
-GLOBAL LIGHTNING 12 Exercise Planning 2Q FY 2012			
-GLOBAL THUNDER 13 Planning 3Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 1 1Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 2 1Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 3 2Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 4 2Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 5 3Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 6 3Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 7 4Q FY 2012			
-JOINT AIR DEFENSE CENTCOM Exercise Event 8 4Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 1 1Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 2 1Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 3 2Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 4 2Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 5 3Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 6 3Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 7 4Q FY 2012			
-JOINT AIR DEFENSE EUCOM Exercise Event 8 4Q FY 2012			
-JOINT PROJECT OPTIC WINDMILL 2013 Planning 2Q FY 2012			
-KEEN EDGE 12 Exercise Event 2Q FY 2012			
-KEY RESOLVE 12 Exercise Event 2Q FY 2012			
-KEY RESOLVE 13 Exercise Planning 3Q FY 2012			
-MISSILE DEFENSE CONFERENCE 2Q FY 2012			
-MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 4Q FY 2012			
-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 2Q FY 2012			
-NIMBLE TITAN 12 Wargame Event 3Q FY 2012			
-TERMINAL FURY 12 Exercise Event 3Q FY 2012			
-ULCHI FREEDOM GUARD 12 Event 3Q FY 2012			
-ULCHI FREEDOM GUARD 12 Planning 1Q FY 2012			
-VIGILANT SHIELD 11-2 Exercise Event 1Q FY 2012			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -VIGILANT SHIELD 13 Exercise Planning 3Q FY 2012 -Provide support for Component Command participants to attend numerous missile defense exercises and wargames -Support travel requirements of the Directorate for Warfighter Interface Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provide Contractor Technical Services Support to the Directorate for Warfighter Interface -Enables the Warfighter to define, test, deploy and employ new missile defense capabilities -Train to maintain proficiency with current capabilities -Provide feedback and support involvement in MDA's BMDS development process -Support to the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Develop Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded -Provide 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process -Annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements -Conduct Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development -Conduct Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use -Conduct BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders -Work with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Manage MDA/COCOM interfaces -Provide support to the development and update of BMD portions of COCOM OPLANS and CONPLANS -Provide support to the BMDS Capability Delivery process and transition and transfer to the services -Support USSTRATCOM with development of the annual BMDS Military Utility Assessment 			
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FY 2013 Plans:

Below is the following Wargame and Exercise Events for FY 2013:

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-AIR MISSILE DEFENSE 12 CENTCOM Exercise 2 2Q FY 2013			
-AIR MISSILE DEFENSE 12 CENTCOM Exercise 3 3Q FY 2013			
-AIR MISSILE DEFENSE 12 CENTCOM Exercise 4 4Q FY 2013			
-AIR MISSILE DEFENSE 12 EUCOM Exercise 1 1Q FY 2013			
-AIR MISSILE DEFENSE 12 EUCOM Exercise 2 2Q FY 2013			
-AIR MISSILE DEFENSE 12 EUCOM Exercise 3 3Q FY 2013			
-AIR MISSILE DEFENSE 12 EUCOM Exercise 4 4Q FY 2013			
-International Symposium on INTEGRATED AIR MISSILE DEFENSE SYMP 3Q FY 2013			
-ASSURED RESPONSE Exercise Series 4Q FY 2013			
-BMDS WARGAME Series Event 3Q FY 2013			
-CONSOLIDATED PLANNING Exercise Event 4Q FY 2013			
-CONSOLIDATED PLANNING Exercise Planning 2Q FY 2013			
-EAGLE RESOLVE 12 Exercise Event 3Q FY 2013			
-GLOBAL LIGHTNING 12 Exercise Event 3Q FY 2013			
-GLOBAL LIGHTNING 12 Exercise Planning 2Q FY 2013			
-GLOBAL THUNDER 13 Planning 3Q FY 2013			
-JOINT AIR DEFENSE CENTCOM Exercise Event 1 & 2 1Q FY 2013			
-JOINT AIR DEFENSE CENTCOM Exercise Event 3 & 4 2Q FY 2013			
-JOINT AIR DEFENSE CENTCOM Exercise Event 5 & 6 3Q FY 2013			
-JOINT AIR DEFENSE CENTCOM Exercise Event 7 & 8 4Q FY 2013			
-JOINT AIR DEFENSE EUCOM Exercise Event 1 & 2 1Q FY 2013			
-JOINT AIR DEFENSE EUCOM Exercise Event 3 & 4 2Q FY 2013			
-JOINT AIR DEFENSE EUCOM Exercise Event 5 & 6 3Q FY 2013			
-JOINT AIR DEFENSE EUCOM Exercise Event 7 & 8 4Q FY 2013			
-JOINT PROJECT OPTIC WINDMILL 2013 Planning 2Q FY 2013			
-KEEN EDGE 12 Exercise Event 2Q FY 2013			
-KEY RESOLVE 12 Exercise Event 2Q FY 2013			
-KEY RESOLVE 13 Exercise Planning 3Q FY 2013			
-MISSILE DEFENSE CONFERENCE 2Q FY 2013			
-MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 4Q FY 2013			
-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 2Q FY 2013			
-NIMBLE TITAN 12 Wargame Event 3Q FY 2013			
-TERMINAL FURY 12 Exercise Event 3Q FY 2013			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -ULCHI FREEDOM GUARD 12 Event 3Q FY 2013 -ULCHI FREEDOM GUARD 12 Planning 1Q FY 2013 -VIGILANT SHIELD 11-2 Exercise Event 1Q FY 2013 -VIGILANT SHIELD 13 Exercise Planning 3Q FY 2013 -Provide support for Component Command participants to attend numerous missile defense exercises and wargames -Support travel requirements of the Directorate for Warfighter Interface Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provide Contractor Technical Services Support to the Directorate for Warfighter Interface -Enables the Warfighter to define, test, deploy and employ new missile defense capabilities -Train to maintain proficiency with current capabilities -Provide feedback and support involvement in MDA's BMDS development process -Support to the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Develop Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded -Provide 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process -Annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements -Conduct Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development -Conduct Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use -Conduct BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders -Work with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Manage MDA/COCOM interfaces -Provide support to the development and update of BMD portions of COCOM OPLANS and CONPLANS -Provide support to the BMDS Capability Delivery process and transition and transfer to the services 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Support USSTRATCOM with development of the annual BMDS Military Utility Assessment

Title: Warfighter Strategic Integration	23.704	16.408	20.624
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:
This plan was previously captured in budget project MD03 in Operations Support (\$6.903 million), Joint Staff/Service/COCOM Integration (\$2.602 million), Ballistic Missile Defense Training & Education (\$7.583 million), Warfighter Interface Management and Combatant Commander (COCOM) Support (\$6.069 million) and Plans and Capability Delivery (\$.547 million) and is now a part of Warfighter Strategic Integration.

- Manned and operated MDA's Operations Support Center (OSC) 24 hours per day, 7 days per week, 365 days per year to gather, develop, maintain, communicate and fuse all BMDS situational awareness data concerning the current Health and Status of the BMDS, maintained operational and exercise configuration control of the BMDS architecture, reported operational readiness, conducted pre-fielding and fielding asset coordination responsibilities, provided real time BMDS information to all BMDS stakeholders and provided crisis action planning and support during exercises and real world contingencies
- Planned, organized, resourced and managed BMD operations support functions to optimize mission performance
- Maintained approved BMDS operational configuration and enabled on-site developmental operations, sustainment, and operational activities in a Concurrent Test, Training and Operations (CTTO) environment
- Precisely aligned BMDS components in accordance with the currently approved Operational or Test Configuration. This required participation in the Integration Support Group and the MDA Program Change Board Corporate Process, and real time management ensuring 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
- 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
- Ensured BMDS Watch Officer (BWO) and Warfighter have situational awareness of current and proposed BMDS Operational Baseline requirements

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Implemented BMDS Operational Readiness Reporting System (BORRS) Data for Geographic Combatant Commands (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 Geographic (COCOM) contingencies, Wargames and 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 increase fidelity and technical detail in configuration specifications -Continued to coordinate and align BMDS scheduled maintenance to maximize availability -Continued integration of Capability Demonstration-like objectives into the Ground Test Campaign -Continued to update the BMDS Handbook and create and publish the BMDS Handbook for future BMDS capabilities -Continued quarterly BMDS System Operability Checks -Continued to improve the BMDS Operational Readiness Reporting System (BORRS) -Improved Operations Support Center and Asset Management Continuity of Operations capabilities -Integrated configuration management tool capabilities into the on-line Asset Management tools -Integrated situational awareness tool capabilities into the on-line Asset management tools -Continued to improve the MDA-wide BMDS Operational Reporting process -Provided strategic-level interfaces between MDA and the Military Services, the Joint Staff, and the Office of the Under Secretary of Defense for Policy (OSD (P)), with a focus on cross-Departmental initiatives (such as the transition of BMDS Elements/Components to the Services), and cross-Departmental Corporate Boards (such as the Missile Defense Executive Board) -Maintained daily, strategic-level interfaces with the Military Services and Joint Staff, providing them with the critical information they require to plan for the delivery, fielding, and operation of BMDS capabilities -Provided direct support to the Director’s Action Group for MDA senior leadership projects -Supported MDA Senior Leadership participation in the Missile Defense Executive Board (MDEB), the Joint Requirements Oversight Council, the Joint Capability Boards and other interdepartmental venues -Served as 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 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Enabled BMDS operational situational awareness and real-world crisis response to the leadership through the MDA/HQ Mission Operations Center -Provided MDA`s planner level coordination for Combatant Command, Joint Staff, and inter-agency staff actions -Supported Component Command Tabletop Exercises and Experiments to facilitate the development of Regional Concepts of Operation and Operational Concepts development for Early Intercept concepts and other programs such as Nimble Fire 11 -Assisted Warfighters to update the annual BMDS Prioritized Capabilities List to reflect changes in Component Command priorities for needed BMDS enhancements -Assisted Strategic Command with its annual BMDS Military Utility Assessment -Continued to work with the Program Offices and the Warfighter to establish Concepts of Operation for transitioning BMDS capabilities -Continued to prepare the MDA leadership to represent the Agency to the Missile Defense Executive Board on critical BMDS related topics/decisions -Supported Combatant Commanders in execution of real-world operations/contingencies -Managed Warfighter Request for Analysis/Request for Information (RFA/RFI) process within MDA -Operated the BMDS Training and Education Center -Provided BMDS-Level Training and Education for the Joint Warfighters, Defense Officials and Services -Provided Training Transition support to the Services -Provided training by the BMDS Training & Education Center -Provided 130 courses (~2500 hours of instruction) to approximately 1600 students -Provided simulated missile injects over the live Satellite Theater Event System broadcast -Continued to operate the Joint BMDS Training and Education Center Campus -Developed Combatant Command training courses -Provided support for Component Command participants to attend numerous missile defense exercises and wargames -Supported travel requirements of the Directorate for Warfighter Interface Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provided Contractor Technical Services Support to the Directorate for Warfighter Interface -Enabled the Warfighter to define, test, deploy and employ new missile defense capabilities -Trained to maintain proficiency with current capabilities -Provided Feedback and support involvement in MDA`s BMDS development -Supported the Joint Functional Component Commander in 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 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Provided 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process</p> <p>-Conducted Annual updates of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements</p> <p>-Conducted Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development</p> <p>-Conducted Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use</p> <p>-Conducted BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders</p> <p>-Worked with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development</p> <p>-Managed MDA/Geographic Combatant Command (COCOM) interfaces</p> <p>-Provided support to the development and update of BMD portions of COCOM Operation Plans (OPLANS) and Contingency Plans (CONPLANS)</p> <p>-Provided support to the BMDS Capability Delivery process and transition and transfer to the services</p> <p>-Supported USSTRATCOM with development of the annual BMDS Military Utility Assessment</p> <p>FY 2012 Plans:</p> <p>-Man and operate MDA's Operations Support Center (OSC) 24 hours per day, 7 days per week, 365 days per year to gather, develop, maintain, communicate and fuse all BMDS situational awareness data concerning the current Health and Status of the BMDS, maintaining operational and exercise configuration control of the BMDS architecture, reporting operational readiness, conducting pre-fielding and fielding asset coordination responsibilities, providing real time BMDS information to all BMDS stakeholders and providing crisis action planning and support during exercises and real world contingencies</p> <p>-Plan, organize, resource and manage BMD operations support functions to optimize mission performance</p> <p>-Maintain approved BMDS operational configuration and enable on-site developmental operations, sustainment, and operational activities in a Concurrent Test, Training and Operations (CTTO) environment</p> <p>-Precisely align BMDS components in accordance with the currently approved Operational or Test Configuration. This requires participation in the Integration Synchronization Group and the MDA Program Change Board, and real time management to ensure the BMDS is in the specific approved Operational Configuration</p> <p>-Serve as the MDA BMDS Asset Management office of primary responsibility for coordinating and providing integrated MDA development, maintenance and training inputs into the Asset Management Process. Planning and coordination includes long</p>			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>range planning (MDA Annual Plan), quarterly schedules, BMDS Operating Schedule (2-8 weeks of near term schedules), and Weekly Activity Message coordination and execution</p> <ul style="list-style-type: none"> -Monitor, collect, and analyze BMDS operational readiness data to communicate past and present BMDS operational readiness and improve future performance -Maintain BMDS Operational Baseline documentation and associated BMDS Operational Configuration documentation to include the BMDS Handbook and technical library -Maintain BMDS applicable configuration documents for elements and Wargames Support Center (WSC) -Ensure BMDS Watch Officer (BWO) and Warfighter have situational awareness of current and proposed BMDS Operational Baseline requirements -Implement BMDS Operational Readiness Reporting System (BORRS) Data for COCOMs -Monitor BMDS Readiness (Operations Capability/Protection Capability, Reliability, Availability, Maintainability, BMDS Operational Capability Assessment, Maintenance Data) -Man and operate the OSPT in support of COCOM contingencies, Wargames and Exercises -Continue to enhance Operations Support Center capabilities based on BMDS future capabilities -Continue improvement of situational awareness, technical reach-back and connectivity to MDA development, testing, and fielding organizations -Assist the Joint Functional Component Command for Integrated Missile Defense in planning and executing Warfighter Trial Periods -Continue streamlining BMDS scheduling/asset management process to support the warfighter -Continue improvements in overseeing the BMDS operational configuration and increase fidelity and technical detail in configuration specifications -Continue to coordinate and align BMDS scheduled maintenance to maximize availability -Continue integration of Capability Demonstration-like objectives into the Ground Test Campaign -Continue to update the BMDS Handbook and create and publish the BMDS Handbook for future BMDS capabilities -Continue quarterly BMDS System Operability Checks -Continue to improve the BMDS Operational Readiness Reporting System (BORRS) -Improve Operations Support Center and Asset Management Continuity of Operations capabilities -Integrate configuration management tool capabilities into the on-line Asset Management tools -Integrate situational awareness tool capabilities into the on-line Asset management tools -Continue to improve the MDA-wide BMDS Operational Reporting process -Provide strategic-level interfaces between MDA and the Military Services, the Joint Staff, and the Office of the Under Secretary of Defense for Policy (OSD (P)), with a focus on cross-Departmental initiatives (such as the transition of BMDS Elements/Components to the Services), and cross-Departmental Corporate Boards (such as the Missile Defense Executive Board) 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Maintain daily, strategic-level interfaces with the Military Services and Joint Staff, providing them with the critical information they require to plan for the delivery, fielding, and operation of BMDS capabilities -Provide direct support to the Director’s Action Group for MDA senior leadership projects -Support MDA Senior Leadership participation in the MDEB, the Joint Requirements Oversight Council, the Joint Capability Boards and other interdepartmental venues -Liaison with OSD Policy on affairs related to missile defense -Directly interface with the Services, Joint Staff and Combatant Command on missile defense policy issues -Ensure senior leadership is prepared for all external engagements (executive boards, testimony, Combatant Command visits, public engagements, etc) as relates to operational BMDS strategic planning and policy -Enable BMDS operational situational awareness and real-world crisis response to the leadership through the MDA/HQ Mission Operations Center -Provide MDA’s planner level coordination for Combatant Command, Joint Staff, and inter-agency staff actions -Support Component Command Tabletop Exercises and Experiments to facilitate the development of Regional Concepts of Operation and Operational Concepts development for Early Intercept concepts and other programs such as Nimble Fire 11 -Assist Warfighters to update the annual BMDS Prioritized Capabilities List to reflect changes in Component Command priorities for needed BMDS enhancements -Assist Strategic Command with its annual BMDS military Utility Assessment -Continue to work with the Program Offices and the Warfighter to establish Concepts of Operation for transitioning BMDS capabilities -Continue to prepare the MDA leadership to represent the Agency to the Missile Defense Executive Board on critical BMDS related topics/decisions -Support Combatant Commanders in execution of real-world operations/contingencies -Manage Warfighter Request for Analysis/Request for Information (RFA/RFI) process within MDA -Operate the BMDS Training and Education Center -Provide BMDS-Level Training and Education for the Joint Warfighters, Defense Officials and Services -Provide Training Transition support to the Services -Training by the BMDS Training & Education Center -Provide 130 courses (~2500 hours of instruction) to approximately 1600 students -Provide simulated missile injects over the live Satellite Theater Event System broadcast -Continue to operate the Joint BMDS Training and Education Center Campus -Continue to host Integrated Ballistic Missile Defense Training Working Groups -Develop Combatant Command training courses -Provide support for Component Command participants to attend numerous missile defense exercises and wargames 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Support travel requirements of the Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provide Contractor Technical Services Support 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, working with the MDA Deputy for International Programs and the Combatant Commanders -Work with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Manage MDA/COCOM interfaces -Provide support to the development and update of BMD portions of COCOM OPLANS and CONPLANS -Provide support to the BMDS Capability Delivery process and transition and transfer to the services -Support USSTRATCOM with development of the annual BMDS Military Utility Assessment -Defense Efficiency - Civilian Staffing Reduction. As part of the Department of Defense reform agenda, eliminates civilian full-time equivalent positions to maintain, with limited exceptions, civilian staffing at the FY 2010 level (FY 2012 baseline: \$-.773 million) 			
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FY 2013 Plans:

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Man and operate MDA's Operations Support Center (OSC) 24 hours per day, 7 days per week, 365 days per year to gather, develop, maintain, communicate and fuse all BMDS situational awareness data concerning the current Health and Status of the BMDS, maintaining operational and exercise configuration control of the BMDS architecture, reporting operational readiness, conducting pre-fielding and fielding asset coordination responsibilities, providing real time BMDS information to all BMDS stakeholders and providing crisis action planning and support during exercises and real world contingencies -Man and operate the MDA HQ Mission Operations Center (MOC) at MDA HQ 5 days per week to provide situational awareness and understanding, and operational and developmental support to the MDA HQ element located in the NCR and serve as a fusion center for MDA/Warfighter Strategic Integration Directorate efforts in support of OSD, Joint Staff and Service requests and tasking response -Plan, organize, resource and manage BMD operations support functions to optimize mission performance -Maintain approved BMDS operational configuration and enable on-site developmental operations, sustainment, and operational activities in a Concurrent Test, Training and Operations (CTTO) environment -Precisely align BMDS components in accordance with the currently approved Operational or Test Configuration. This requires participation in the Integration Synchronization Group and the MDA Program Change Board, and real time management to ensure the BMDS is in the specific approved Operational Configuration -Serve as the MDA BMDS Asset Management office of primary responsibility for coordinating and providing integrated MDA development, maintenance and training inputs into the Asset Management Process. Planning and coordination includes long range planning (MDA Annual Plan), quarterly schedules, BMDS Operating Schedule (2-8 weeks of near term schedules), and Weekly Activity Message coordination and execution -Develop daily updates to the Combat Capabilities Assessment Schedule (CCAS) supporting 14th Air Force and the Combined Operating Schedules for EUCOM and CENTCOM -Monitor, collect, and analyze BMDS operational readiness data to communicate past and present BMDS operational readiness and improve future performance -Maintain BMDS Operational Baseline documentation and associated BMDS Operational Configuration documentation to include the BMDS Handbook and technical library -Maintain BMDS applicable configuration documents for elements and Wargames Support Center (WSC) -Ensure BMDS Watch Officer (BWO) and Warfighter have situational awareness of current and proposed BMDS Operational Baseline requirements -Implement BMDS Operational Readiness Reporting System (BORRS) Data for COCOMs -Monitor BMDS Readiness (Operations Capability/Protection Capability, Reliability, Availability, Maintainability, BMDS Operational Capability Assessment, Maintenance Data) -Man and operate the Crisis Planning Team (CPT) in support of COCOM contingencies, Exercises -Continue to enhance Operations Support Center (OSC) capabilities based on BMDS future capabilities 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Continue improvement of situational awareness, technical reach-back and connectivity to MDA development, testing, and fielding organizations -Assist the Joint Functional Component Command for Integrated Missile Defense in planning and executing Warfighter Trial Periods -Continue streamlining BMDS scheduling/asset management process to support the warfighter -Continue improvements in overseeing the BMDS operational configuration and increase fidelity and technical detail in configuration specifications -Continue to coordinate and align BMDS scheduled maintenance to maximize availability -Continue integration of Capability Demonstration-like objectives into the Ground Test Campaign -Continue to update the BMDS Handbook and create and publish the BMDS Handbook for future BMDS capabilities -Continue quarterly BMDS System Operability Checks -Continue to improve the BMDS Operational Readiness Reporting System (BORRS) -Improve Operations Support Center and Asset Management Continuity of Operations capabilities -Integrate configuration management tool capabilities into the on-line asset management tools -Integrate situational awareness tool capabilities into the on-line asset management tools -Continue to improve the MDA-wide BMDS Operational Reporting process -Continue to provide the BMDS Update Briefing to MDA Leadership at Headquarters Command Center -Continue to provide direct support to MDA Leadership at Headquarters Command Center -Continue to perform Battle Staff and Crisis Action Team operations for MDA Headquarters Command Center at Fort Belvoir, VA -Continue to provide BMDS operational situational awareness and real-world crisis response for MDA Headquarters Command Center at Fort Belvoir, VA -Continue to coordinate MDA/Warfighter Strategic Integration Directorate efforts in support of OSD, Joint Staff and Service requests and tasking response -Provide strategic-level interfaces between MDA and the Military Services, the Joint Staff (J39), and the Office of the Under Secretary of Defense for Policy (OSD (P)), with a focus on cross-Departmental initiatives (such as the transition of BMDS capabilities to the Services), as well as cross-COCOM forums Operations Forces Standing Committee (OSFC) Departmental Corporate Boards (such as the Missile Defense Executive Board) -Maintain daily, strategic-level interfaces with the Military Services and Joint Staff, providing them with the critical information they require to plan for the delivery, fielding, and operation of BMDS capabilities -Provide direct support to the Director's Action Group for MDA senior leadership projects -Support MDA Senior Leadership participation in the OFSC, MDEB, the Joint Requirements Oversight Council, the Joint Capability Boards and other interdepartmental venues -Liaison with OSD Policy on affairs related to missile defense -Directly interface with the Services, Joint Staff and Combatant Command on missile defense policy issues 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Ensure senior leadership is prepared for all external engagements (executive boards, testimony, Combatant Command visits, public engagements, etc) as relates to operational BMDS strategic planning and policy -Enable BMDS operational situational awareness and real-world crisis response to the leadership through the MDA/HQ Mission Operations Center -Provide MDA`s planner level coordination for Combatant Command, Joint Staff, and inter-agency staff actions -Support Component Command Tabletop Exercises and Experiments to facilitate the development of Regional Concepts of Operation and Operational Concepts development for Early Intercept concepts and other programs such as Nimble Fire 11 -Assist Warfighters to update the annual BMDS Prioritized Capabilities List to reflect changes in Component Command priorities for needed BMDS enhancements -Assist Strategic Command with its annual BMDS Military Utility Assessment -Continue to work with the Program Offices and the Warfighter to establish Concepts of Operation for transitioning BMDS capabilities -Continue to prepare the MDA leadership to represent the Agency to the OFSC Missile Defense Executive Board on critical BMDS related topics/decisions -Support Combatant Commanders in execution of real-world operations/contingencies -Manage Warfighter Request for Analysis/Request for Information (RFA/RFI) process within MDA -Operate the BMDS Joint Training and Education Center -Provide BMDS-Level Training and Education for the Joint Warfighters, Defense Officials and Services -Provide Training Transition support to the Services -Training by the BMDS Training & Education Center -Develop Asset Management training courses -Develop Combatant Command training courses -Operate the Joint BMDS Training and Education Center -Provides BMDS-Level Training and Education for the MDA personnel, Joint Warfighters, Department of Defense Officials, Services and selected US Allies (over 2,000 students per year) -Provide focal point for US Government personnel from the COCOMs and components to obtain BMDS information, education, and training (over 170 training and education events per year) -Provide a BMDS 101 to foster greater understanding of missile defense among a general audience -Provide COCOM Staffs with familiarization of the BMDS including capabilities and limitations -Provide DOD and COCOM executive personnel with familiarization of the BMDS including capabilities and limitations. -Provide COCOM Staffs with planning and employment in-depth training in the global ballistic missile defense planning processes, day-to-day operations, and current/future systems and issues 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Provide missile defense space warning tool (MDST) support for exercises and training for Combatant Commands and Services (up to 24/7/365) -Provides simulated missile injects over the operational IBS and Satellite Theater Event System broadcast by using a constructive simulation, which models the detection, tracking, and reporting of ballistic missile launches using space-based Infrared (IR) sensors -Provide support for Component Command participants to attend numerous missile defense exercises and wargames -Support travel requirements to the Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provide Contractor Technical Support Services as required to enable the Warfighter to define, test, deploy and employ new missile defense capabilities -Train to maintain proficiency with current capabilities -Provide feedback and support involvement in MDA's BMDS development process -Support to the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Develop Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded -Provide 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process -Annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements -Conduct Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development -Conduct Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use -Conduct BMDS Table Top exercises with low fidelity demonstrations for our friends and allies for International Programs and the Combatant Commanders -Work with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Manage 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 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Support USSTRATCOM with development of the annual BMDS Military Utility Assessment</p> <p>-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 USD/AT&L policies</p> <p>-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</p> <p>-Provide BORRS data to Operational Test Agency in support of their Military Utility Assessments</p> <p>AIR MISSILE DEFENSE 14 EUCOM Exercise 1 - 2014</p>			
<p>Title: BMDS Materiel Readiness</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Performed life cycle Ballistic Missile Defense System (BMDS) readiness policy, planning, analysis and assessment in support of the Materiel (M) function of the Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF); -Executed Logistics Functional Manager duties including training, mentoring and leading the logistics workforce -Executed personnel actions on behalf of the Logistics Functional Leads, to include updating the manpower database, recruit new hires, conduct personnel reviews and pay pools -Provided one full time MDA Engineering Support Services (MiDAESS) integrator -Conducted Quarterly Readiness Integrated Product Team (IPT) meetings -Established Item Unique Identification (IUID) Policy and established IUID IPT to monitor compliance -Executed Overarching Memorandum of Agreement governing Logistics Personnel -Implemented BMDS Readiness Directive and monitored compliance -Refined and implemented the Readiness Surge Team Support process -Developed, refined and implemented MDA Transportation Cell -Developed, refined and implemented MDA Property Management Office -Developed and conducted MDA Logistics Conference <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Perform life cycle Ballistic Missile Defense System (BMDS) readiness policy, planning, analysis and assessment in support of the Materiel (M) function of the Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF) -Execute Logistics Functional Manager duties, including training, mentoring and leading the logistics workforce -Execute personnel actions on behalf of the Logistics Functional Leads, to include updating the manpower database, recruit new hires, conduct personnel reviews and pay pools -Provide one full time MDA Engineering Support Services Integrator 	<p>1.670</p> <p>0</p>	<p>1.088</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conduct Quarterly Readiness Integrated Product Team (IPT) meeting -Continue conduct of Item Unique Identification (IUID) IPT to monitor IUID IPT policy compliance -Execute overarching MOA governing Logistics Personnel -Implement BMDS Readiness Directive and monitor compliance -Refine and implement the Readiness Surge Team Support process -Develop, refine and implement MDA Transportation Cell -Develop, refine and implement MDA Property Management Office -Develop and conduct MDA Logistics Conference <p>FY 2013 Plans: Beginning FY 2013 BMDS Materiel Readiness transfers to various programs (Budget MD40) to better align agency level functions as a part of program wide support activities.</p>			
Accomplishments/Planned Programs Subtotals	52.986	39.484	52.765

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603891C: <i>Special Programs - MDA</i>	228.450	296.145	272.387		272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	10.569	7.940	6.912		6.912	6.576	6.610	7.219	7.371	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	28.472	28.908	34.855		34.855	25.473	30.838	31.482	32.798	Continuing	Continuing

D. Acquisition Strategy

The Joint National Integration Center Research and Development Contract is the major performing integrated contract.

The Warfighter Strategic Integration Directorate and the Ground Test Execution Directorate will continue to enable the effective delivery of BMDS capabilities to the Warfighter. The Warfighter Strategic Integration Directorate will ensure Warfighter 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	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 Civilian Salaries/ Operations Sustainment	Allot	MDA:Colorado Springs, Huntsville, NCR	3.769	2.362	Oct 2011	1.989	Oct 2012	-		1.989	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises Support to MDA Leadership A&AS	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	3.271	1.235	Oct 2011	3.658	Nov 2012	-		3.658	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises Combatant Commanders (COCOM) Support A&AS	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	3.950	1.223	Oct 2011	1.212	Oct 2012	-		1.212	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises Combatant Commanders (COCOM) Support	C/CPAF	JRDC/MIPR:Colorado Springs, Huntsville, NCR	56.099	12.226	Jan 2012	20.547	Oct 2012	-		20.547	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises BMDS Support A&AS	C/CPFF	MiDAESS:Colorado Springs	0.235	0.173	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises BMDS Support	MIPR	Multiple:Various	3.210	1.171	Dec 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Warfighter Operational Support / Wargames and Exercises BMDS Studies/ Analysis	C/FFP	MDIOC/Northrop Grumman:Colorado Springs	-	3.598	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises Government Travel & Training	Allot	MDA:Colorado Springs, Huntsville, NCR	-	-		0.427	Oct 2012	-		0.427	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises Wargame Support	C/CPAF	JRDC/MIPR:Colorado Springs	-	-		4.308	Oct 2012	-		4.308	Continuing	Continuing	Continuing
Warfighter Strategic Integration Civilian Salaries/ Operations Sustainment	Allot	MDA:Colorado Springs/ Huntsville, NCR	7.852	3.122	Oct 2011	3.785	Oct 2012	-		3.785	Continuing	Continuing	Continuing
Warfighter Strategic Integration Support to MDA Leadership A&AS	C/CPFF	MiDAESS:Colorado Springs/Huntsville/NCR/ AK/CA	8.165	4.277	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Strategic Integration Support to MDA Leadership	MIPR	Multiple:NCR/Colorado Springs	4.594	1.540	Dec 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Strategic Integration Combatant Commanders (COCOM) A&AS	C/CPFF	MiDAESS:Colorado Springs/NCR/Huntsville	3.273	0.933	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Strategic Integration Commanders (COCOM) Support	C/CPAF	MDIOC/Northrop Grumman:Colorado Springs	15.984	4.607	Jan 2012	-		-		-	Continuing	Continuing	Continuing
Warfighter Strategic Integration Armed Forces (Services) Support	C/CPFF	MiDAESS:Multiple	1.629	0.857	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Strategic Integration BMDS Support A&AS	C/CPFF	MiDAESS:Colorado Springs/Huntsville/NCR	1.169	0.536	Oct 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Warfighter Strategic Integration BMDS Support	C/FFP	MDIOC/Northrop Grumman:Colorado Springs	4.985	0.536	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Warfighter Strategic Integration Travel and Training	Allot	MDA:Colorado Springs, Huntsville	-	-		0.255	Oct 2012	-		0.255	Continuing	Continuing	Continuing
Warfighter Strategic Integration Current Operations	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	-	-		2.200	Oct 2012	-		2.200	Continuing	Continuing	Continuing
Warfighter Strategic Integration Joint Staff and Service Interface	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	-	-		2.200	Oct 2012	-		2.200	Continuing	Continuing	Continuing
Warfighter Strategic Integration Training and Education to the Warfighter	C/CPFF	MiDAESS:Colorado Springs	-	-		0.700	Oct 2012	-		0.700	Continuing	Continuing	Continuing
Warfighter Strategic Integration Administrative HR	C/CPFF	MiDAESS:Colorado Springs NCR	-	-		0.650	Oct 2012	-		0.650	Continuing	Continuing	Continuing
Warfighter Strategic Integration Joint Staff and Service Interface	C/CPAF	JRDC:Colorado Springs, NCR	-	-		0.500	Oct 2012	-		0.500	Continuing	Continuing	Continuing
Warfighter Strategic Integration Current Operations	C/CPAF	JRDC:Colorado Springs, NCR	-	-		3.274	Nov 2012	-		3.274	Continuing	Continuing	Continuing
Warfighter Strategic Integration BMDS Training and Education/MDST	C/CPAF	JRDC:Colorado Springs	-	-		6.500	Nov 2012	-		6.500	Continuing	Continuing	Continuing
Warfighter Strategic Integration Asset Management Server Maintenance	C/CPAF	JRDC:Colorado Springs, Huntsville	-	-		0.560	Nov 2012	-		0.560	Continuing	Continuing	Continuing
BMDS Materiel Readiness Civilian Pay	Allot	MDA:Colorado Springs, Huntsville, NCR	-	1.057	Oct 2011	-		-		-	Continuing	Continuing	Continuing
BMDS Materiel Readiness Travel and Training	Allot	MDA:Colorado Springs, Huntsville, NCR	0.361	0.031	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Subtotal			118.546	39.484		52.765		-		52.765			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
FY12 increase in Civilian Pay due to in-sourcing of personnel.

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

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals		118.546	39.484			52.765		-		52.765	

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 MISSILE DEFENSE 11-01 CENTCOM Exercise 2 - 2011		▲																										
AIR MISSILE DEFENSE 11-01 CENTCOM Exercise 4 - 2011				▲																								
AIR MISSILE DEFENSE 12 CENTCOM Exercise 1 - 2012					▲																							
AIR MISSILE DEFENSE 12 CENTCOM Exercise 2 - 2012						△																						
AIR MISSILE DEFENSE 12 CENTCOM Exercise 3 - 2012							△																					
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 MISSILE DEFENSE 14 CENTCOM Exercise 1 - 2014													△															
AIR MISSILE DEFENSE 14 CENTCOM Exercise 2 - 2014														△														
AIR MISSILE DEFENSE 14 CENTCOM Exercise 3 - 2014															△													
AIR MISSILE DEFENSE 14 CENTCOM Exercise 4 - 2014																△												
AIR MISSILE DEFENSE 14 EUCOM Exercise 1 - 2014														△														
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 WARGAME Series Event -2012																												
CONGRESSIONAL WARGAME - 2012							△																					
CONGRESSIONAL WARGAME - 2013											△																	
CONGRESSIONAL WARGAME - 2014																												
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EAGLE RESOLVE 12 Exercise Event - 2012																												
EAGLE RESOLVE 13 Exercise Event - 2013																												
EAGLE RESOLVE 14 Exercise Event - 2014																												
EAGLE RESOLVE 15 Exercise Event - 2015																												
EAGLE RESOLVE 16 Exercise Event - 2016																												
GLOBAL LIGHTNING 11 Exercise Event - 2011																												
GLOBAL LIGHTNING 12 Exercise Event - 2012																												
GLOBAL LIGHTNING 12 Exercise Planning - 2012																												
GLOBAL LIGHTNING 13 Exercise Event - 2013																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 13 Exercise Planning - 2013																												
GLOBAL LIGHTNING 14 Exercise Event - 2014																												
GLOBAL LIGHTNING 14 Exercise Planning - 2014																												
GLOBAL LIGHTNING 15 Exercise Event - 2015																												
GLOBAL LIGHTNING 15 Exercise Planning - 2015																												
GLOBAL LIGHTNING 16 Exercise Event - 2016																												
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GLOBAL THUNDER 11-2 Exercise Event - 2011			▲																									
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GLOBAL THUNDER 16 Exercise Event - 2016																												
GLOBAL THUNDER 16 Exercise Planning - 2015																												
GLOBAL THUNDER 17 Exercise Planning - 2016																												
INTERNATIONAL SYMPOSIUM ON INTEGRATED AIR MISSILE DEFENSE SYMPOSIUM 2Q FY 2011																												
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2011	▲																											
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2012																												
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2013																												
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2014																												
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2015																												
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2016																												
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2011	▲																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2012				▲																								
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2013								△																				
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2014												△																
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2015																△												
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2016																				△								
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2011	▲																											
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2012								△																				
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2013												△																
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2014																△												
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2015																				△								
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2016																								△				
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2011	▲																											
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2012								△																				
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2013												△																
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2014																△												
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2015																				△								
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2016																								△				
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2011		▲																										

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2012							△																					
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2013											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2014														△														
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2015																△												
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2016																							△					
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2011			▲																									
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2012							△																					
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2013											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2014														△														
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2015																△												
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2016																							△					
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2011				▲																								
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2012							△																					
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2013											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2014														△														
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2015																△												
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2016																							△					
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2012							△																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2013												△																
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2014															△													
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2015																				△								
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2016																								△				
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2012						▲																						
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2013											△																	
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2014												△																
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2015																△												
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2016																				△								
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2012						▲																						
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2013											△																	
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2014																△												
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2015																				△								
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2016																								△				
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2012							△																					
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2013											△																	
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2014																△												
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2015																				△								

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2014															△													
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2015																			△									
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2016																										△		
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2011				▲																								
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2012							△																					
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2013												△																
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2014															△													
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2015																				△								
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2016																										△		
JOINT PROJECT OPTIC WINDMILL 2013 Event - 2013													△															
JOINT PROJECT OPTIC WINDMILL 2013 Planning - 2012							△																					
JOINT PROJECT OPTIC WINDMILL 2015 Event - 2015																												
JOINT PROJECT OPTIC WINDMILL 2015 Planning - 2014																												
JOINT PROJECT OPTIC WINDMILL 2017 Planning - 2016																												
KEEN EDGE 12 Exercise Event - 2012							△																					
KEEN EDGE 12 Exercise Planning - 2011				▲																								
KEEN EDGE 14 Exercise Event - 2014															△													
KEEN EDGE 14 Exercise Planning - 2013												△																
KEEN EDGE 16 Exercise Event - 2015																												
KEEN EDGE 16 Exercise Event - 2016																												
KEY RESOLVE 11 Exercise Planning - 2010	▲																											
KEY RESOLVE 12 Exercise Event - 2012							△																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
KEY RESOLVE 12 Exercise Planning - 2011			▲																									
KEY RESOLVE 13 Exercise Event 2013											△																	
KEY RESOLVE 13 Exercise Planning - 2012							△																					
KEY RESOLVE 14 Exercise Event - 2014													△															
KEY RESOLVE 14 Exercise Planning - 2013															△													
KEY RESOLVE 15 Exercise Event - 2015																												
KEY RESOLVE 15 Exercise Planning - 2014																												
KEY RESOLVE 16 Exercise Event - 2016																												
KEY RESOLVE 16 Exercise Planning - 2015																												
KEY RESOLVE 17 Exercise Planning - 2016																												
KEY RESOLVE Exercise Series-2Q 2015																												
MISSILE DEFENSE CONFERENCE-2Q 2012																												
MISSILE DEFENSE CONFERENCE-2Q 2013																												
MISSILE DEFENSE CONFERENCE-2Q 2014																												
MISSILE DEFENSE CONFERENCE-2Q 2015																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2011																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2012																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016																												
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2011																												
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2012																												
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013																												
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015																			△										
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016																					△								
NIMBLE TITAN 12 Wargame Event - 2012							△																						
NIMBLE TITAN 14 Wargame Event - 2014													△																
NIMBLE TITAN 16 Wargame Event - 2016																													
SHARP SENTRY Table Top Exercise 1 Event - 2011		▲																											
SHARP SENTRY Table Top Exercise 2 Event - 2011		▲																											
SHARP SENTRY Table Top Exercise 3 Event - 2011		▲																											
SHARP SENTRY Table Top Exercise 7 Event - 2011				▲																									
TALISMAN SABRE Event - 2013												△																	
TALISMAN SABRE Event - 2015																				△									
TALISMAN SABRE Planning - 2013												△																	
TALISMAN SABRE Planning - 2015																				△									
TERMINAL FURY 11 Exercise Event - 2011			▲																										
TERMINAL FURY 12 Exercise Event - 2012																													
TERMINAL FURY 12 Exercise Planning - 2011				▲																									
TERMINAL FURY 13 Exercise Event - 2013																													
TERMINAL FURY 13 Exercise Planning - 2013													△																
TERMINAL FURY 14 Exercise Event - 2014																													
TERMINAL FURY 14 Exercise Planning - 2014																													
TERMINAL FURY 15 Exercise Event - 2015																													
TERMINAL FURY 15 Exercise Planning - 2015																													
TERMINAL FURY 16 Exercise Event - 2016																													
TERMINAL FURY 16 Exercise Planning - 2016																													
ULCHI FREEDOM GUARD 11 Event - 2011				▲																									
ULCHI FREEDOM GUARD 11 Planning - 2011	▲																												
ULCHI FREEDOM GUARD 12 Event - 2012																													
ULCHI FREEDOM GUARD 12 Planning - 2012					▲																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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																												
ULCHI FREEDOM GUARD 13 Planning - 2013											△																	
ULCHI FREEDOM GUARD 14 Event - 2014																												
ULCHI FREEDOM GUARD 14 Planning - 2013																												
ULCHI FREEDOM GUARD 15 Event - 2015																												
ULCHI FREEDOM GUARD 15 Planning - 2014																												
ULCHI FREEDOM GUARD 16 Event - 2016																												
ULCHI FREEDOM GUARD 16 Planning - 2015																												
VIGILANT SHIELD 11-1 Exercise Event - 2011	▲																											
VIGILANT SHIELD 11-2 Exercise Event - 2012					▲																							
VIGILANT SHIELD 13 Exercise Event - 2013																												
VIGILANT SHIELD 13 Exercise Planning - 2012																												
VIGILANT SHIELD 14 Exercise Event - 2015																												
VIGILANT SHIELD 14 Exercise Planning - 2013																												
VIGILANT SHIELD 15 Exercise Event - 2015																												
VIGILANT SHIELD 15 Exercise Planning - 2014																												
VIGILANT SHIELD 16 Exercise Event - 2016																												
VIGILANT SHIELD 16 Exercise Planning - 2015																												
VIGILANT SHIELD 17 Exercise Planning - 2016																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AIR MISSILE DEFENSE 11-01 CENTCOM Exercise 2 - 2011	2	2011	2	2011
AIR MISSILE DEFENSE 11-01 CENTCOM Exercise 4 - 2011	4	2011	4	2011
AIR MISSILE DEFENSE 12 CENTCOM Exercise 1 - 2012	1	2012	1	2012
AIR MISSILE DEFENSE 12 CENTCOM Exercise 2 - 2012	2	2012	2	2012
AIR MISSILE DEFENSE 12 CENTCOM Exercise 3 - 2012	3	2012	3	2012
AIR MISSILE DEFENSE 12 CENTCOM Exercise 4 - 2012	4	2012	4	2012
AIR MISSILE DEFENSE 12 EUCOM Exercise 1 - 2012	1	2012	1	2012
AIR MISSILE DEFENSE 12 EUCOM Exercise 2 - 2012	2	2012	2	2012
AIR MISSILE DEFENSE 12 EUCOM Exercise 3 - 2012	3	2012	3	2012
AIR MISSILE DEFENSE 12 EUCOM Exercise 4 - 2012	4	2012	4	2012
AIR MISSILE DEFENSE 13 CENTCOM Exercise 1 - 2013	1	2013	1	2013
AIR MISSILE DEFENSE 13 CENTCOM Exercise 2 - 2013	2	2013	2	2013
AIR MISSILE DEFENSE 13 CENTCOM Exercise 3 - 2013	3	2013	3	2013
AIR MISSILE DEFENSE 13 CENTCOM Exercise 4 - 2013	4	2013	4	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 1 - 2013	1	2013	1	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 2 - 2013	2	2013	2	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 3 - 2013	3	2013	3	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 4 - 2013	4	2013	4	2013
AIR MISSILE DEFENSE 14 CENTCOM Exercise 1 - 2014	1	2014	1	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 2 - 2014	2	2014	2	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 3 - 2014	3	2014	3	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 4 - 2014	4	2014	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
AIR MISSILE DEFENSE 14 EUCOM Exercise 1 - 2014	1	2014	1	2014
AIR MISSILE DEFENSE 14 EUCOM Exercise 2 - 2014	2	2014	2	2014
AIR MISSILE DEFENSE 14 EUCOM Exercise 3 - 2014	3	2014	3	2014
AIR MISSILE DEFENSE 14 EUCOM Exercise 4 - 2014	4	2014	4	2014
AIR MISSILE DEFENSE 15 CENCOM Exercise 2 - 2015	2	2015	2	2015
AIR MISSILE DEFENSE 15 CENTCOM Exercise 1 - 2015	1	2015	1	2015
AIR MISSILE DEFENSE 15 CENTCOM Exercise 3 - 2015	3	2015	3	2015
AIR MISSILE DEFENSE 15 CENTCOM Exercise 4 - 2015	4	2015	4	2015
AIR MISSILE DEFENSE 15 EUCOM Exercise 1 - 2015	1	2015	1	2015
AIR MISSILE DEFENSE 15 EUCOM Exercise 2 - 2015	2	2015	2	2015
AIR MISSILE DEFENSE 15 EUCOM Exercise 3 - 2015	3	2015	3	2015
AIR MISSILE DEFENSE 15 EUCOM Exercise 4 - 2015	4	2015	4	2015
AIR MISSILE DEFENSE 16 CENTCOM Exercise 1 - 2016	1	2016	1	2016
AIR MISSILE DEFENSE 16 CENTCOM Exercise 2 - 2016	2	2016	2	2016
AIR MISSILE DEFENSE 16 CENTCOM Exercise 3 - 2016	3	2016	3	2016
AIR MISSILE DEFENSE 16 CENTCOM Exercise 4 - 2016	4	2016	4	2016
AIR MISSILE DEFENSE 16 EUCOM Exercise 1 - 2016	1	2016	1	2016
AIR MISSILE DEFENSE 16 EUCOM Exercise 2 - 2016	2	2016	2	2016
AIR MISSILE DEFENSE 16 EUCOM Exercise 3 - 2016	3	2016	3	2016
AIR MISSILE DEFENSE 16 EUCOM Exercise 4 - 2016	4	2016	4	2016
ARMY CENTRAL COMMAND INTEGRATED AIR MISSILE DEFENSE SYMP - 2012	3	2012	3	2012
ARMY CENTRAL COMMAND INTEGRATED AIR MISSILE DEFENSE SYMP - 2013	3	2013	3	2013
ARMY CENTRAL COMMAND INTEGRATED AIR MISSILE DEFENSE SYMP - 2014	3	2014	3	2014
ARMY CENTRAL COMMAND INTEGRATED AIR MISSILE DEFENSE SYMP - 2015	3	2015	3	2015
ARMY CENTRAL COMMAND INTEGRATED AIR MISSILE DEFENSE SYMP - 2016	3	2016	3	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
ASSURED RESPONSE 04X Exercise Event - 2011	1	2011	1	2011
ASSURED RESPONSE Exercise Event - 2011	4	2011	4	2011
ASSURED RESPONSE Exercise Planning - 2011	2	2011	2	2011
ASSURED RESPONSE Exercise Series - 2012	4	2012	4	2012
ASSURED RESPONSE Exercise Series - 2013	4	2013	4	2013
ASSURED RESPONSE Exercise Series - 2014	4	2014	4	2014
ASSURED RESPONSE Exercise Series - 2015	4	2015	4	2015
ASSURED RESPONSE Exercise Series - 2016	4	2016	4	2016
BMDS WARGAME 2014 Event - 2014	3	2014	3	2014
BMDS WARGAME 2014 Planning - 2014	2	2014	2	2014
BMDS WARGAME 2016 Event - 2016	3	2016	3	2016
BMDS WARGAME 2016 Planning - 2016	2	2016	2	2016
BMDS WARGAME Series Event -2011	1	2011	1	2011
BMDS WARGAME Series Event -2012	3	2012	3	2012
CONGRESSIONAL WARGAME - 2012	2	2012	2	2012
CONGRESSIONAL WARGAME - 2013	2	2013	2	2013
CONGRESSIONAL WARGAME - 2014	2	2014	2	2014
CONGRESSIONAL WARGAME - 2015	2	2015	2	2015
CONSOLIDATED PLANNING Exercise Event - 2012	4	2012	4	2012
CONSOLIDATED PLANNING Exercise Event - 2013	4	2013	4	2013
CONSOLIDATED PLANNING Exercise Event - 2014	4	2014	4	2014
CONSOLIDATED PLANNING Exercise Event - 2015	4	2015	4	2015
CONSOLIDATED PLANNING Exercise Event - 2016	4	2016	4	2016
CONSOLIDATED PLANNING Exercise Planning - 2012	2	2012	2	2012
CONSOLIDATED PLANNING Exercise Planning - 2013	2	2013	2	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
CONSOLIDATED PLANNING Exercise Planning - 2014	2	2014	2	2014
CONSOLIDATED PLANNING Exercise Planning - 2015	2	2015	2	2015
CONSOLIDATED PLANNING Exercise Planning - 2016	2	2016	2	2016
EAGLE RESOLVE 11 Exercise Event - 2011	3	2011	3	2011
EAGLE RESOLVE 12 Exercise Event - 2012	3	2012	3	2012
EAGLE RESOLVE 13 Exercise Event - 2013	3	2013	3	2013
EAGLE RESOLVE 14 Exercise Event - 2014	3	2014	3	2014
EAGLE RESOLVE 15 Exercise Event - 2015	3	2015	3	2015
EAGLE RESOLVE 16 Exercise Event - 2016	3	2016	3	2016
GLOBAL LIGHTNING 11 Exercise Event - 2011	3	2011	3	2011
GLOBAL LIGHTNING 12 Exercise Event - 2012	3	2012	3	2012
GLOBAL LIGHTNING 12 Exercise Planning - 2012	2	2012	2	2012
GLOBAL LIGHTNING 13 Exercise Event - 2013	3	2013	3	2013
GLOBAL LIGHTNING 13 Exercise Planning - 2013	2	2013	2	2013
GLOBAL LIGHTNING 14 Exercise Event - 2014	3	2014	3	2014
GLOBAL LIGHTNING 14 Exercise Planning - 2014	2	2014	2	2014
GLOBAL LIGHTNING 15 Exercise Event - 2015	3	2015	3	2015
GLOBAL LIGHTNING 15 Exercise Planning - 2015	2	2015	2	2015
GLOBAL LIGHTNING 16 Exercise Event - 2016	3	2016	3	2016
GLOBAL LIGHTNING 16 Exercise Planning - 2016	2	2016	2	2016
GLOBAL THUNDER 11-1 Exercise Event - 2011	1	2011	1	2011
GLOBAL THUNDER 11-2 Exercise Event - 2011	3	2011	3	2011
GLOBAL THUNDER 13 Event - 2013	1	2013	1	2013
GLOBAL THUNDER 13 Planning - 2012	3	2012	3	2012
GLOBAL THUNDER 14 Exercise Event - 2014	1	2014	1	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GLOBAL THUNDER 14 Exercise Event - 2015	1	2015	1	2015
GLOBAL THUNDER 14 Exercise Planning - 2013	3	2013	3	2013
GLOBAL THUNDER 15 Exercise Planning - 2014	3	2014	3	2014
GLOBAL THUNDER 16 Exercise Event - 2016	1	2016	1	2016
GLOBAL THUNDER 16 Exercise Planning - 2015	3	2015	3	2015
GLOBAL THUNDER 17 Exercise Planning - 2016	3	2016	3	2016
INTERNATIONAL SYMPOSIUM ON INTEGRATED AIR MISSILE DEFENSE SYMPOSIUM 2Q FY 2011	2	2011	2	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2011	1	2011	1	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2012	1	2012	1	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2013	1	2013	1	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2014	1	2014	1	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2015	1	2015	1	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2016	1	2016	1	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2011	1	2011	1	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2012	1	2012	1	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2013	1	2013	1	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2014	1	2014	1	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2015	1	2015	1	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2016	1	2016	1	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2011	2	2011	2	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2012	2	2012	2	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2013	2	2013	2	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2014	2	2014	2	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2015	2	2015	2	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2016	2	2016	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2011	2	2011	2	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2012	2	2012	2	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2013	2	2013	2	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2014	2	2014	2	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2015	2	2015	2	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2016	2	2016	2	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2011	3	2011	3	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2012	3	2012	3	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2013	3	2013	3	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2014	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2015	3	2015	3	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2016	3	2016	3	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2011	3	2011	3	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2012	3	2012	3	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2013	3	2013	3	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2014	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2015	3	2015	3	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2016	3	2016	3	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2011	4	2011	4	2011
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2012	4	2012	4	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2013	4	2013	4	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2014	4	2014	4	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2015	4	2015	4	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2016	4	2016	4	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2012	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2013	4	2013	4	2013
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2014	4	2014	4	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2015	4	2015	4	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2016	4	2016	4	2016
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2012	1	2012	1	2012
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2013	1	2013	1	2013
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2014	1	2014	1	2014
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2015	1	2015	1	2015
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2016	1	2016	1	2016
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2012	1	2012	1	2012
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2013	1	2013	1	2013
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2014	1	2014	1	2014
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2015	1	2015	1	2015
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2016	1	2016	1	2016
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2012	2	2012	2	2012
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2013	2	2013	2	2013
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2014	2	2014	2	2014
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2015	2	2015	2	2015
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2016	2	2016	2	2016
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2012	2	2012	2	2012
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2013	2	2013	2	2013
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2014	2	2014	2	2014
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2015	2	2015	2	2015
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2016	2	2016	2	2016
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2012	3	2012	3	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2013	1	2013	1	2013
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2014	3	2014	3	2014
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2015	3	2015	3	2015
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2016	3	2016	3	2016
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2012	3	2012	3	2012
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2013	3	2013	3	2013
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2014	3	2014	3	2014
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2015	3	2015	3	2015
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2016	3	2016	3	2016
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2012	4	2012	4	2012
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2013	4	2013	4	2013
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2014	4	2014	4	2014
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2015	4	2015	4	2015
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2016	4	2016	4	2016
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2011	4	2011	4	2011
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2012	4	2012	4	2012
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2013	4	2013	4	2013
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2014	4	2014	4	2014
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2015	4	2015	4	2015
JOINT AIR DEFENSE EUCOM Exercise Event 8 - 2016	4	2016	4	2016
JOINT PROJECT OPTIC WINDMILL 2013 Event - 2013	4	2013	4	2013
JOINT PROJECT OPTIC WINDMILL 2013 Planning - 2012	2	2012	2	2012
JOINT PROJECT OPTIC WINDMILL 2015 Event - 2015	4	2015	4	2015
JOINT PROJECT OPTIC WINDMILL 2015 Planning - 2014	2	2014	2	2014
JOINT PROJECT OPTIC WINDMILL 2017 Planning - 2016	2	2016	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
KEEN EDGE 12 Exercise Event - 2012	2	2012	2	2012
KEEN EDGE 12 Exercise Planning - 2011	3	2011	3	2011
KEEN EDGE 14 Exercise Event - 2014	2	2014	2	2014
KEEN EDGE 14 Exercise Planning - 2013	2	2013	2	2013
KEEN EDGE 16 Exercise Event - 2015	2	2015	2	2015
KEEN EDGE 16 Exercise Event - 2016	2	2016	2	2016
KEY RESOLVE 11 Exercise Planning - 2010	1	2011	1	2011
KEY RESOLVE 12 Exercise Event - 2012	2	2012	2	2012
KEY RESOLVE 12 Exercise Planning - 2011	3	2011	3	2011
KEY RESOLVE 13 Exercise Event 2013	2	2013	2	2013
KEY RESOLVE 13 Exercise Planning - 2012	3	2012	3	2012
KEY RESOLVE 14 Exercise Event - 2014	2	2014	2	2014
KEY RESOLVE 14 Exercise Planning - 2013	3	2013	3	2013
KEY RESOLVE 15 Exercise Event - 2015	2	2015	2	2015
KEY RESOLVE 15 Exercise Planning - 2014	3	2014	3	2014
KEY RESOLVE 16 Exercise Event - 2016	2	2016	2	2016
KEY RESOLVE 16 Exercise Planning - 2015	3	2015	3	2015
KEY RESOLVE 17 Exercise Planning - 2016	3	2016	3	2016
KEY RESOLVE Exercise Series-2Q 2015	2	2015	2	2015
MISSILE DEFENSE CONFERENCE-2Q 2012	2	2012	2	2012
MISSILE DEFENSE CONFERENCE-2Q 2013	2	2013	2	2013
MISSILE DEFENSE CONFERENCE-2Q 2014	2	2014	2	2014
MISSILE DEFENSE CONFERENCE-2Q 2015	2	2015	2	2015
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2011	4	2011	4	2011
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2012	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013	4	2013	4	2013
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014	4	2014	4	2014
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015	4	2015	4	2015
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016	4	2016	4	2016
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2011	2	2011	2	2011
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2012	2	2012	2	2012
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013	2	2013	2	2013
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014	2	2014	2	2014
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015	2	2015	2	2015
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016	2	2016	2	2016
NIMBLE TITAN 12 Wargame Event - 2012	3	2012	3	2012
NIMBLE TITAN 14 Wargame Event - 2014	3	2014	3	2014
NIMBLE TITAN 16 Wargame Event - 2016	3	2016	3	2016
SHARP SENTRY Table Top Exercise 1 Event - 2011	2	2011	2	2011
SHARP SENTRY Table Top Exercise 2 Event - 2011	2	2011	2	2011
SHARP SENTRY Table Top Exercise 3 Event - 2011	2	2011	2	2011
SHARP SENTRY Table Top Exercise 7 Event - 2011	4	2011	4	2011
TALISMAN SABRE Event - 2013	2	2013	2	2013
TALISMAN SABRE Event - 2015	2	2015	2	2015
TALISMAN SABRE Planning - 2013	1	2013	1	2013
TALISMAN SABRE Planning - 2015	1	2014	1	2014
TERMINAL FURY 11 Exercise Event - 2011	3	2011	3	2011
TERMINAL FURY 12 Exercise Event - 2012	3	2012	3	2012
TERMINAL FURY 12 Exercise Planning - 2011	4	2011	4	2011
TERMINAL FURY 13 Exercise Event - 2013	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
TERMINAL FURY 13 Exercise Planning - 2013	1	2013	1	2013
TERMINAL FURY 14 Exercise Event - 2014	3	2014	3	2014
TERMINAL FURY 14 Exercise Planning - 2014	1	2014	1	2014
TERMINAL FURY 15 Exercise Event - 2015	3	2015	3	2015
TERMINAL FURY 15 Exercise Planning - 2015	1	2015	1	2015
TERMINAL FURY 16 Exercise Event - 2016	3	2016	3	2016
TERMINAL FURY 16 Exercise Planning - 2016	1	2016	1	2016
ULCHI FREEDOM GUARD 11 Event - 2011	4	2011	4	2011
ULCHI FREEDOM GUARD 11 Planning - 2011	1	2011	1	2011
ULCHI FREEDOM GUARD 12 Event - 2012	3	2012	3	2012
ULCHI FREEDOM GUARD 12 Planning - 2012	1	2012	1	2012
ULCHI FREEDOM GUARD 13 Event - 2013	3	2013	3	2013
ULCHI FREEDOM GUARD 13 Planning - 2013	1	2013	1	2013
ULCHI FREEDOM GUARD 14 Event - 2014	3	2014	3	2014
ULCHI FREEDOM GUARD 14 Planning - 2013	1	2014	1	2014
ULCHI FREEDOM GUARD 15 Event - 2015	3	2015	3	2015
ULCHI FREEDOM GUARD 15 Planning - 2014	1	2015	1	2015
ULCHI FREEDOM GUARD 16 Event - 2016	3	2016	3	2016
ULCHI FREEDOM GUARD 16 Planning - 2015	1	2016	1	2016
VIGILANT SHIELD 11-1 Exercise Event - 2011	1	2011	1	2011
VIGILANT SHIELD 11-2 Exercise Event - 2012	1	2012	1	2012
VIGILANT SHIELD 13 Exercise Event - 2013	1	2013	1	2013
VIGILANT SHIELD 13 Exercise Planning - 2012	3	2012	3	2012
VIGILANT SHIELD 14 Exercise Event - 2015	1	2015	1	2015
VIGILANT SHIELD 14 Exercise Planning - 2013	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
VIGILANT SHIELD 15 Exercise Event - 2015	1	2015	1	2015
VIGILANT SHIELD 15 Exercise Planning - 2014	3	2014	3	2014
VIGILANT SHIELD 16 Exercise Event - 2016	1	2016	1	2016
VIGILANT SHIELD 16 Exercise Planning - 2015	3	2015	3	2015
VIGILANT SHIELD 17 Exercise Planning - 2016	3	2016	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>				MD40: <i>Program-Wide Support</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	2.365	1.690	2.785	-	2.785	2.638	2.573	2.872	3.018	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	2.365	1.690	2.785
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	2.365	1.690	2.785

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	83.112	69.249	63.043	-	63.043	54.299	55.409	54.693	55.844	Continuing	Continuing
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	80.116	66.408	59.842	-	59.842	51.558	52.702	51.993	53.009	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	2.996	2.841	3.201	-	3.201	2.741	2.707	2.700	2.835	Continuing	Continuing

Note
The FY 2012 and FY 2013 decrease`s are a result of DoD realignment to higher priorities.

A. Mission Description and Budget Item Justification

The Missile Defense Integration and Operations Center (MDIOC) is 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.

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:

- 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 (i.e. GTX, GTI, and GTD), and ensuring the integrity of their technical system architecture
- Providing network operations and information assurance for all on-site integration activities

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>
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- 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

Missile Defense Integration and Operations Center (MDIOC) Major Program Goals

- 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

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	86.198	69.325	64.514	-	64.514
Current President's Budget	83.112	69.249	63.043	-	63.043
Total Adjustments	-3.086	-0.076	-1.471	-	-1.471
• Congressional General Reductions	-0.586	-0.076			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.500	-			
• Other Adjustment	-	-	-1.471	-	-1.471

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>
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Change Summary Explanation

The FY 2011 decrease of \$3.086M reflects \$2.5M for program adjustments for Small Business Innovation Research Program/Small Business Technology Transfer (SBIR/STTR) and \$.586M for DoD priorities.

The FY 2012 decrease of \$.076M reflects realignment to Department of Defense priorities.

The FY 2013 decrease of \$1.471M reflects realignment to Department of Defense priorities.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	80.116	66.408	59.842	-	59.842	51.558	52.702	51.993	53.009	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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 Enterprise Sensors Laboratory (ESL) composed of a common satellite ground station and sensor netting test bed for designated Ballistic Missile Defense System (BMDS) elements. 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, 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 execute 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.

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

	FY 2011	FY 2012	FY 2013
Title: Infrastructure Systems and Support	20.532	21.102	25.595
Articles:	0	0	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance) -Maintained 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 MDIOC for the MDA elements/components, and Combatant Command and Wrfighter 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 Missile Defense Integration and Operations Center (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 -MDIOC Communication Services -Installed communications and networking infrastructure (hardware/software) in support of evolving mission requirements of resident MDA development, testing, training, and operational activities -Implemented Classified and Unclassified Voice Over Internet Protocol (VOIP) expansion to include the completion of the Missile Defense Integration and Operations Center (MDIOC) VOIP implementation -Provided telephony service 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 -Network Management Transport Services -Acquired and distributed mission critical unclassified and secure communications capability to ten resident MDA elements/ components and BMDS and Wafighter operational elements 			
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Provided management of network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources.</p> <p>-Maintained the technical infrastructure and equipment which includes, routers and switches, Core Cryptographic Devices; Edge Encryption Devices; Global Engagement Manager (GEM); base and long-haul communications</p> <p>-Information Assurance Systems:</p> <p>-Provided information assurance to MDA elements/components, BMDS elements, and Combatant Command (COCOM) and Wafighter operational elements resident at the Missile Defense Integration and Operations Center (MDIOC)</p> <p>-Maintained DoD Information Assurance Certification and Accreditation Process (DIACAP) accreditation packages; manage the Information Assurance Vulnerability Assessment Program and provided technical assistance to Controls Validation Tests</p> <p>-Provided DoD Information Assurance Certification and Accreditation (DIACAP) package management; ensured timely submissions to Information Assurance Manager/Designated Approval Authority (IAM/DAA) for MDA Admin/General Services (GENSER) and Event Packages</p> <p>-Performed architecture design, engineering, and configuration management reviews for all assigned projects</p> <p>-Managed the Information Assurance Vulnerability Assessment and Communications Tasking Order remediation and implementation efforts to ensure Defense Information Systems Agency/Joint Task Force - Global Network Operations (DISA/JTF-GNO) directed compliance</p> <p>-Infrastructure Implementation Engineering:</p> <p>-Implemented intelligence hardware/software updates as required to support the Operations Support Center</p> <p>-Provided MDIOC centric test event network related detailed designs in support of Test Events and real world operational events, provided implementation plans, updated interface control documents and performed Change Control and Configuration Management services</p> <p>-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</p> <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>			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<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 2012 Plans:</p> <p>-Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance)</p> <p>-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 Wrfighter operational elements</p> <p>-Provide computer hosting of specified threat models and support the integration of other threat tools as required</p> <p>-Plan/Initiate, when directed, the installation of any additional intelligence 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 cafeteria 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 Class and Unclassified Voice Over Internet Protocol (VOIP) expansion to include the completion of the Missile Defense Integration and Operations Center (MDIOC) VOIP implementation</p> <p>-Provide telephony services to include: Telephone/Fax Service: Provide local, long distance and Defense Switch Network telephone systems. Telephone Switch Operations: Operate, maintain, and upgrade telephone switches, nodes, and Private Branch Exchanges to include 911 support</p>				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Network Management Transport Services:</p> <ul style="list-style-type: none"> -Acquire and distribute mission critical unclassified and secure communications capability to ten resident MDA elements/ components and BMDS and Warfighter operational elements -Provide management of network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources -Maintain the technical infrastructure and equipment which includes, routers and switches, Core Cryptographic Devices; Edge Encryption Devices; Global Engagement Manager (GEM); base and long-haul communications <p>Information Assurance Systems:</p> <ul style="list-style-type: none"> -Provide information assurance to MDA elements/components, BMDS elements, and Combatant Command (COCOM) and Warfighter operational elements resident at the Missile Defense Integration and Operations Center (MDIOC) -Maintain DoD Information Assurance Certification and Accreditation Process (DIACAP) accreditation packages; manage the Information Assurance Vulnerability Assessment Program and provide technical assistance to Controls Validation Tests -Provide DoD Information Assurance Certification and Accreditation Process (DIACAP) package management; ensure timely submissions to Information Assurance Manager/Designated Accrediting Authority (IAM/DAA) for MDA Administrative/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 -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 			

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

	FY 2011	FY 2012	FY 2013
<p>-Implement final Defense Information Systems Agency - Global Information Grid (DISA GIG) Mission Assurance node configuration</p> <p>Software Licenses, Services and Applications:</p> <ul style="list-style-type: none"> -Maintain critical software licensing and maintenance agreements to meet critical customer and legal requirements, enable continued software support necessary to maintain the directed computer network defense posture and ensure continued system operational availability -Plan/Design/Implement technical lifecycle, refresh, and standardization of MDIOC print services -Implement MDIOC web cam upgrade and technology refresh -Implement a consolidated MS Project Server and deliver as a web based service <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance): -Continue to maintain a mission execution platform to provide an enabling infrastructure (to include hardware, software maintenance, licenses, and upgrades) that supports MDA Research, Development, Test and Evaluation (RDT&E) efforts at the Missile Defense Integration and Operations Center (MDIOC) for the MDA elements/components, and Combatant Command and Warfighter operational elements -Provide computer hosting of specified threat models and support the integration of other threat tools as required -Plan/Initiate, when directed, the installation of any additional data feeds required to support the Operations Support Center (OSC) -Provide file, print, and messaging services; manage and maintain automated patching software, and virus protection servers. Manage and maintain the MDA Enterprise directory services supporting user access to MDA Enterprise network resources; perform preventive maintenance and ensure data recovery capability through proper data backup scheduling and execution -Plan/Design enhancements to the MDIOC Data Center including floor space allocations, equipment staging areas, and streamlined logistics support function -Design/Implement upgrades to audio/visual support to the MDIOC supporting the distribution of signals over Internet Protocol -MDIOC Communication Services: -Install communications and networking infrastructure (hardware/software) in support of evolving mission requirements of resident MDA development, testing, training, and operational activities -Implement Classified and Unclassified Voice Over Internet Protocol (VOIP) expansion to include the completion of the MDIOC VOIP implementation 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<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</p> <p>-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; manage the Information Assurance Vulnerability Assessment Program and provide technical assistance to Controls Validation Tests</p> <p>-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</p> <p>-Perform architecture design, engineering, and configuration management reviews for all assigned projects</p> <p>-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> <p>-Infrastructure Implementation Engineering:</p> <p>-Implement intelligence hardware/software updates as required to support the Operations Support Center</p> <p>-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</p> <p>-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</p>				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -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 -Software Licenses, Services and Applications: -Maintain critical software licensing and maintenance agreements to meet critical customer and legal requirements, enable continued software support necessary to maintain the directed computer network defense posture and ensure continued system operational availability -Plan/Design/Implement technical lifecycle, refresh, and standardization of MDIOC print services -Implement MDIOC web cam upgrade and technology refresh -Implement a consolidated Microsoft Project Server and deliver as a web based service 				
<p>Title: Facilities and Maintenance</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Utilities (Electrical, Gas, Sewer, Water, Steam, ½ and Chilled Water): -Procured utility services through 50th Air Force Space Wing (Host Base) -Sustained utility infrastructure and delivery systems -Environmental, Safety and Occupational Health (ESOH): -Continued maintenance and updating of the program accident prevention plan -Provided required industrial safety training to facility services personnel -Procured and distributed personal protection equipment for contracted activities -Ensured compliance with Hazardous Waste/Hazardous Material/Recycling, and National Environmental Policy Act (NEPA) programs -Conducted recurring safety and environmental audits -Facilities Operations and Sustainment: 		18.755 0	19.056 0	18.583 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<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 preventive maintenance inspections (PMIs) for all building systems -Facilities Repair & Sustainment: -Upgraded facility electrical distribution system for dual redundancy (Phase II) -Replaced roof on Building 730 -Replaced incoming main electrical power switchgear -Installed Enhanced Electronic Security System -Facilities Engineering: -Conducted Management Process/Facility Installation Standard Audits -Provided risk management analysis and mitigation plans -Maintained infrastructure drawings/configuration management databases -Developed and documented facility long range planning/programming -Provided consulting services, preliminary designs and engineering/rough order of magnitude estimates for required infrastructure builds/changes -Missile Defense Integration and Operations Center (MDIOC) Operating Expenses: -Leased General Services Administration (GSA) Vehicles and two commercial warehouses -Funded Schriever Air Force Base Support Costs (Defense Red Switch Network (DRSN) Support, Local Dial Tone, Long Distance, and Cable TV) -Facility Services: -Provided custodial services for over 675,000 square feet of floor space in Buildings 720/730 -Provided limited Copy Center and Shuttle Services for over 2,000 personnel -Provided In/Out Processing and Personnel Moves -Cable Plant/Cubicle/Workstation: -Installed facility connectivity cabling; provided trouble shooting and repair -Installed and reconfigured furniture and workstations -Independent Assessments: -Conducted root cause analysis and consulting services as required 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Conducted an electrical coordination study of technical and non-technical services</p> <p>-Provided Quality Assurance Assessments</p> <p>FY 2012 Plans:</p> <p>Utilities (Electrical, Gas, Sewer, Water, Steam, & Chilled Water):</p> <p>-Procure utility services through 50th AF Space Wing (Host Base)</p> <p>-Sustain utility infrastructure and delivery systems</p> <p>Environmental, Safety & Occupational Health (ESOH):</p> <p>-Continue maintenance and updating of the program accident prevention plan</p> <p>-Provide required industrial safety training to facility services personnel</p> <p>-Procure and distribute personal protection equipment for contracted activities</p> <p>-Ensure compliance with Hazardous Waste/Hazardous Material/Recycling, and National Environmental Policy Act (NEPA) programs</p> <p>-Conduct recurring safety and environmental audits</p> <p>Facilities Operations and Sustainment:</p> <p>-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) extended from 15 minute response to two hour response time after normal duty hours</p> <p>-Conduct preventative maintenance inspections (PMIs) for all building systems</p> <p>Facilities Repair & Sustainment:</p> <p>-Provide emergency response and repair of infrastructure systems</p> <p>Facilities Engineering:</p> <p>-Conduct Management Process/Facility Installation Standard Audits</p> <p>-Provide risk management analysis and mitigation plans</p> <p>-Maintain infrastructure drawings/configuration management databases on a limited/minimum basis</p>				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Develop and document facility long range planning/programming -Provide consulting services, preliminary designs and engineering/rough order of magnitude estimates for required infrastructure builds/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 two commercial warehouses -Fund Schriever AFB Support Costs (Defense Red Switch Network (DRSN) Support, Local Dial Tone, Long Distance, Cable TV, & Grounds Maintenance) <p>Facility Services:</p> <ul style="list-style-type: none"> -Provide custodial services for over 675,000 square feet of floor space in Buildings 720/730 -Provide limited Copy Center and Shuttle Services for over 2,000 personnel -Provide In/Out Processing & Personnel Moves <p>Cable Plant/Cubicle/Workstation:</p> <ul style="list-style-type: none"> -Install facility connectivity cabling; provide trouble shooting and repair on a critical basis -Install and reconfigure furniture and workstations on a critical basis <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Utilities (Electrical, Gas, Sewer, Water, Steam, and Chilled Water): -Procure utility services through 50th Air Force Space Wing (Host Base) -Sustain utility infrastructure and delivery systems -Environmental, Safety and Occupational Health (ESOH): -Continue maintenance and updating of the program accident prevention plan -Provide required industrial safety training to facility services personnel -Procure and distribute personal protection equipment for contracted activities -Ensure compliance with Hazardous Waste/Hazardous Material/Recycling, and National Environmental Policy Act (NEPA) programs -Conduct recurring safety and environmental audits 				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Facilities Operations and Sustainment: -Provide 24 hours a day, 7 days a week, 365 days a year, facility maintenance break/fix response for all facility systems (electrical; Heating, Ventilation, and Air Conditioning; plumbing; locksmith) response time extended from 15 minutes to two hours after normal duty hours -Conduct preventative maintenance inspections (PMIs) for all building systems -Facilities Repair & Sustainment: -Electrical distribution upgrades design phase III -Electrical distribution upgrades implementation phase III -Emergency lighting module replacement -Replace building exterior panel sealant phase II and phase III -Provide emergency response and repair of infrastructure systems -Facilities Engineering: -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 builds/changes -Missile Defense Integration and Operations Center (MDIOC) Operating Expenses: -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, & Grounds Maintenance) -Facility Services: -Provide custodial services for over 675,000 square feet of floor space in Buildings 720/730 -Provide limited Copy Center and Shuttle Services for over 2,000 personnel -Provide In/Out Processing and Personnel Moves -Cable Plant/Cubicle/Workstation: -Install facility connectivity cabling; provide trouble shooting and repair on a critical basis 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Install and reconfigure furniture and workstations on a critical basis

Title: Engineering and Event Services	10.569	8.526	7.809
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

- Mission Assurance and Event Execution Support:
- 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:
 - 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 System (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 and maintenance de-confliction 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
 - Supported the initial relocation of Space Tracking and Surveillance System (STSS) program office personnel from Los Angeles Air Force Base to the Missile Defense Integration and Operations Center (MDIOC)
 - Executed aggressive, proactive and tailored risk management to ensure integrity and persistent connectivity for all MDIOC missions including:
 - 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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Ballistic Missile Defense System (BMDS) focused, system and distributed ground testing and Hardware-in-the-Loop (HWIL) execution -Modeling and Simulation program management; Digital Simulation Architecture Development; Validation, Verification 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 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 -Technical Watch Support: -Provided on-site technical environment for 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 MDIOC technical and management staff to ensure rapid break/fix actions are executed -Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Business and Finance Operations -Provided overarching contract and financial management support for all Joint National Integration Center (JNIC) Research and Development Contract (JRDC) integrated programs/projects 				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Provided engineering coordination, resource management, and event integration across all Missile Defense Integration and Operations Center (MDIOC) mission areas -Conducted continuous process improvement and implementation across all JRDC execution and MDIOC missions -Delivered integrated skill mix planning, coordination and workforce deployment across the dynamic spectrum of MDIOC events -Executed integrated resource forecasting and de-confliction -Performed project management for discrete enterprise enhancements -Event Architecture & Engineering Design: -Coordinated design and implementation of technical architectures for all major MDIOC hosted Ballistic Missile Defense System (BMDS) tests, training and operations -Delivered technical documentation packages for all major BMDS flight tests, ground tests, training and Combatant Command (COCOM) exercise support -Led requirements coordination and technical architecture enhancements for BMDS wargame, exercise and training networks -Updated BMDS end-to-end COCOM deployed architecture as-built documentation reflecting new incremental content and deployments -Maintained a technical repository of BMDS Implementation Architectures for real-time operations and configuration management <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Mission Assurance and Event Execution Support -Implement baseline technical control for all MDIOC mission critical subsystems and services -Execute MDIOC engineering management, quality assurance, configuration management and integration of all mission critical systems including: -Technical power distribution, Uninterruptable Power Supply Systems, major transformer substations, and circuit protection -Heating, Ventilation and Air Conditioning, chilled water and steam systems -Secure and non-secure voice communications for BMDS Operations, major tests, and general constituencies -Local and wide area secure data networking environments and network health and status tools 24 hours a day, 7 days a week, 365 days a year -Ensure high availability of integrated MDIOC systems and BMDS Operations support 24 hours a day, 7 days a week, 365 days a year -Implement `last mile` integration for BMDS Operations, BMDS test, Wargaming, 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 				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Support the completion of the relocation of the Space Tracking and Surveillance System (STSS) program office to the Missile Defense Integration and Operations Center (MDIOC).</p> <p>-Execute aggressive, proactive and tailored risk management to ensure integrity and persistent connectivity for all MDIOC missions including:</p> <p>-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</p> <p>-Ballistic Missile Defense System (BMDS) focused, system and distributed ground testing and Hardware-in-the-Loop (HWIL) execution</p> <p>-Modeling and Simulation program management; Digital Simulation Architecture Development; Validation, Verification & Accreditation</p> <p>-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).</p> <p>-Joint Target Operations Center (JTOC) Target of Opportunity (TOO) and target tracking, coordination and visualization</p> <p>-BMDS Operational Support Center and technical integration and implementation services 24 hours a day, 7 days a week, 365 days a year</p> <p>-MDA Intelligence Support Cell and Threat Modeling Center services</p> <p>-BMDS Wargame, exercise and DMETS training execution; Warfighter Support Center program integration</p> <p>-Missile Defense Space Experimentation Center (MDSEC) Satellite Operations, Ground System and experiment support operations, and Airborne Infrared Radar (ABIR), and Space Tracking and Surveillance System (STSS) testing</p> <p>-Enterprise Sensor Laboratory experimental, networking and facility support and coordination</p> <p>-Ground-Based Midcourse Defense (GMD) Fire Control component-level operations, integration, testing, and training</p> <p>-Joint Early Warning Laboratory mission services and connectivity</p> <p>-Combatant Command (COCOM) operations work centers including the United States Northern Command (USNORTHCOM), C2BMC, Control Center (CCC), Army 100th Missile Defense Brigade, and United States Strategic Command's Joint Functional Component Command-Integrated Missile Defense</p> <p>-MDA General Services Network and Operational Support Center and Network Communications Center</p> <p>-MDA Computer Emergency Response Team</p> <p>Technical Watch Support:</p> <p>-Provide on-site technical environment for BMDS Watch Officers, Safety Officers, and Information Assurance Officers to execute their duties 8 hours a day, 5 days a week with a capability to surge to 24 hours a day, 7 days a week for contingency operations</p> <p>-Implement recall procedures to augment subject matter expertise availability during contingencies and major events</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Execute tabletop exercises to asses readiness for Combatant Command (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 MDIOC technical and management staff to ensure rapid break/fix actions are executed -JNIC JRDC Business & Finance Operations -Provide overarching contract and financial management support for all Joint National Integration Center (JNIC) Research and Development Contract (JRDC) integrated programs/projects -Provide engineering coordination, resource management, and event integration across all Missile Defense Integration and Operations Center (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 Event Architecture & Engineering Design -Coordinate design and implementation of technical architectures for all major MDIOC hosted Ballistic Missile Defense System (BMDS) tests, training and operations -Deliver technical documentation packages for all major BMDS flight tests, ground tests, training and Combatant Command (COCOM) exercise support -Lead requirements coordination and technical architecture enhancements for BMDS wargame, exercise and training networks -Update BMDS end-to-end 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>Event and Personnel Support:</p> <ul style="list-style-type: none"> -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 lodgin -Arrangement/Coordination/Scheduling of Bus Transportation -Liaison between event Point of Contact (POC) and catering POC 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -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 <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Mission Assurance and Event Execution Support -Implement baseline technical control for all Missile Defense Integration and Operations Center (MDIOC) mission critical subsystems and services -Execute MDIOC engineering management, quality assurance, configuration management and integration of all mission critical systems including: <ul style="list-style-type: none"> -Technical power distribution, Uninterruptable Power Supply Systems, major transformer substations, and circuit protection -Heating, Ventilation and Air Conditioning, chilled water and steam systems -Secure and non-secure voice communications for Ballistic Missile Defense Systems (BMDS) Operations, major tests, and general constituencies -Local and wide area secure data networking environments and network health and status tools 24 hours a day, 7 days a week, 365 days a year -Ensure high availability of integrated MDIOC systems and BMDS Operations support 24 hours a day, 7 days a week, 365 days a year -Implement `last mile` integration for BMDS Operations, BMDS test, War gaming, exercise, training and general/admin services -Execute comprehensive configuration baseline integrity freezes, periods of interest and work screening for all major tests and real world contingencies -Coordinate process improvement investments across all mission areas -Execute aggressive, proactive and tailored risk management to ensure integrity and persistent connectivity for all MDIOC missions including: -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 				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -BMDS flight tests including Flight Test Ground-Based Midcourse Defense (FTG) execution; Flight Test - Aegis (FTM) and Flight Test - THAAD (FTT) planning, coordination and situational awareness. (For system flight tests directed from the MDIOC, ensure the protection of power, Heating, Ventilation and Air Conditioning, and communications critical to test execution and control). -Joint Target Operations Center (JTOC) Target of Opportunity (TOO) and target tracking, coordination and visualization -BMDS Operational Support Center and technical integration and implementation services 24 hours a day, 7 days a week, 365 days a year -MDA Intelligence Support Cell and Threat Modeling Center services -BMDS Wargame, exercise and DMETS training execution; Warfighter Support Center program integration -Missile Defense Space Development Center (MDSDC) Satellite Operations, Ground System and experiment support operations, and 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 -Technical Watch Support -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 assess 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 -Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Business and Finance Operations -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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<ul style="list-style-type: none"> -Execute integrated resource forecasting and de-confliction -Perform project management for discrete enterprise enhancements -Event Architecture & Engineering Design: -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 (BMDS) wargame, exercise and training networks -Update BMDS end-to-end Combatant Command (COCOM) deployed architecture as-built documentation reflecting new incremental content and deployments -Maintain a technical repository of BMDS Implementation Architectures for real-time operations and configuration management 			
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Title: Operations and Sustainment	6.246	6.038	6.234
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:

- Government Civilian, Contract Support Services (CSS), Training, Travel, Federally Funded Research and Development Centers (FFRDC)
- Funded Civilian, Contract Support Services (CSS) and Contract positions supporting operations and sustainment of all Missile Defense Integration Operations Center 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:
 - Event Registration Website
 - 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

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Prepared and conducted official ceremonies; coordinated and host Distinguished Visitor itineraries; obtain information disclosure approval; coordinated offsite dinners and socials</p> <p>-Developed and Coordinated Cross-Domain Solution architectures for high priority BMDS testing and contingency deployments</p> <p>-Coordinated MDA leveraged involvement in multi-mission integration opportunities sponsored by external agencies and customers</p> <p>-Funded Training and Travel</p> <p>FY 2012 Plans:</p> <p>-Government Civilian, Contract Support Services (CSS), Training, Travel, Federally Funded Research and Development Centers (FFRDC)</p> <p>-Fund Civilian, Contract Support Services (CSS) and Federally Funded Research and Development Centers (FFRDC) positions supporting operations and sustainment of all MDIOC activities contributing to the mission execution platform</p> <p>-Fund Training and Travel</p> <p>-Defense Efficiency - Contractor Staff Support. As part of the Department of Defense reform agenda, reduces funds below the aggregate level reported in FY 2010 for controls that augment staff functions. (\$1.202 thousands)</p> <p>FY 2013 Plans:</p> <p>-Government Civilian, CSS, Training, Travel, FFRDC</p> <p>-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</p> <p>-Provide quality event planning, coordination, logistics, security access and host support for all MDIOC events and visitors</p> <p>-Deliver integrated service coordination for all MDIOC event and protocol support including:</p> <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 			
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Develop and coordinate Cross-Domain Solution architectures for high priority Ballistic Missile Defense System (BMDS) testing and contingency deployments -Coordinate MDA leveraged involvement in multi-mission integration opportunities sponsored by external agencies and customers -Fund Training and Travel 				
<p>Title: C2BMC Test Beds</p> <p>Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: The BMDS performance evaluation strategy is to develop models and simulations of the BMDS and compare their predictions to empirical data collected through comprehensive flight and ground testing to validate their accuracy, rather than physically testing all possible combinations of Ballistic Missile Defense System (BMDS) configurations, engagement conditions, and target phenomena. The BMDS test review determined how to validate our models and simulations so that our war fighting commanders consider employing the BMDS in ways other than originally planned or against threats unknown at this time.</p> <ul style="list-style-type: none"> -Completed the transition the Missile Defense Integration and Operations Center (MDIOC) Command, Control, Battle Management and Communications (C2BMC) Testbed to support sustainment testing of C2BMC Spiral 6.4 -Started the C2BMC Testbed Test Environment transition to C2BMC Spiral 8.2 -Planned, collected data, assessed, examined, and reported on MDA directed C2BMC spiral integration testing -Supported continuing integration of missile defense elements into the BMDS command and control structure -Supported interoperability and integration of the BMDS program elements -Improved the operational realism of the system test architectures -Conducted a system test campaign across the architecture based on the Integrated Master Plan Test (IMPT) Schedule -Supported the field testing of the European Deployment -Sustained the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training -Provided infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> -C2BMC Control Center (CCC) -System Test and Operations Center (STOC) -BMDS Communications Network (BCN) -Parallel Staging Network (PSN) -BMDS Network Operations and Security Center (BNOSC) 		20.332	-	-
		0	0	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conducted C2BMC Experimentation Laboratory (X-Lab) Events and Experimentation -Refined Command, C2BMC interfaces to BMDS Elements and Sensors -Completed BMD Overhead Persistent Infrared (OPIR) Architecture (BOA) performance assessments, integration, and testing <p>FY 2012 Plans: Plans captured in Project MD01, PE 0603896C beginning FY 2012</p> <p>FY 2013 Plans: NA</p>				
<p>Title: Joint Early Warning Laboratory (JEWL)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: As the USSTRATCOM designated facility for testing all changes or additions to the Theater Event System (TES) architecture, the Joint Early Warning Lab (JEWL) replicates all known theater Early Warning (EW) architecture and maintains a replay capability for fault isolation, anomaly identification, and can modify data to isolate anomalies. The JEWL provides timely analysis and comparisons of the legacy EW and BMD systems.</p> <ul style="list-style-type: none"> -Performed Ballistic Missile Defense System (BMDS) Early Warning test, integration and fielding support -Performed Joint Early Warning operational assessments and support -Recorded data on all missile events broadcast over Theater Event System (TES) -Maintained database on all missile events recorded since January 2003 -Performed analysis pertaining to live events -Supported testing and integration of Theater Missile Warning (TMW) and Integrated Air Missile Defense (IAMD) architecture improvements -Performed United States Strategic Command (USSTRATCOM) Configuration Control Board (CCB) assessments and technical evaluations of new systems for inclusion in Theater Missile Warning (TMW) Architecture -Conducted TMW Health Checks to assist Combatant Command (COCOMs) in evaluating their missile warning architecture, and optimize their early warning coverage in conjunction with USSTRATCOM -Supported the Global Command and Control System (GCCS) Theater Air and Missile Defense (TAMD) workgroup and sustainment of TMW capabilities in Global Command and Control System (GCCS) -Maintained web-based documentation of Combatant Command (COCOM) Tier-1 TMW equipment configuration -Provided subject-matter expertise in support of BMDS and TMW architecture convergence 		<p>2.043</p> <p>Articles: 0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Performed testing on new systems for inclusion into the Theater Missile Warning (TMW) architecture</p> <p>-Performed Early Warning Target of Opportunity (TOO) initial quick reports and comparative analysis</p> <p>-Performed Operational Early Warning Anomaly Tracking and Analysis</p> <p>-Provided BMDS Command, Control, Battle Management and Communications (C2BMC) Early Warning Integration support</p> <p>-Performed Operator/Warfighter Theater Missile Warning (TMW) Exercise Data Analysis</p> <p>-Provided and chair USSTRATCOM CCB Engineering Subgroup</p> <p>-Established the Early Warning Incident / Anomaly tracking database in support of the TMW CCB and BMDS Early Warning Special Product Team (EW SPT) reporting and metrics tracking</p> <p>-Upgraded Joint Early Warning Laboratory (JEWL) hardware/software/communications</p> <p>-Provided Command, Control, Battle Management and Communications (C2BMC) display analysis for inclusion in the BMDS Integrated Tactical Warning/Attack Assessment (ITWAA) Theater Event System (TES) Comparison Reports</p> <p>-Continued to provide Early Warning-Special Product Team (EW-SPT) missile warning technical expertise for the COCOM Warfighters</p> <p>FY 2012 Plans: Plans captured in Project MD01, PE 0603896C beginning FY 2012</p> <p>FY 2013 Plans: NA</p>				
<p>Title: Modeling & Simulation Systems Engineering and Integration</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Conducted alternative concepts, technical Feasibility Analysis, and preliminary trade studies. These included concept definition for a remote infrared sensor and technical assessment of unique high-performance design options for Standard Missile 3 Block IIB (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> <p>-Continued planning and coordination for real-time track demonstrations using an Unmanned Aerial Vehicle (UAV) (associated with scheduled BMDS test events) using an existing airborne platform</p> <p>-Started design work on high-performance design options for SM-3 Block IIB</p>		<p>Articles:</p> <p>1.639 0</p>	<p>1.686 0</p>	<p>1.621 0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Continued to support assigned Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs) and other special studies</p> <p>FY 2012 Plans: Conduct alternative concepts, technical Feasibility Analysis, and preliminary trade studies. This includes technical assessment of unique high-performance design options for SM-3 Block IIB. Provide analysis support to the Chief Architect (Architecture Trade Studies, Initiatives by Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs), Special Programs, and other Special Studies.</p> <p>-Continue design work on high-performance design options for SM-3 Block IIB -Support pre-mission analysis involving Space Tracking and Surveillance System (STSS) with Aegis testing -Continue to support assigned Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs) and other special studies</p> <p>FY 2013 Plans: Conduct alternative concepts, technical Feasibility Analysis, and preliminary trade studies. This includes technical assessment of unique high-performance design options for SM-3 Block IIB. Provide analysis support to the Chief Architect (Architecture Trade Studies, Initiatives by Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs), Special Programs, and other Special Studies.</p> <p>-Continue design work on high-performance design options for SM-3 Block IIB -Support pre-mission analysis involving Space Tracking and Surveillance System (STSS) with Aegis testing -Continue to support assigned Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs) and other special studies</p>				
<p>Title: IT Infrastructure Recapitalization</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans:</p>		<p>Articles:</p> <p>-</p> <p>0</p>	<p>10.000</p> <p>0</p>	<p>-</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Invest \$10 million in IT Recapitalization to include desk tops, laptops, thin clients, servers, routers, and switches. Approximately ten percent of the 12,850 desktop computers, laptops, and thin client devices within the Missile Defense Agency are older than five years compared to an industry refresh standard of three years.			
FY 2013 Plans: N/A			
Accomplishments/Planned Programs Subtotals	80.116	66.408	59.842

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603274C: <i>Special Program - MDA Technology</i>	0.000	61.371	36.685		36.685	39.736	42.726	46.310	47.213	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	420.839	290.076	316.929		316.929	313.212	338.353	249.475	279.758	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603891C: <i>Special Programs - MDA</i>	228.450	296.145	272.387		272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603893C: <i>Space Tracking & Surveillance System</i>	105.580	96.232	51.313		51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	10.569	7.940	6.912		6.912	6.576	6.610	7.219	7.371	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	55.351	41.174	55.550		55.550	53.139	53.718	59.291	60.540	Continuing	Continuing
• 0603901C: <i>Directed Energy Research</i>	126.096	49.943	46.944		46.944	47.865	47.357	52.519	54.513	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0603906C: <i>Regarding Trench</i>	7.520	15.775	11.371		11.371	10.369	5.050	1.769	1.809	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	151.032	176.831	9.730		9.730	9.725	9.739	9.725	9.728	Continuing	Continuing
• 0603913C: <i>Israeli Cooperative Programs</i>	209.048	235.700	99.836		99.836	95.782	96.803	103.940	106.020	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	299.767	473.843	420.630		420.630	273.926	200.699	185.007	46.103	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	36.693	80.723	297.375		297.375	267.505	285.529	326.073	354.190	Continuing	Continuing
• 0901585C: <i>Pentagon Reservation</i>	20.378	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	20.378
• 0901598C: <i>Management HQ - MDA</i>	28.472	28.908	34.855		34.855	25.473	30.838	31.482	32.798	Continuing	Continuing

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
defense subject matter experts (SME) composed of Government military and civilian personnel, Federally Funded Research and Development Center (FFRDC), MDIOC Technical Advisory and Assistance Services, and major defense contractors.		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Systems and Support MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	37.586	21.102	Nov 2011	25.595	Nov 2012	-		25.595	Continuing	Continuing	Continuing
Facilities and Maintenance MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	30.509	15.614	Nov 2011	15.047	Nov 2012	-		15.047	Continuing	Continuing	Continuing
Facilities and Maintenance MDIOC GSA / Leases / Calibration	MIPR	Various (GSA, 50th Space Wing, Warehouses):Colorado Springs, CO	2.034	1.182	Dec 2011	1.198	Dec 2012	-		1.198	2.754	7.168	0.000
Facilities and Maintenance MDIOC Utilities	MIPR	50th Space Wing:Schriever AFB, CO	4.274	2.260	Oct 2011	2.338	Oct 2012	-		2.338	Continuing	Continuing	Continuing
Engineering and Event Services MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	23.513	8.526	Oct 2011	7.809	Oct 2012	-		7.809	Continuing	Continuing	Continuing
Operations and Sustainment Operations & Sustainment	Allot	MDIOC:Colorado Springs, CO	6.667	3.076	Oct 2011	3.218	Oct 2012	-		3.218	Continuing	Continuing	Continuing
Operations and Sustainment CSS/A&AS	C/FFP	SRS/ManTech/ MiDAESS Multi:Colorado Springs, CO	5.639	2.463	Oct 2011	2.494	Oct 2012	-		2.494	6.502	17.098	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operations and Sustainment FFRDC	FFRDC	MDIOC:Colorado Springs, CO	1.053	0.371	Oct 2011	0.383	Oct 2012	-		0.383	1.098	2.905	0.000
Operations and Sustainment Travel and Training	Allot	MDIOC:Colorado Springs, CO	0.268	0.128	Oct 2011	0.139	Oct 2012	-		0.139	0.323	0.858	0.000
Modeling & Simulation Systems Engineering and Integration BMDS Architecture	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	2.820	1.686	Oct 2011	1.621	Oct 2012	-		1.621	3.537	9.664	0.000
IT Infrastructure Recapitalization Information Technology	C/CPAF	MDIOC/Northrop Grumman Mission Systems/:Colorado Springs, CO	-	10.000	Jan 2012	-		-		-	Continuing	Continuing	Continuing
Subtotal			114.363	66.408		59.842		-		59.842			

Remarks

Funds for utilities and base communications or 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 Advisory and Assistance Services employees, for MDIOC operations and oversight of the Joint Research and Development Contractor (JRDC), as well as funding for JRDC work as required by the government.

FY 2012 IT Infrastructure Recapitalization did not exist in FY 2010 and FY 2011; Invest \$10 million in IT Recapitalization to include desk tops, laptops, thin clients, servers, routers, and switches. Approximately ten percent of the 12,850 desktop computers, laptops, and thin client devices within the Missile Defense Agency are older than five years compared to an industry refresh standard of three years. Continuing to extend refresh rates is increasing the risk for downtime and increased labor requirements to sustain obsolete systems.

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C2BMC Test Beds C2BMC Testbed - 1	C/FFP	Mantech/ MiDAESS:Colorado Springs, CO	3.102	-		-		-		-	Continuing	Continuing	Continuing
C2BMC Test Beds C2BMC Testbed - 2	FFRDC	IDA:Colorado Springs, CO	1.670	-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C2BMC Test Beds BMDS Level Testing	C/CPAF	Northrop Grumman Mission Systems:Colorado Springs, CO	35.407	-		-		-		-	Continuing	Continuing	Continuing
Joint Early Warning Laboratory (JEWL) JEWL	C/CPAF	MULTI:Colorado Springs, CO	4.192	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			44.371	-		-		-		-			

Remarks
FY 2012 Plans captured in Project MD01, PE 0603896C

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	158.734	66.408		59.842	-	59.842			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT 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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017					
	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		
Recapitalization AF Tenant Space 1201 Ph 2	▲																													
Electrical Power Distribution Upgrade Phase II Design	+ +																													
Electrical Power Distribution Upgrade Phase II Implementation					☆ ☆																									
Electrical Power Distribution Upgrade Phase III Design									☆ ☆																					
Design, procure, and implement additional data storage capacity													☆ ☆																	
Electrical Power Distribution Upgrade Phase III Implementation									☆ ☆																					
Replace Roof, Building 730	▲																													
Emergency Lighting System Replacement									☆ ☆																					
Electrical Power Distribution Upgrade Phase IV Design													☆ ☆																	
Electrical Power Distribution Upgrade Phase IV Implementation																	☆ ☆													
Install Restricted Area Access Telephone System													☆ ☆																	
Electrical Power Distribution Upgrade Phase V Design																	☆ ☆													
Electrical Power Distribution Upgrade Phase V Implementation																					☆ ☆									
Replace Elevators																	☆ ☆													
Replace building exterior panel sealant PhI									☆ ☆																					
Replace building exterior panel sealant Phase II and Phase III													☆ ☆																	
Replace building exterior panel sealant Phase IV and V																	☆ ☆													
System Test (ST) (C2BMC Suite for Ground Test) - 1 Spiral 6.4 Upgrade Q1-Q3	+ + + +																													
Ground Test Spiral 6.4 BMD Overhead Persistent IR (BOA) Node Q1	▲																													
Vigilant Shield 11	▲																													
Vigilant Shield 12					▲																									
Vigilant Shield 13									△																					
Vigilant Shield 14													△																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT 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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Vigilant Shield 15																												
Global Defender Ex06																												
Keen Edge Q2																												
Nimble Titan																												
Nimble Titan Q3																												
Terminal Fury 11																												
Terminal Fury 12																												
Terminal Fury 13																												
Terminal Fury 14																												
Terminal Fury 15																												
Eagle Resolve 12																												
Assured Response 04X Q1 FY11																												
Assured Response 04d																												
Assured Response 06a																												
Global Thunder 11																												
Global Thunder 12																												
Global Thunder 13																												
Global Thunder 14																												
Global Thunder 15																												
Global Thunder 16																												
BMDS Wargame 12																												
Global Lightning 11																												
Global Lightning 12																												
Global Lightning 13																												
Global Lightning 14																												
Global Lightning 15																												
Global Defender Ex 04																												
GTD-04b (System Ground Test)																												
GTI-04d (System Ground Test)																												
TA-04 Technical Assessment 04																												
GTX-04e (System Ground Test)																												
GTI-04e (VV&A) (System Ground Test)																												
GTX-07a (System Ground Test)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT 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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GTX-07b (System Ground Test)																												
GTD-04e (VV&A) (System Ground Test)																												
GTI-04e (DT) (System Ground Test)																												
GTI-04e (OT) (System Ground Test)																												
PA-04 Performance Assessment 04																												
GTD-04e (DT) (System Ground Test)																												
GTD-04e (OT) (System Ground Test)																												
GTX-06a Focused Regional Ground Test Event																												
Warfighter TP 04 Warfighter Trial Period 04 (System Ground Test)																												
GTX-06b (Focused Strategic Ground Test)																												
GTI-06 (VV&A) (Full BMDS HWIL Test) (System Ground Test)																												
GTD-06 (VV&A) (System Ground Test)																												
GTI-06 (DT) (Full BMDS HWIL Event) (System Ground Test)																												
GTI-06 (OT) (System Ground Test)																												
GTD-06 (DT) (System Ground Test)																												
GTD-06 (OT) (System Ground Test)																												
PA-06 Performance Assessment 06																												
Warfighter TP 06 (System Ground Test)																												
FTG-06a (GM Intercept Test Flight)	●																											
JFTM-04 E1, E2, E3 (Aegis Simulated Intercept Flight Test)	◆																											
USFT-4 (Arrow Intercept Test Flight)	◆																											
Blue Sparrow-2 (Arrow Flight Test)			◆																									
FTM-16 (Aegis Flight Test) E1(Simulated Intercept), E2 (Intercept)				◆																								
FTP-04 (PATRIOT Flight Test)			◆																									
FTX-11 (USAF Glory Trip 203 Flight Test)				◆																								
FTX-17 (Air Launched Target Return to Flight - Flight Test)				◆																								
FTM-15 (Aegis Flight Test)				◆																								
FTT-12 (THAAD Intercept Flight Test)				◆																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT 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 Planned Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
AST-14 (Israeli Cooperative Intercept Flight Test)								△																				
FTM-19 E2 (Aegis Intercept Flight Test)							◇																					
FTM-20 E2 (Aegis Intercept Flight Test)															◇													
FTG-08 (GMD Intercept Flight Test)														○														
FTM-22 E2 (Aegis Intercept Flight Test)												◇																
FTM-26 (Aegis Intercept Flight Test)																									◇			
FTT-11a (THAAD Flight Test)															◇													
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)												○																
FTM-21 E1 (Aegis Flight Test) E1 (Simulated Intercept), E2 (Simulated Intercept), E3 (Intercept)												◇																
FTX-10 (Cobra Dane Tracking Test)																		○										
FTT-15 (THAAD Intercept Flight Test)																										○		
AST-15 (Israeli Cooperative Intercept Flight Test)													△															
FTM-19 E1 (Aegis Simulated Intercept Flight Test)												○																
AACTV-01 E1, E2 (Aegis Ashore Flight Test)														◇														
AST-17 (Israeli Cooperative Intercept Flight Test)																									△			
AST-18 (Israeli Cooperative Intercept Flight Test)																										△		
FTG-06b (GM Intercept Flight Test)								△																				
FTG-13 (GM Intercept Flight Test)																												
FTG-15 (GM Intercept Flight Test)																											△	
FTG-17 (GM Intercept Flight Test)																											△	
FTM-16 E2a (Simulated Intercept Flight Test)							○																					
FTM-18 (Aegis Intercept Flight Test)							◇																					
FTM-20 E2 (Aegis Simulated Intercept Flight Test)																												
FTM-30 (Aegis Intercept Flight Test)																												
FTP-06 (Patriot Flight Test)								◇																				
FTP-07 (Patriot Flight Test)								◇																				
FTP-08 (Patriot Flight Test)												◇																
FTX-19 (Aegis Simulated Endo-Engagement)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Recapitalization AF Tenant Space 1201 Ph 2	1	2011	1	2011
Electrical Power Distribution Upgrade Phase II Design	1	2011	2	2011
Electrical Power Distribution Upgrade Phase II Implementation	1	2012	2	2012
Electrical Power Distribution Upgrade Phase III Design	1	2013	2	2013
Design, procure, and implement additional data storage capacity	2	2014	3	2014
Electrical Power Distribution Upgrade Phase III Implementation	3	2013	4	2013
Replace Roof, Building 730	1	2011	1	2011
Emergency Lighting System Replacement	3	2013	4	2013
Electrical Power Distribution Upgrade Phase IV Design	1	2014	2	2014
Electrical Power Distribution Upgrade Phase IV Implementation	1	2015	2	2015
Install Restricted Area Access Telephone System	3	2014	4	2014
Electrical Power Distribution Upgrade Phase V Design	1	2015	2	2015
Electrical Power Distribution Upgrade Phase V Implementation	3	2015	4	2015
Replace Elevators	2	2015	3	2015
Replace building exterior panel sealant Ph I	3	2012	4	2012
Replace building exterior panel sealant Phase II and Phase III	2	2013	3	2013
Replace building exterior panel sealant Phase IV and V	2	2014	3	2014
System Test (ST) (C2BMC Suite for Ground Test) - 1 Spiral 6.4 Upgrade Q1-Q3	1	2011	4	2011
Ground Test Spiral 6.4 BMD Overhead Persistent IR (BOA) Node Q1	1	2011	1	2011
Vigilant Shield 11	1	2011	1	2011
Vigilant Shield 12	1	2012	1	2012
Vigilant Shield 13	1	2013	1	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Vigilant Shield 14	1	2014	1	2014
Vigilant Shield 15	1	2015	1	2015
Global Defender Ex06	3	2015	3	2015
Keen Edge Q2	2	2012	2	2012
Nimble Titan	2	2011	2	2011
Nimble Titan Q3	3	2012	3	2012
Terminal Fury 11	3	2011	3	2011
Terminal Fury 12	3	2012	3	2012
Terminal Fury 13	3	2013	3	2013
Terminal Fury 14	3	2014	3	2014
Terminal Fury 15	3	2015	3	2015
Eagle Resolve 12	3	2012	3	2012
Assured Response 04X Q1 FY11	1	2011	1	2011
Assured Response 04d	2	2011	2	2011
Assured Response 06a	4	2015	4	2015
Global Thunder 11	1	2011	1	2011
Global Thunder 12	1	2012	1	2012
Global Thunder 13	1	2013	1	2013
Global Thunder 14	2	2014	2	2014
Global Thunder 15	1	2015	1	2015
Global Thunder 16	2	2016	2	2016
BMDS Wargame 12	3	2012	3	2012
Global Lightening 11	3	2011	3	2011
Global Lightening 12	3	2012	3	2012
Global Lightening 13	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Global Lightning 14	3	2014	3	2014
Global Lightning 15	2	2015	2	2015
Global Defender Ex 04	4	2012	4	2012
GTD-04b (System Ground Test)	2	2011	2	2011
GTI-04d (System Ground Test)	3	2011	3	2011
TA-04 Technical Assessment 04	4	2011	4	2011
GTX-04e (System Ground Test)	2	2012	2	2012
GTI-04e (VV&A) (System Ground Test)	1	2013	1	2013
GTX-07a (System Ground Test)	3	2016	3	2016
GTX-07b (System Ground Test)	4	2016	4	2016
GTD-04e (VV&A) (System Ground Test)	4	2013	4	2013
GTI-04e (DT) (System Ground Test)	3	2013	3	2013
GTI-04e (OT) (System Ground Test)	4	2013	4	2013
PA-04 Performance Assessment 04	3	2013	3	2013
GTD-04e (DT) (System Ground Test)	4	2013	4	2013
GTD-04e (OT) (System Ground Test)	4	2013	4	2013
GTX-06a Focused Regional Ground Test Event	4	2013	4	2013
Warfighter TP 04 Warfighter Trial Period 04 (System Ground Test)	1	2014	1	2014
GTX-06b (Focused Strategic Ground Test)	2	2014	2	2014
GTI-06 (VV&A) (Full BMDS HWIL Test) (System Ground Test)	4	2014	4	2014
GTD-06 (VV&A) (System Ground Test)	4	2015	4	2015
GTI-06 (DT) (Full BMDS HWIL Event) (System Ground Test)	2	2015	2	2015
GTI-06 (OT) (System Ground Test)	3	2015	3	2015
GTD-06 (DT) (System Ground Test)	4	2015	4	2015
GTD-06 (OT) (System Ground Test)	4	2015	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
PA-06 Performance Assessment 06	4	2015	4	2015
Warfighter TP 06 (System Ground Test)	2	2016	2	2016
FTG-06a (GM Intercept Test Flight)	1	2011	1	2011
JFTM-04 E1, E2, E3 (Aegis Simulated Intercept Flight Test)	1	2011	1	2011
USFT-4 (Arrow Intercept Test Flight)	1	2011	1	2011
Blue Sparrow-2 (Arrow Flight Test)	3	2011	3	2011
FTM-16 (Aegis Flight Test) E1(Simulated Intercept), E2 (Intercept)	4	2011	4	2011
FTP-04 (PATRIOT Flight Test)	2	2011	2	2011
FTX-11 (USAF Glory Trip 203 Flight Test)	4	2011	4	2011
FTX-17 (Air Launched Target Return to Flight - Flight Test)	3	2011	3	2011
FTM-15 (Aegis Flight Test)	3	2011	3	2011
FTT-12 (THAAD Intercept Flight Test)	4	2011	4	2011
AST-14 (Israeli Cooperative Intercept Flight Test)	2	2013	2	2013
FTM-19 E2 (Aegis Intercept Flight Test)	4	2012	4	2012
FTM-20 E2 (Aegis Intercept Flight Test)	1	2015	1	2015
FTG-08 (GMD Intercept Flight Test)	3	2014	3	2014
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013
FTM-26 (Aegis Intercept Flight Test)	3	2016	3	2016
FTT-11a (THAAD Flight Test)	4	2014	4	2014
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
FTX-10 (Cobra Dane Tracking Test)	3	2015	3	2015
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
AST-15 (Israeli Cooperative Intercept Flight Test)	1	2014	1	2014
FTM-19 E1 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
AACTV-01 E1, E2 (Aegis Ashore Flight Test)	2	2014	2	2014
AST-17 (Israeli Cooperative Intercept Flight Test)	1	2016	1	2016
AST-18 (Israeli Cooperative Intercept Flight Test)	4	2016	4	2016
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
FTG-13 (GM Intercept Flight Test)	4	2016	4	2016
FTG-15 (GM Intercept Flight Test)	4	2017	4	2017
FTG-17 (GM Intercept Flight Test)	4	2017	4	2017
FTM-16 E2a (Simulated Intercept Flight Test)	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-20 E2 (Aegis Simulated Intercept Flight Test)	1	2015	1	2015
FTM-30 (Aegis Intercept Flight Test)	3	2015	3	2015
FTP-06 (Patriot Flight Test)	4	2012	4	2012
FTP-07 (Patriot Flight Test)	4	2012	4	2012
FTP-08 (Patriot Flight Test)	4	2013	4	2013
FTX-19 (Aegis Simulated Endo-Engagement)	1	2015	1	2015
FTX-20 (Aegis Simulated Engagement)	1	2017	1	2017
FTM-20 E1 (Aegis Simulated Intercept Flight Test)	3	2014	3	2014
DMETS Training Event Upgrades Q1 FY11	1	2011	1	2011
DMETS Spiral 6.4 Global Engagement Manager (GEM) #2 Q1 FY11	1	2011	1	2011
Spiral 6.4C2 Testing FY11 Q1 - Q2	1	2011	2	2011
FTX-14 (Aegis Simulated Intercept Flight Test)	1	2014	1	2014
SCDPTV-1 (Aegis Flight Test)	1	2014	1	2014
AST-16 (Israeli Cooperative Intercept Flight Test)	1	2015	1	2015
SCDCTV-1 (Aegis Flight Test)	2	2015	2	2015
AAFTM-01 E1 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
AAFTM-02 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
SCDCTV-2 (Aegis Flight Test)	4	2015	4	2015
FTM-24 E1 (Aegis Intercept Flight Test)	4	2014	4	2014
FTM-25 E1, E2 (Aegis Intercept Test Flight)	1	2015	1	2015
SFTM-1 (Aegis Flight Test) E1(Simulated Intercept), E2 (Intercept)	3	2016	3	2016
SFTM-2 (Aegis Flight Test) E2 (Intercept)	1	2017	1	2017
FTO-02 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	2.996	2.841	3.201	-	3.201	2.741	2.707	2.700	2.835	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development Centers (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	2.996	2.841	3.201
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	2.996	2.841	3.201

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	PROJECT MD40: <i>Program-Wide Support</i>
<u>D. Acquisition Strategy</u> N/A		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603906C: <i>Regarding Trench</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	7.520	15.775	11.371	-	11.371	10.369	5.050	1.769	1.809	Continuing	Continuing
MD35: <i>Regarding Trench</i>	7.520	15.775	11.371	-	11.371	10.369	5.050	1.769	1.809	Continuing	Continuing

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 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	7.529	15.797	9.092	-	9.092
Current President's Budget	7.520	15.775	11.371	-	11.371
Total Adjustments	-0.009	-0.022	2.279	-	2.279
• Congressional General Reductions	-0.051	-0.022			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.042	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	2.279	-	2.279

Change Summary Explanation

FY 2011 adjustments include Congressional reduction (DoD and Full year continuing Appropriation Act, Public Law 112-10) and reflects realignment to DoD priorities.

FY 2013 adjustments reflect a funds realignment to DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603906C: <i>Regarding Trench</i>	PROJECT MD35: <i>Regarding Trench</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD35: <i>Regarding Trench</i>	7.520	15.775	11.371	-	11.371	10.369	5.050	1.769	1.809	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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

	FY 2011	FY 2012	FY 2013
Title: Regarding Trench	7.520	15.775	11.371
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: 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.			
FY 2012 Plans: 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.			
FY 2013 Plans: 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.			
Accomplishments/Planned Programs Subtotals	7.520	15.775	11.371

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

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603906C: <i>Regarding Trench</i>	PROJECT MD35: <i>Regarding Trench</i>

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	151.032	176.831	9.730	-	9.730	9.725	9.739	9.725	9.728	Continuing	Continuing
MD46: <i>Sea Based X-Band Radar (SBX) Development</i>	151.032	22.775	-	-	-	-	-	-	-	Continuing	Continuing
MX46: <i>Sea Based X-Band Radar Development Support</i>	-	146.800	9.236	-	9.236	9.235	9.264	9.246	9.236	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	7.256	0.494	-	0.494	0.490	0.475	0.479	0.492	Continuing	Continuing

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 Sea-Based X-Band Radar (SBX) is a powerful discrimination radar that augments the BMDS missile tracking sensor architecture as protection against sophisticated ICBM threats in the Pacific against the homeland. As a high-resolution X-Band radar, it provides valuable support to GMD flight tests.

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. From a test support site in the Pacific, SBX will maintain capability to support Ground-Based Midcourse Defense (GMD) testing requiring enhanced discrimination.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	153.056	177.058	172.622	-	172.622
Current President's Budget	151.032	176.831	9.730	-	9.730
Total Adjustments	-2.024	-0.227	-162.892	-	-162.892
• Congressional General Reductions	-1.051	-0.227			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.973	-			
• Other Adjustment	-	-	-162.892	-	-162.892

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

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

R-1 ITEM NOMENCLATURE
PE 0603907C: *Sea Based X-Band Radar (SBX)*

Change Summary Explanation

The FY 2011 decrease of \$2.024M reflects a congressional reduction (Department of Defense and Full Year Continuing Appropriation Act, Public Law 112-10) and a transfer of funds for SBIR/STTR support.

The FY 2012 decrease of \$0.227M reflects a congressional reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

The FY 2013 reduction of \$162.892M reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD46: <i>Sea Based X-Band Radar (SBX) Development</i>	151.032	22.775	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

Beginning in FY 2013, the Sea-Based X-Band Radar (SBX) will be placed in a limited test support status, recallable to active operational status when indications and warnings indicate need for enhanced discrimination.

A. Mission Description and Budget Item Justification

For FY 2011, this project provides for the operations and support of the Sea-Based X-Band (SBX) Radar and its four major sub-systems: the self-propelled vessel; the X-Band Radar (XBR); the In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT); and the communications network. Support activities also include vessel and portside force protection.

For FY 2012, this project provides for the development and sustainment of SBX software. Other operations and support activities described above are provided in budget project MX46.

For FY 2013 and beyond, SBX software development and sustainment will be stopped as a cost savings measure.

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

	FY 2011	FY 2012	FY 2013
Title: Vessel Operations and Support	102.460	-	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Added SBX to BMDS Operational Baseline			
-Achieved Capability Acceptance (CA) designation by STRATCOM			
-Continued ongoing operations, upgrades, and support of the SBX, the support vessel, and support facilities			
-Supported SBX logistics replenishment by support vessel for one quarter, then by helicopter or in-port provisions for the rest of the year			
-Executed in-port maintenance period for American Bureau of Shipping (ABS) certifications (thruster seals replacement), Navy Board of Inspections and Survey (INSURV) corrections and complete items necessary for Transition and Transfer to the Navy in 2011			
-Successfully supported GMD Intercept Flight Test FTG-06a as follows:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Verified and re-tested fixes directed by FTG-06 Failure Review Board (FRB)
 -Acquired target and sent track reports to GMD Fire Control
 -Transitioned to non-tactical mode to collect critical engagement conditions/empirical measurement events (CEC/EME) data for verification and validation of models and simulation
 -Continued to support operations of the Navy Transition Office (NTO)
 -Implemented Independent Readiness Review Team (IRRT) recommendations to facilitate Capability Acceptance (CA) designation by STRATCOM and transfer to Navy
 -Implemented the following reliability and suitability improvements:

-Added additional Inertial Measurement Unit (IMU) to XBR for on-line spare
 -In the X-Band Radar (XBR) Dual Sub Array Module, replaced integrated switching modules with lower failure-rate versions
 -Added XBR antenna redundant power source
 -Replaced diesel generator governors and changed control logic to prevent blackouts
 -Added redundant power for electrical generator control system
 -Replaced obsolete radar system controls
 -Added remote monitoring of XBR power and cooling systems

FY 2012 Plans:
 -For FY 2012 and beyond, these efforts are described in Project MX46.

FY 2013 Plans:
 N/A

Title: XBR Operations and Support	41.345	-	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Continued to operate and sustain the X-Band radar and associated equipment -Performed mission hardware upgrades and sustainment -Provided and supported operations crew -Completed Formal Qualification Testing (FQT) for Build 3.0 -Completed XBR upgrades during in-port period			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
-For FY 2012 and beyond, these efforts are described in Project MX46 below.				
FY 2013 Plans: N/A				
Title: SBX Communications Operations and Support		1.786	-	-
	Articles:	0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Continued round-the-clock sustainment for communications capabilities for Sea-Based X-Band radar (SBX) -Continued on-site SATCOM support of fielded sites for hardware and software -Continued sustaining engineering support and integrated logistics support for fielded hardware and software -Continued space segment lease.				
FY 2012 Plans: For FY 2012 and beyond, funds and plans are described in Program Element 0603896C, Budget Project MD01				
FY 2013 Plans: N/A				
Title: System Force Protection		5.441	-	-
	Articles:	0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Continued to provide on-board and portside force protection for the SBX and its off-shore support vessel -Provided force protection including patrol boats during Seattle in-port upgrade period				
FY 2012 Plans: -For FY 2012 and beyond, these efforts are described in Project MX46.				
FY 2013 Plans: N/A				
Title: SBX Software Development and Maintenance		-	22.775	-
	Articles:	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Description: See Description Below</p> <p>FY 2011 Accomplishments: For FY 2011, SBX software development and sustainment (\$13.8M) is included in the XBR Operations and Support accomplishment above.</p> <p>FY 2012 Plans: -Maintain SBX Build 3.1 configuration -Fix Level 1 and 2 BMDS Test Incident Reports (BTIR's) and Weapon System Test Reports (WSTR's)</p> <p>FY 2013 Plans: For FY 2013 and beyond, this work is stopped as a cost savings measure.</p>			
Accomplishments/Planned Programs Subtotals	151.032	22.775	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603891C: <i>Special Programs - MDA</i>	228.450	296.145	272.387		272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	55.351	41.174	55.550		55.550	53.139	53.718	59.291	60.540	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing

D. Acquisition Strategy

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.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBX Software Development and Maintenance Software Dev & Maintenance	SS/CPAF	Raytheon:MA	-	22.775	Dec 2011	-		-		-	40.845	63.620	79.726
Subtotal			-	22.775		-		-		-	40.845	63.620	79.726

Remarks
Software Development and Sustainment budgeted in FY 2011 in Sensors Program Element 0603884C Budget Project MD11.

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Vessel Operations and Support SBX Operations and Support (Vessel)	SS/CPAF	Boeing:AL/AK/AZ/CA/CO/TX/VA/HI	160.597	-		-		-		-	0.000	160.597	144.231
Vessel Operations and Support Fuel	SS/FFP	Boeing:AL/AK/AZ/CA/CO/TX/VA/HI	19.300	-		-		-		-	0.000	19.300	19.300
Vessel Operations and Support Vessel Voyage Repairs	SS/CPAF	Boeing:AL/AK/HI	16.650	-		-		-		-	0.000	16.650	16.650
Vessel Operations and Support Navy Transition Office	MIPR	US Navy:AL, NCR	15.565	-		-		-		-	0.000	15.565	16.065
Vessel Operations and Support ABS Certification	SS/CPAF	Boeing:AL	0.697	-		-		-		-	0.000	0.697	0.697
Vessel Operations and Support Pearl Harbor Spt: Pilot/Tug, Facilities, Helicopter	SS/FFP	COMNAVREG/ HI, NAVFAC/HI, Bluehahel:AK	0.089	-		-		-		-	0.000	0.089	0.089
XBR Operations and Support XBR Operations and Support	SS/CPAF	Raytheon:AL/AK/HI	75.600	-		-		-		-	0.000	75.600	65.247
XBR Operations and Support XBR SW upgrades/Maint.	SS/CPAF	Raytheon:MA	9.327	-		-		-		-	0.000	9.327	9.327

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBX Communications Operations and Support SBX Comms O&S	MIPR	DISA:VA	3.279	-		-		-		-	0.000	3.279	1.900
SBX Communications Operations and Support SBX Terminal Relocation	SS/CPAF	Boeing:AL	0.250	-		-		-		-	0.000	0.250	0.250
System Force Protection System Force Protection	SS/CPFF	Chenega:On Vessel/AK	16.600	-		-		-		-	0.000	16.600	14.403
Subtotal			317.954	-		-		-		-	0.000	317.954	288.159

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>			PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>					
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	317.954	22.775		-		-		-	40.845	381.574	367.885

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017							
	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 Intercept Flight Test FTG-06a																																
Aegis Flight Test FTM-15																																
ABS Certification and In-Port Period																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GMD Intercept Flight Test FTG-06a	1	2011	1	2011
Aegis Flight Test FTM-15	3	2011	3	2011
ABS Certification and In-Port Period	3	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MX46: <i>Sea Based X-Band Radar Development Support</i>	-	146.800	9.236	-	9.236	9.235	9.264	9.246	9.236	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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

This project provides for the operations and support of the Sea-Based X-Band (SBX) Radar and its four major sub-systems: the self-propelled vessel; the X-Band Radar (XBR); the In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT); and the communications network. Operations and support activities include operation and sustainment of the vessel, operation and sustainment of the X-Band Radar, improvements to reliability and suitability, and vessel and portside security.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Vessel Operations and Support</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: FY 2011 plans are described in Project MD46.</p> <p>FY 2012 Plans: -Continue ongoing operations, sustainment, and support of the SBX, the support vessel, and support facilities -Continue to support operations of the Navy Transition Office -Transition to Navy Contracts</p> <p>FY 2013 Plans: -Sustain the SBX in limited test support status</p>	<p>-</p> <p>0</p>	<p>109.884</p> <p>0</p>	<p>6.196</p> <p>0</p>
<p>Title: System Force Protection</p> <p align="right">Articles:</p> <p>Description: See Description Below</p>	<p>-</p> <p>0</p>	<p>4.742</p> <p>0</p>	<p>0.940</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> FY 2011 plans are described in Project MD46.			
<i>FY 2012 Plans:</i> -Continue to provide on-board and portside force protection for the SBX and its off-shore support vessel			
<i>FY 2013 Plans:</i> -Provide force protection for SBX in limited test support status			
<i>Title:</i> XBR Operations and Support	-	32.174	2.100
<i>Articles:</i>	0	0	0
<i>Description:</i> See Description Below			
<i>FY 2011 Accomplishments:</i> FY 2011 plans are described in Project MD46.			
<i>FY 2012 Plans:</i> -Continue to operate and sustain the X-Band radar and associated equipment -Sustain mission hardware -Provide and support operations crew -Implement reliability and suitability improvements			
<i>FY 2013 Plans:</i> -Sustain the X-Band Radar (XBR) in limited test support status			
Accomplishments/Planned Programs Subtotals	-	146.800	9.236

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,245.489	1,159.456	903.172		903.172	914.603	954.069	948.650	862.884	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603891C: <i>Special Programs - MDA</i>	228.450	296.145	272.387		272.387	321.450	345.263	354.503	348.602	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	55.351	41.174	55.550		55.550	53.139	53.718	59.291	60.540	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration & Operations Center (MDIOC)</i>	83.112	69.249	63.043		63.043	54.299	55.409	54.693	55.844	Continuing	Continuing

D. Acquisition Strategy

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.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Vessel Operations and Support SBX Operations & Support (Vessel)	C/FFP	IAS:HI/NJ	-	64.953	Nov 2011	2.512	Nov 2012	-		2.512	Continuing	Continuing	Continuing
Vessel Operations and Support Fuel	C/FFP	IAS:HI/NJ	-	18.968	Nov 2011	0.190	Nov 2012	-		0.190	Continuing	Continuing	Continuing
Vessel Operations and Support Vessel Voyage Repairs	C/FFP	IAS:HI/NJ	-	4.028	Nov 2011	2.760	Nov 2012	-		2.760	Continuing	Continuing	Continuing
Vessel Operations and Support Navy Transition Office	MIPR	US Navy:AL	-	5.424	Nov 2011	0.208	Nov 2012	-		0.208	Continuing	Continuing	Continuing
Vessel Operations and Support Vessel Mission Integration	C/FFP	TBD:AL/HI	-	16.511	Dec 2011	0.526	Nov 2012	-		0.526	Continuing	Continuing	Continuing
System Force Protection Force Protection	SS/CPFF	Chenega:On Vessel/AK	-	4.742	Mar 2012	0.940		-		0.940	Continuing	Continuing	Continuing
XBR Operations and Support XBR Operations & Support	SS/CPAF	Raytheon:AL/AK/HI	-	32.174	Nov 2011	2.100	Nov 2012	-		2.100	Continuing	Continuing	Continuing
Subtotal			-	146.800		9.236		-		9.236			

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals		-		146.800		9.236		9.236			

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Navy Transition (60 days)					▲																							
GMD Intercept Flight Test (FTG-06b)								○																				
FY 2014 GM Intercept Flight Test																○												
FY 2015 GM SALVO Intercept Flight Test																				○								
FY 2016 GM Intercept Flight Test																								○				
FY 2017 GM Intercept Flight Test																												○

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Navy Transition (60 days)	1	2012	1	2012
GMD Intercept Flight Test (FTG-06b)	4	2012	4	2012
FY 2014 GM Intercept Flight Test	4	2014	4	2014
FY 2015 GM SALVO Intercept Flight Test	4	2015	4	2015
FY 2016 GM Intercept Flight Test	4	2016	4	2016
FY 2017 GM Intercept Flight Test	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	7.256	0.494	-	0.494	0.490	0.475	0.479	0.492	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY2013, Program Wide Support reflects a proportional decrease as a result of decreases 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 MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	7.256	0.494
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	-	7.256	0.494

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	209.048	235.700	99.836	-	99.836	95.782	96.803	103.940	106.020	Continuing	Continuing
MD20: <i>Israeli Upper Tier</i>	58.667	66.220	50.892	-	50.892	52.607	54.368	55.660	56.773	Continuing	Continuing
MD26: <i>Israeli ARROW Program</i>	66.089	58.955	10.665	-	10.665	10.663	10.701	11.142	11.365	Continuing	Continuing
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	84.292	110.525	38.279	-	38.279	32.512	31.734	37.138	37.882	Continuing	Continuing

Note

Content supports expected matching contributions from Israel per international agreements, and historical-based supplemental funding provided by Israel Ministry of Defense (IMOD). Israeli proposed program content that has no US or Israeli funds are not included in this budget exhibit.

FY 2011 appropriation increased the FY 2011 Israeli Program Budget by \$7.133M in MD20, \$42.180M in MD26 and \$38.000M in MD34.

FY 2012 appropriation increased the FY 2012 Israeli Program Budget by \$13.000M in MD20, \$47.200M in MD26 and \$69.400M in MD34.

A. Mission Description and Budget Item Justification

Since 1986, the United States and the State of Israel have cooperated on missile defense. MDA has three significant initiatives with Israel to develop and improve their indigenous capability to defend against short and medium range ballistic missiles. These include the Arrow Weapon System (AWS), the David's Sling Weapon System (DSWS) for Short Range Ballistic Missile Defense (SRBMD) and a new Arrow-3 Interceptor. Within the AWS Project MDA develops, tests and exercises interoperability between U.S. BMDS and the Israeli Missile Defense Architecture.

System Element Description:

U.S.-Israel Cooperative Programs consist of the following major efforts:

Israeli Upper Tier Project (UTI) (MD20):

The UTI Program, which provides a new Arrow 3 missile that increases the system's capability against advanced threats by providing approximately four times the current Arrow-2 battle space, has developed detailed Knowledge Points to assess Israel's development progress. MDA and the Israeli Ministry of Defense continue to implement practices that allow for the more effective use of program management tools to ensure risk is adequately managed. The primary near term objective for UTI is to demonstrate readiness for a Low Rate Initial Production (LRIP) in FY 2014 through successful flight testing

Israeli Arrow Weapon System (AWS) (MD26):

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>
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The Arrow System Improvement Program (ASIP) includes block upgrades to the Arrow Weapon System that enhances capabilities against more stressing evolving regional 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 GP Radars, and the Hazelnut Tree Launcher Control Center (LCC). The program also includes the development of Arrow co-manufacturing capability, co-production of the interceptor and 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 2020 Israel missile defense architecture. The ASIP Agreement concludes in 2016.

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 serve as a lower-tier to the Arrow Weapon System. The first fielded block capability will perform the short range rocket and missile defense mission. Subsequent blocks will address a cruise missile defense capability per 2010 Congressional direction. DSWS Elements include the Stunner Interceptor, Missile Firing Unit (MFU), Multi-Mission Radar (MMR), and the Golden Almond Battle Management Center (BMC). The primary near term objective for DSWS is to demonstrate readiness for a Low Rate Initial Production (LRIP) in FY2012 through successful flight testing.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	121.735	106.100	99.873	-	99.873
Current President's Budget	209.048	235.700	99.836	-	99.836
Total Adjustments	87.313	129.600	-0.037	-	-0.037
• Congressional General Reductions	-1.067	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	88.200	129.600			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.180	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	-0.037	-	-0.037

Change Summary Explanation

FY 2011 adjustment reflects a Congressional reductions and increases (DoD and Full Year Continuing Appropriation Act, FY 2011, Public Law 112-10).

FY 2012 adjustment reflects a Congressional increase (DoD and Full Year Continuing Appropriation Act, FY 2012, Public Law 112-74).

FY 2013 reflects realignments for other DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD20: <i>Israeli Upper Tier</i>	58.667	66.220	50.892	-	50.892	52.607	54.368	55.660	56.773	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

This project code encompasses MDA's U.S.-Israeli cooperative programs 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, initial lot production, and integration with the Block 5 AWS. In addition to the geo-strategic goals of the Upper Tier cooperative effort, the United States derives technical benefit from its participation in these projects and gains knowledge and experience of the Israeli Defense Forces operation of a multi-layered defense architecture. This project also includes the development of the Silver Sparrow Air-Launched Target which is necessary to validate the performance of the Arrow 3 Missile.

The Upper-Tier Interceptor Project Agreement was signed in 2010. This agreement states that the project will be jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. The agreement also documents the U.S.-Israeli cost share, in which the development costs will be equitable between the U.S. and Israel, with Israel providing matching contributions.

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

	FY 2011	FY 2012	FY 2013
Title: Upper Tier	58.667	66.220	50.892
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Completed detailed propulsion, seeker hardware and avionics demonstrations enabling progress to Critical Design Review.			
-Developed preliminary design for Arrow-3 integration into the Block 5 Arrow Weapon System so they are interoperable.			
FY 2012 Plans:			
-Conduct 3 Element Level Knowledge Point demonstrations to provide critical data to assess viability of component design.			
-Demonstrate seeker functional capability and system performance.			
-Conduct first interceptor fly-out test of the Arrow-3 Interceptor.			
-Conduct software Critical Design Review to finalize tactical system software.			
-Conduct target fly-out test.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Perform Static Fire Test for Booster and Kill Vehicle. -Conduct Long Range Target Wind Tunnel Test. -Conduct Critical Design Review. <p><i>FY 2013 Plans:</i></p> <ul style="list-style-type: none"> -Conduct 2 Element Level Knowledge Point demonstrations to provide critical data to assess viability of component design. -Conduct second interceptor fly-out test of the Arrow-3 Interceptor. -Complete data reduction and analysis for the second interceptor fly-out test of the Arrow-3 Interceptor. -Conduct algorithm design review for Intercept Test #1 to verify requirements. -Conduct Long Range Target fly out for validation. -Complete Production Readiness Review for Initial Lot Production. 			
Accomplishments/Planned Programs Subtotals	58.667	66.220	50.892

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

N/A

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Upper Tier Project does not follow standard DoD Acquisition Practices. The Upper-Tier Interceptor Project Agreement under the RDT&E Framework agreement between the U.S. and Israel creates a joint program office to manage this program. This agreement allows Israel to contract on behalf of the United States. The DoD U.S. Israeli Cooperative Program Office jointly manages the Upper Tier program with Israel Ministry of Defense (IMoD) to ensure that all systems are delivered on time, on budget and meet the needs of the warfighter. Program funding is equitable between the U.S. and Israel with Israel providing matching contributions. A portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. With the Upper Tier Interceptor, IMoD will contract to Israel Aerospace Industries (IAI). IAI subcontracts to Israeli and U.S. companies such as Boeing.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Upper Tier Upper Tier	C/CPFF	Israel Aerospace Industries (IAI):Israel	109.984	66.220	Mar 2012	50.892	Mar 2013	-		50.892	Continuing	Continuing	Continuing
Subtotal			109.984	66.220		50.892		-		50.892			

Remarks
Prior years cost is for FY 2010 and FY 2011

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

Remarks
N/A

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

Remarks
N/A

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	109.984	66.220		50.892		-		50.892			

Remarks
Contract cost reflect U.S. contribution only.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 2012					☆	☆	☆	☆																				
Arrow-3 Software Critical Design Review (CDR)					☆	☆	☆	☆																				
Arrow-3 Production Readiness Review (PRR)									☆	☆	☆	☆																
Complete Data Reduction and Analysis of Fly-Out									☆	☆	☆	☆																
Israeli Cooperative Intercept Flight Test - FY 2013									☆	☆	☆	☆																
Israeli Cooperative Intercept Flight Test - FY 2014													☆	☆	☆	☆												
Israeli Cooperative Intercept Flight Test - FY 2015																	☆	☆	☆	☆								
Israeli Cooperative Intercept Flight Test - FY 2016																					☆	☆	☆	☆				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Israeli Cooperative Intercept Flight Test - FY 2012	1	2012	4	2012
Arrow-3 Software Critical Design Review (CDR)	1	2012	4	2012
Arrow-3 Production Readiness Review (PRR)	1	2013	4	2013
Complete Data Reduction and Analysis of Fly-Out	1	2013	4	2013
Israeli Cooperative Intercept Flight Test - FY 2013	1	2013	4	2013
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
Israeli Cooperative Intercept Flight Test - FY 2015	1	2015	4	2015
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD26: <i>Israeli ARROW Program</i>	66.089	58.955	10.665	-	10.665	10.663	10.701	11.142	11.365	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

This project provides funding for Arrow Weapon System (AWS) development, to include the Arrow System Improvement Program (ASIP), the Arrow Missile Production Program (AMPP) for the co-production of Arrow Interceptors, the Israeli Test Bed (ITB) experiments to evaluate Human-In-The-Loop (HIL) battle management, and the Israeli Systems Architecture and Integration (ISA&I) studies to assess Israel's future 2020 Missile Defense Architecture. 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 GP Radars, and the Hazelnut Tree Launcher Control Center (LCC). Testing of the enhanced AWS in the U.S. against U.S. targets is planned to verify Arrow's improved performance and capability. The ASIP also ensures AWS interoperability via Joint Tactical Information Data System (JTIDS) Link-16 common communication architecture with the U.S. BMDS elements such as Terminal High Altitude Area Defense (THAAD), AEGIS, Command, Control, Battle Management and Communications (C2BMC), AN/TPY-2, and PATRIOT through ground tests, flight tests, and operational exercises. Co-production will continue increased production capacity of the Arrow II interceptor. 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 2011	FY 2012	FY 2013
Title: Arrow System Improvement Program	47.754	52.593	4.303
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Conducted AWS Block 5.0 System Requirements Review (SRR) to finalize system requirements enabling initiation of system design.			
-Conducted AWS Block 4.0 flight test in the U.S., destroying a Foreign Military Asset target in flight and proved system functionality.			
FY 2012 Plans:			
-Conduct AWS Block 5.0 Critical Design Review to finalize design.			
-Conduct Block 5 Battle Management Center Systems Requirements Review.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conduct Airborne Ballistic Early Warning System Preliminary Design Review. -Conduct AWS Block 4.0 flight test in Israel. -Conduct AWS Block 4 Initial Operations Capability Validation. -Conduct Silver Oak Preliminary Design Review. -Expand AWS-BMDS integration (with AN/TPY-2, C2BMC, and Aegis) and demonstrate performance in U.S. BMDS ground test, GTI-04 (ISR). -Develop/Finalize Version 2 Software-Adds Seeker Capability. -Conduct Block 5 Preliminary Design Review. -Complete Software development for Tactical Debriefing Center (TDC). <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete data reduction and analysis for the intercept flight test in Israel to validate models and simulations. -Conduct interoperability ground test with U.S. BMDS. 				
<p>Title: Arrow Missile Production Program (AMPP)</p> <p>Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Continued delivery of Arrow II interceptors expending the final U.S. contribution for this effort. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Complete delivery of Arrow II interceptors using Israeli funding. <p>FY 2013 Plans:</p> <p>Project task completed in FY 2012.</p> <p>Variance Analysis: FY 2012 budget decreased from FY2011 due to project task completion in FY 2012 using Israeli funding.</p>		12.000 0	- 0	- 0
<p>Title: Israeli Test Bed (ITB)</p> <p>Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Conducted HIL experiment on regional defense concepts on placement of batteries, radars and battle management centers. 		3.535 0	3.535 0	3.535 0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Conducted HIL experiment on integrated air and missile defense including integration of external sensors and battle management evaluation to determine requirements for future systems.</p> <p>-Conducted experiment on potential future architecture enhancements that determine requirements for future systems.</p> <p>-Conducted exercise with warfighters that refined Tactics, Techniques & Procedures (TTP) and Concept of Operations (CONOPs).</p> <p>FY 2012 Plans:</p> <p>-Conduct HIL experiment on regional defense concepts.</p> <p>-Conduct HIL experiment on affect of new mission capabilities on integrated air and missile defense.</p> <p>-Conduct experiment on potential future architecture enhancements.</p> <p>-Conduct exercise with warfighters to further refine TTPs and CONOPs.</p> <p>FY 2013 Plans:</p> <p>-Conduct HIL experiment on regional defense concepts.</p> <p>-Conduct HIL experiment Arrow 2/3 and related Block 5 Integration including integration of external sensors and battle management.</p>				
<p>Title: Israeli Systems Architecture and Integration (ISA&I)</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-Developed and assessed activities for regional defense, missile systems performance issues, and interoperability, special studies related to time period up to 2020 that created the ground work for future Israeli missile defense architectures.</p> <p>FY 2012 Plans:</p> <p>-U.S.- Israeli operational exercise design and assessment, and interoperability special studies on regional threats and growth path options.</p> <p>FY 2013 Plans:</p> <p>-U.S.- Israeli operational exercise design and assessment, and interoperability special studies on regional threats and growth path options.</p>		<p>Articles:</p> <p>2.800 0</p>	<p>2.827 0</p>	<p>2.827 0</p>
Accomplishments/Planned Programs Subtotals		66.089	58.955	10.665
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Arrow Program does not follow standard DoD Acquisition Practices. The DoD U.S. Israeli Cooperative Program Office jointly manages the Arrow Program with Israel Ministry of Defense (IMoD) to ensure that all systems are delivered with quality on time, on budget and meet the needs of the warfighter. Program funding is equitable 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. With ASIP, IMoD contracts on behalf of U.S. government to Israel Aerospace Industries (IAI). IAI subcontracts to Israeli and U.S. companies such as Boeing. MDA Targets Office contracts for production and instrumentation of targets for flight testing conducted in the U.S. Additionally with Arrow Missile Production, IMoD contracts on behalf of U.S. government to IAI, who subcontracts to Boeing for manufacture of components in the U.S. IAI manufactures Israeli components and performs final assembly. For the Israeli Test Bed, MDA contracts directly with Tadiran while IMoD provides an equitable share of the funding to 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Arrow System Improvement Program Arrow System Improvement Program (ASIP)	C/CPFF	Israel Aerospace Industries (IAI):Israel	88.912	52.593	Jul 2012	4.303	Jun 2013	-		4.303	Continuing	Continuing	Continuing
Arrow Missile Production Program (AMPP) Arrow Missile Production	C/FFP	Israel Aerospace Industries (IAI) & Boeing:Israel & Alabama	36.486	-		-		-		-	0.000	36.486	0.000
Israeli Test Bed (ITB) Israeli Test Bed	C/FFP	Israel Aerospace Industries (IAI) & Boeing:Israel & Alabama	7.070	3.535	Oct 2011	3.535	Oct 2012	-		3.535	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) ISA&I	C/FFP	Wales LTD:Israel	5.751	2.827	Oct 2011	2.827	Oct 2012	-		2.827	Continuing	Continuing	Continuing
Subtotal			138.219	58.955		10.665		-		10.665			

Remarks
Prior years cost is for FY 2010 and FY 2011

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

Remarks
N/A

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals		138.219		58.955		10.665		-		10.665	

Remarks
Contract cost reflect U.S. contribution only.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
AWS Block 4.0 flight test in the U.S.	+	+	+	+																								
Arrow Weapon System Block 5.0 System Requirements Review	+	+	+	+																								
Three Israeli Test Bed Experiments FY 2011	+	+	+	+																								
Israeli Test Bed Exercise FY 2011	+	+	+	+																								
Target fly-out flight test in Israel FY 2012					◆	◆	◆	◆																				
Arrow Weapon System Block 5.0 Preliminary Design Review					◆	◆	◆	◆																				
GTI-04 (ISR) - ASIP event in FY 2012					◆	◆	◆	◆																				
Three Israeli Test Bed Experiments FY 2012					◆	◆	◆	◆																				
Israeli Test Bed Exercise FY 2012					◆	◆	◆	◆																				
Arrow Weapon System Block 5.0 Critical Design Review					◆	◆	◆	◆																				
Interoperability Test FY 2012					◆	◆	◆	◆																				
Three Israeli Test Bed Experiments FY 2013									◆	◆	◆	◆																
Israeli Test Bed Exercise FY 2013									◆	◆	◆	◆																
Three Israeli Test Bed Experiment FY 2014													◆	◆	◆	◆												
Israeli Test Bed Exercise FY 2014													◆	◆	◆	◆												
Interoperability Test FY 2014													◆	◆	◆	◆												
Three Israeli Test Bed Experiments FY 2015																	◆	◆	◆	◆								
Israeli Test Bed Exercise FY 2015																	◆	◆	◆	◆								
Arrow Intercept Flight Test - FY 2015(1)																	◆	◆	◆	◆								
Arrow Intercept Flight Test - FY 2015(2)																	◆	◆	◆	◆								
Three Israeli Test Bed Experiments FY 2016																					◆	◆	◆	◆				
Israeli Test Bed Exercise FY 2016																					◆	◆	◆	◆				
Three Israeli Test Bed Experiments FY 2017																									◆	◆	◆	◆
Israeli Test Bed Exercise FY 2017																									◆	◆	◆	◆

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AWS Block 4.0 flight test in the U.S.	1	2011	4	2011
Arrow Weapon System Block 5.0 System Requirements Review	1	2011	4	2011
Three Israeli Test Bed Experiments FY 2011	1	2011	4	2011
Israeli Test Bed Exercise FY 2011	1	2011	4	2011
Target fly-out flight test in Israel FY 2012	1	2012	4	2012
Arrow Weapon System Block 5.0 Preliminary Design Review	1	2012	4	2012
GTI-04 (ISR) - ASIP event in FY 2012	1	2012	4	2012
Three Israeli Test Bed Experiments FY 2012	1	2012	4	2012
Israeli Test Bed Exercise FY 2012	1	2012	4	2012
Arrow Weapon System Block 5.0 Critical Design Review	1	2012	4	2012
Interoperability Test FY 2012	1	2012	4	2012
Three Israeli Test Bed Experiments FY 2013	1	2013	4	2013
Israeli Test Bed Exercise FY 2013	1	2013	4	2013
Three Israeli Test Bed Experiment FY 2014	1	2014	4	2014
Israeli Test Bed Exercise FY 2014	1	2014	4	2014
Interoperability Test FY 2014	1	2014	4	2014
Three Israeli Test Bed Experiments FY 2015	1	2015	4	2015
Israeli Test Bed Exercise FY 2015	1	2015	4	2015
Arrow Intercept Flight Test - FY 2015(1)	1	2015	4	2015
Arrow Intercept Flight Test - FY 2015(2)	1	2015	4	2015
Three Israeli Test Bed Experiments FY 2016	1	2016	4	2016
Israeli Test Bed Exercise FY 2016	1	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Three Israeli Test Bed Experiments FY 2017	1	2017	4	2017
Israeli Test Bed Exercise FY 2017	1	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	84.292	110.525	38.279	-	38.279	32.512	31.734	37.138	37.882	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

The 2006 summer conflict between Israel and Hezbollah underscored the strategic effect of short-range, inexpensive ballistic missiles attacks on civilian populations. The current Israeli Missile Defense Architecture (comprised of Patriot and Arrow) has capability against some of these short-range missile threats, but does not provide a cost-effective defense. The goal of the Israeli Short Range Ballistic Missile Defense (SRBMD) program is to provide an affordable defense capability. In March 2005, the U.S. and Israel initiated a joint 18-month feasibility study of a low-cost SRBMD capability as a complement to the Arrow Weapon System. This was followed in May 2006 by Israeli's down-selection to the David's Sling Weapon System (DSWS) for their SRBMD solution. The system is to be developed in blocks with the initial block providing a baseline capability against large caliber rockets and short range ballistic missiles. The DSWS is comprised of the Stunner Interceptor, Battle Management Center and the integration of the Multi-Mission Radar, and the Missile Firing Unit.

Under the U.S.-Israeli Project Agreement signed in September 2008, the project is jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. The agreement documents the U.S.-Israeli cost share, in which the development costs are equitable between the U.S. and Israel with Israel providing matching contributions. However a portion of the Israeli cost share is from previously completed work per our international agreements.

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

	FY 2011	FY 2012	FY 2013
Title: SRBMD Program	84.292	110.525	38.279
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Conducted Radar Field Test #1 to assess initial radar acquisition and track capability.			
-Conducted final Block 1 Critical Design Review which enabled production of test articles and software.			
-Completed Block 1 performance analysis studies to finalize assessment of capability to meet performance requirements.			
-Conducted two interceptor controlled navigation fly-out flight tests that verified aerodynamic performance and control capability which solidified some sub-system designs for a Low Rate Initial Production (LRIP) decision.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conduct Safe Separation Test 1.1 with production representative canister. -Conduct one Block One System Interception Test. -Conduct one Block One System Fly-by Test. -Complete 3 Knowledge Points to provide critical data to assess viability of subsystem and system designs. -Conduct Lower Tier BMC development System Readiness Review and Preliminary Design Review. -Initiate Block 2 development efforts through System Readiness Review and initial Preliminary Design Review. -Conduct Production Readiness Review and Procure Long Lead Items for Initial Lot Production. -Initiate Stunner Qualification Testing. -Conduct Seeker Critical Design Review. -EO Seeker hardware and software testing in a closed and open loop. -Finalize initial Stunner flight control algorithms for Block One. -Conduct Radar Field Test #2 and #3 to assess radar acquisition and track capability. <p><i>FY 2013 Plans:</i></p> <ul style="list-style-type: none"> -Complete data analysis of intercept test to validate Block 1 functionality. -Complete 2 Knowledge Points which provide critical data to assess viability of subsystem and system design and intercept cost. -Complete Block 2 Critical Design Review which expands the DSWS threat set. -Continue Block 3 Development which enables the engagement of an expanded threat set and expands the battle space by 300 percent. -Evaluate Field Test #3 against model and simulation expectations and Technical Performance Measurements. 			
Accomplishments/Planned Programs Subtotals	84.292	110.525	38.279

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

N/A

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the SRBMD program does not follow standard DoD Acquisition Practices. The DoD U.S. Israeli Cooperative Program Office jointly manages the SRBMD program with IMoD to ensure that all systems are delivered with on time, on budget and meet the needs of the warfighter. The DSWS Project Agreement allows Israel to contract on behalf of the United States. For the Stunner Interceptor, Rafael, an Israeli company, subcontracts to Raytheon Missile Systems for certain interceptor components.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SRBMD Program SRBMD Program	C/CPFF	Rafael:Israel	156.547	110.525	Mar 2012	38.279	Mar 2013	-		38.279	Continuing	Continuing	Continuing
Subtotal			156.547	110.525		38.279		-		38.279			

Remarks
Prior years cost is for FY 2010 and FY 2011

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

Remarks
N/A

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

Remarks
N/A

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	156.547	110.525		38.279		-		38.279			

Remarks
Contract cost reflect U.S. contribution only.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Block 1, V1B Critical Design Review	+	+	+	+																								
Stunner Interceptor Fly-out #1.2 FY 2011	+	+	+	+																								
Stunner Interceptor Fly-out #2 FY 2011	+	+	+	+																								
Block 1, V2 Critical Design Review	+	+	+	+																								
Radar Field Test FY 2011	+	+	+	+																								
Interceptor Flight Test FY 2012 #1					☆	☆	☆	☆																				
Interceptor Flight Test FY 2012 #2					☆	☆	☆	☆																				
Block 2.0 Preliminary Design Review					☆	☆	☆	☆																				
Block 3.0 Preliminary Design Review					☆	☆	☆	☆																				
Production Readiness Review					☆	☆	☆	☆																				
Block 1, V3 Critical Design Review					☆	☆	☆	☆																				
Radar Field Test #2 and #3 FY 2012					☆	☆	☆	☆																				
System Flight Test #3 FY 2013								☆	☆	☆	☆																	
System Flight Test #4 FY 2013								☆	☆	☆	☆																	
Block 2 Critical Design Review								☆	☆	☆	☆																	
Block 3 Critical Design Review												☆	☆	☆	☆													
System Flight Test #5 FY 2014												☆	☆	☆	☆													
System Flight Test #6 FY 2014												☆	☆	☆	☆													
System Flight Test #7 FY 2014												☆	☆	☆	☆													
System Flight Test #8 FY 2015															☆	☆	☆	☆										
System Flight Test #9 FY 2016																			☆	☆	☆	☆						
System Flight Test #10 FY 2016																			☆	☆	☆	☆						

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 1, V1B Critical Design Review	1	2011	4	2011
Stunner Interceptor Fly-out #1.2 FY 2011	1	2011	4	2011
Stunner Interceptor Fly-out #2 FY 2011	1	2011	4	2011
Block 1, V2 Critical Design Review	1	2011	4	2011
Radar Field Test FY 2011	1	2011	4	2011
Interceptor Flight Test FY 2012 #1	1	2012	4	2012
Interceptor Flight Test FY 2012 #2	1	2012	4	2012
Block 2.0 Preliminary Design Review	1	2012	4	2012
Block 3.0 Preliminary Design Review	1	2012	4	2012
Production Readiness Review	1	2012	4	2012
Block 1, V3 Critical Design Review	1	2012	4	2012
Radar Field Test #2 and #3 FY 2012	1	2012	4	2012
System Flight Test #3 FY 2013	1	2013	4	2013
System Flight Test #4 FY 2013	1	2013	4	2013
Block 2 Critical Design Review	1	2013	4	2013
Block 3 Critical Design Review	1	2014	4	2014
System Flight Test #5 FY 2014	1	2014	4	2014
System Flight Test #6 FY 2014	1	2014	4	2014
System Flight Test #7 FY 2014	1	2014	4	2014
System Flight Test #8 FY 2015	1	2015	4	2015
System Flight Test #9 FY 2016	1	2016	4	2016
System Flight Test #10 FY 2016	1	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	487.699	454.400	-	454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
MT04: <i>BMDS Test Program</i>	-	455.310	431.847	-	431.847	402.236	428.299	358.786	404.119	Continuing	Continuing
MX04: <i>BMD Test Development Support</i>	-	32.389	-	-	-	-	-	-	-	0.000	32.389
MD40: <i>Program Wide Support</i>	-	-	22.553	-	22.553	18.121	18.243	14.609	17.513	Continuing	Continuing

Note

BMD Test Program, Budget Project MT04, was previously captured in PE 0603888C BMD Test and Targets (Budget Project MD04).

BMD Test Development Support, Budget Project MX04, was captured in PE 0603896C (Budget Project MD01 for FY 2011 and Budget Project MX01 in FY 2013)

Program Wide Support, Budget Project MD40, was previously captured in PE 0603888C BMD Test and Targets (Budget Project MD40) for FY 2011 and PE 0603890C BMD Enabling (Budget Project MD40) for FY 2012. Starting in FY 2013, a portion of Program Wide Support (Budget Project MD40) transfers in from BMD Test and Targets PE 0603888C (Budget Project MD40).

A. Mission Description and Budget Item Justification

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

BMDS Test Program Functions:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>
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- Directs the testing required to verify, validate, and accredit (VV&A) MDA`s models and simulation (M&S).
- Plans tests according to BMDS and Element objectives.
- Develops MDA test policy.
- Executes BMDS ground and flight tests.
- Ensures appropriate data is collected at the necessary fidelity.
- Collects data for BMDS analysis and manages MDA data centers.
- Provides BMDS and Element performance results for IMTP stakeholders.
- Provides final target system integration, target mission logistics and launch execution for BMDS test target systems.
- Provides test infrastructure and resources for flight and ground tests.

Major Test Program Goals:

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

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	487.699	454.400	-	454.400
Total Adjustments	-	487.699	454.400	-	454.400
• Congressional General Reductions	-	-0.683			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	488.382			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	454.400	-	454.400

Change Summary Explanation

FY 2012 reflects congressional transfer from PE 0603888C (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

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

R-1 ITEM NOMENCLATURE
PE 0603914C: *Ballistic Missile Defense Test*

FY 2013 increase of \$22.553 million dollars reflects the transfer of Program Wide Support from BMD Test and Targets PE 0603888C (Budget Project MD40) per the Congressional Appropriation Act of FY 2012 (Public Law 112-74).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT04: <i>BMDS Test Program</i>	-	455.310	431.847	-	431.847	402.236	428.299	358.786	404.119	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

Previously in PE 0603888C BMDS Test and Targets (Budget Project MD04).

A. Mission Description and Budget Item Justification

The Test Program provides consolidated Missile Defense Agency (MDA) capabilities and resources to support the management and execution of Ballistic Missile Defense System (BMDS) and Element-level testing. With the evolution of the BMDS, testing requirements have expanded beyond those of the individual Elements to include testing of BMDS Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) to enable Independent Verification and Validation (IV&V) of modeling and simulations (M&S).

The MDA Test Program is responsible for all BMDS testing and relies on BMDS Systems Engineering to provide the system test objectives to define the test architecture by developing, updating, coordinating, and assessing the Integrated Master Test Plan (IMTP). The MDA Test Program plans and executes BMDS test events and develops the necessary test policy, test plans, and test infrastructure to conduct an effective test program. The goals of this budgetary objective are 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 2011	FY 2012	FY 2013
Title: Program Planning and Operations	-	116.937	115.295
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Previously in PE 0603888C BMDS Test and Targets (Budget Project MD04).			
FY 2012 Plans: -Develop, update, and coordinate the Integrated Master Test Plan (IMTP). -Identify and resolve Operational Test Agency (OTA) issues. -Update and maintain the classified Test Resources Mission Planning Tool (TRMP-T) data base.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Develop and maintain hardware and software to support Truth Data Requirements Documents, Truth Data Packages, Integrated Data Management Plans (IDMPs), Data Handling Plans (DHPs), Information Assurance (IA) documentation , on-site truth-quick-look product development, and data planning and management; library operations; test planning and resource de-confliction; test operations support; and pre- and post-test analysis.</p> <p>-Manage the MDA Data Center Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services.</p> <p>-Perform as Information Assurance (IA) manager for test data management networks and infrastructure.</p> <p>-Develop and implement test policy, standards, directives, and procedures for creating unified BMD test processes.</p> <p>-Coordinate budget planning and execution activities as well as manpower activities.</p> <p>FY 2013 Plans:</p> <p>-Develop, update, and coordinate the Integrated Master Test Plan (IMTP).</p> <p>-Identify and resolve Operational Test Agency (OTA) issues.</p> <p>-Update and maintain the classified Test Resources Mission Planning Tool (TRMP-T) data base.</p> <p>-Develop and maintain hardware and software to support Truth Data Requirements Documents, Truth Data Packages, Integrated Data Management Plans (IDMPs), Data Handling Plans (DHPs), Information Assurance (IA) documentation , on-site truth-quick-look product development, and data planning and management; library operations; test planning and resource de-confliction; test operations support; and pre- and post-test analysis.</p> <p>-Manage the MDA Data Center Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services.</p> <p>-Perform as Information Assurance (IA) manager for test data management networks and infrastructure.</p> <p>-Develop and implement test policy, standards, directives, and procedures for creating unified BMD test processes.</p> <p>-Coordinate budget planning and execution activities as well as manpower activities.</p>			
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Title: Flight Test	-	116.407	86.397
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:
Previously in PE 0603888C BMDS Test and Targets (Budget Project MD04).

FY 2012 Plans:
-Complete test planning for BMDS Flight Test events as shown in Exhibit R-4 Schedule.
-Identify and execute focused investments in the BMDS test infrastructure.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>		PROJECT MT04: <i>BMDS Test Program</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Conduct mission planning and range coordination activities, execute target missions, collect and analyze target system data, provide communications security equipment and management. -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. -Identify, monitor and develop burn down plans for target system mission risks for all FY2013 BMDS missions as defined in the IMTP. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete test planning for BMDS Flight Test events as shown in Exhibit R-4 Schedule. -Identify and execute focused investments in the BMDS test infrastructure. -Conduct mission planning and range coordination activities, execute target missions, collect and analyze target system data, provide communications security equipment and management. -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. -Identify, monitor and develop burn down plans for target system mission risks for all FY2013 BMDS missions as defined in the IMTP. 						
<p>Title: Ground Test</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Previously in PE 0603888C BMDS Test and Targets (Budget Project MD04).</p> <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Complete test planning for BMDS Ground Test events in the Exhibit R-4 schedule. -Complete hardware and software benchmark testing and truth driver and framework integration for GTI-04e (BMDS Integrated Ground Test). -Continue development of a dedicated regional test bed and communication nodes -Deliver system-level and test specific execution, mission assurance, logistics execution, communications support, and test equipment. -Deliver ground test planning designs, scenarios, feasibility assessments, test architectures, and test configurations. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete test planning for BMDS Ground Test events in the Exhibit R-4 schedule. 				-	24.001	21.890
				0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>		PROJECT MT04: <i>BMDS Test Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Complete hardware and software benchmark testing and truth driver and framework integration for GTI-04e (BMDS Integrated Ground Test). -Continue development of a dedicated regional test bed and communication nodes -Deliver system-level and test specific execution, mission assurance, logistics execution, communications support, and test equipment. -Deliver ground test planning designs, scenarios, feasibility assessments, test architectures, and test configurations. 				
<p>Title: Test Resources</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: Previously in PE 0603888C BMDS Test and Targets (Budget Project MD04).</p> <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Develop, maintain, and upgrade as needed MDA unique range facilities and instrumentation. -Support all MDA-sponsored BMDS flight and ground testing conducted in FY 2012 with the full complement of ranges and test infrastructure assets. -Test Resource Managers (TRMs) will continue to complement test execution teams by overseeing scheduling, funding, and management of test resource assets. -The Pacific Range Support Team will continue to provide efficient planning, coordination, and management of range resources and infrastructure for BMDS Flight Testing throughout the Pacific Test Bed. -Maintain and upgrade MDA unique ground test facilities to support all BMDS developmental program hardware and software testing. These facilities provide hardware in the loop (HWIL) capability, threat signature measurement capability, and sensor calibration standards. -Maintain and upgrade MDA unique ground test facilities to support Ballistic Missile Defense System (BMDS) level ground tests, including basic ground test control as well as some Element representations. -Continue development of a second suite of HWIL equipment including the acquisition of additional hardware and digital element representations to support concurrent ground testing of current BMDS capability and that under development. -Add hardware and digital element representations to support expansion of the existing HWIL capability as the BMDS evolves. Continue sustainment and development of the Kinetic HWIL facility to support next generation scene development efforts. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Perform Airborne Sensors (ABS) engine overhauls to support Ballistic Missile Defense System (BMDS) level flight tests 	Articles:	-	160.563	169.257
		0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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-Develop, maintain, and upgrade as needed MDA unique range facilities and instrumentation to include test data collection and dissemination, target characterization and discrimination, and multi-spectral event imagery.

-Support all MDA-sponsored BMDS flight and ground testing conducted in FY 2013 with the full complement of ranges and test infrastructure assets.

-Test Resource Managers (TRMs) will continue to complement test execution teams by overseeing scheduling, funding, and management of test resource assets.

-The Pacific Range Support Team will continue to provide efficient planning, coordination, and management of range resources and infrastructure for BMDS Flight Testing throughout the Pacific Test Bed.

-Maintain and upgrade MDA unique ground test facilities to support all BMDS developmental program hardware and software testing. These facilities provide hardware in the loop (HWIL) capability, threat signature measurement capability, and sensor calibration standards.

-Maintain and upgrade MDA unique ground test facilities to support Ballistic Missile Defense System (BMDS) level ground tests, including basic ground test control as well as some Element representations.

-Continue development of a second suite of HWIL equipment including the acquisition of additional hardware and digital element representations to support concurrent ground testing of current BMDS capability and that under development.

-Add hardware and digital element representations to support expansion of the existing HWIL capability as the BMDS evolves. Continue sustainment and development of the Kinetic HWIL facility to support next generation scene development efforts.

-Maintain and upgrade MDA unique flight test instrumentation to support Ballistic Missile Defense System (BMDS) level flight tests.

Title: Engineering and Test Analysis	-	30.147	39.008
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:
For FY 2011, refer to 0603890, Budget Project MD24.

FY 2012 Plans:

- Perform System-level analysis and interoperability analysis on BMDS test events listed in the Integrated Master Test Plan (IMTP).
- Develop Analysis Execution Plans (AEP) and final Test Analysis Reports (TAR) for BMDS test events listed in the IMTP.
- Lead Joint Analysis Teams (JAT) for BMDS test events listed in the IMTP.
- Develop, deliver, and brief Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR) for BMDS test events listed in the IMTP.
- Incorporate software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability.
- Continue to populate the MARS Analysis Database with most current test data to support analysis and capability assessments.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Provide SE&I test configuration management, risk assessment, and anomaly and test incident report review, assessment and closure to enable execution of the ground and flight test program and support data gathering for MDS hardware/software reliability improvements. -Allocate and track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency for ground and flight tests in accordance with the IMTP. -Define test objectives and evaluation criteria for all System level test events. -Design and certify scenarios for ground test events to meet required data collection and satisfy Systems Engineering & Integration -(SE&I), Operational Test Agencies (OTA) and Warfighter objectives. -Produce threat data required to enable Ballistic Missile Defense System Ground Tests, Ballistic Missile Defense System -Use models and simulations (M&S) for pre-test assessment and post-test review and M&S updates. -Performance Assessment, as documented in the Ballistic Missile Defense System IMTP. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Perform System-level analysis and interoperability analysis on BMDS test events listed in the Integrated Master Test Plan (IMTP). -Develop Analysis Execution Plans (AEP) and final Test Analysis Reports (TAR) for BMDS test events listed in the IMTP. Lead Joint Analysis Teams (JAT) for BMDS test events listed in the IMTP. -Develop, deliver, and brief Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR) for BMDS test events listed in the IMTP. -Incorporate software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability. -Continue to populate the MARS Analysis Database with most current test data to support analysis and capability assessments. -Provide SE&I test configuration management, risk assessment, and anomaly and test incident report review, assessment and closure to enable execution of the ground and flight test program and support data gathering for BMDS hardware/software reliability improvements. -Allocate and track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency for ground and flight tests in accordance with the IMTP. -Define test objectives and evaluation criteria for all System level test events. -Design and certify scenarios for ground test events to meet required data collection and satisfy Systems Engineering & Integration -(SE&I), Operational Test Agencies (OTA) and Warfighter objectives. -Produce threat data required to enable Ballistic Missile Defense System Ground Tests, Ballistic Missile Defense System -Use models and simulations (M&S) for pre-test assessment and post-test review and M&S updates. -Performance Assessment, as documented in the Ballistic Missile Defense System IMTP. 			

Title: Fielding and Integration	-	7.255	-
Articles:	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Description: See Description Below			
FY 2011 Accomplishments: Previously in PE 0603888C BMDS Test and Targets (Budget Project MD04).			
FY 2012 Plans: -Continue Ballistic Missile Defense System (BMDS) integration planning and capability delivery execution. -Manage BMDS Schedule Baseline. -Update BMDS Baseline documentation. -Continue to execute the BMDS Change Management process.			
FY 2013 Plans: Refer to Budget Project MD40 Program-Wide Support (PWS)			
Accomplishments/Planned Programs Subtotals	-	455.310	431.847

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing

D. Acquisition Strategy

The Directorate for Test acquisition strategy is consistent with the Missile Defense Agency (MDA) capabilities based acquisition strategy that emphasizes testing, evolutionary acquisition, and knowledge based funding. The Directorate for 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, a Federally Funded Research and Development Center (FFRDC), and other MDA programs to execute the various diverse efforts within the Ballistic Missile Defense System (BMDS) test program through competition. When a specific effort/activity being conducted, acquired, or maintained, requires the use of an executing agent, the acquisition strategy that conforms to their respective headquarters regulations are used. This combination of organizations forms an integrated team to accomplish the necessary testing for BMDS.

The Missile Defense Agency Integrated Master Test Plan (IMTP) establishes and documents the test requirements for the Ballistic Missile Defense System (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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603914C: <i>Ballistic Missile Defense Test</i>	MT04: <i>BMDS Test Program</i>

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 represents 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations Test Functional Management Office	MIPR	NA:MDA/MiDAESS/AL/VA/CO/MA	-	74.757		71.720		-		71.720	Continuing	Continuing	Continuing
Program Planning and Operations Operational Test Agency	MIPR	NA:OTA/NJ	-	15.130		15.510		-		15.510	Continuing	Continuing	Continuing
Program Planning and Operations Lab Analysis Infrastructure	MIPR	NA:AL/CA	-	13.353		15.256		-		15.256	Continuing	Continuing	Continuing
Program Planning and Operations IMTP Planning and Data Management Tools	MIPR	NA:AL	-	13.697		12.809		-		12.809	Continuing	Continuing	Continuing
Flight Test IMTP Flight Testing	MIPR	NA:AL/CA/HI	-	92.555		64.253		-		64.253	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Flight Test Support to Flight Testing	C/CPAF	NA:AL	-	23.852		22.144		-		22.144	Continuing	Continuing	Continuing
Ground Test IMTP Ground Testing	MIPR	NA:AL/CO	-	10.153		7.491		-		7.491	Continuing	Continuing	Continuing
Ground Test Support to Ground Testing	MIPR	NA:AL/CO	-	13.848		14.399		-		14.399	Continuing	Continuing	Continuing
Test Resources Flight Test Ranges	MIPR	NA:NAWC/WSMR/AK/AK/CA/HI/MD/NM/TN/VA	-	16.123		18.490		-		18.490	Continuing	Continuing	Continuing
Test Resources Flight Test Instrumentation	MIPR	NA:NRL/NAWC/CA/MD/NCR/NM	-	21.791		26.300		-		26.300	Continuing	Continuing	Continuing
Test Resources Flight Test Improvements	MIPR	NA:NAWC/MARAD/WSMR/CA/HI/NCR/NM	-	13.380		1.288		-		1.288	Continuing	Continuing	Continuing
Test Resources Sea Based Mobile Assets	MIPR	NA:MARAD/NAWC/Hanscom AFB/SMDC/AL/CA/MD/NCR/NM	-	15.742		23.752		-		23.752	Continuing	Continuing	Continuing
Test Resources Airborne Optics Mobile Assets	Reqn	NA:L3/AL	-	25.460		22.605		-		22.605	Continuing	Continuing	Continuing
Test Resources Core GT Labs and HWILS	Reqn	NA:Colsa/SMC/AL	-	37.147		38.524		-		38.524	Continuing	Continuing	Continuing
Test Resources Core GT Communication Support	MIPR	NA:SMDC/SPAWAR/AL/CA	-	3.770		3.830		-		3.830	Continuing	Continuing	Continuing
Test Resources Second String	Reqn	NA:Colsa/Boeing/NG/AL/CO	-	9.400		11.400		-		11.400	Continuing	Continuing	Continuing
Test Resources Current String	MIPR	NA:SPAWAR/AMRDEC/AL/CA/NM/TN	-	6.500		12.100		-		12.100	Continuing	Continuing	Continuing
Test Resources Support to Test Resources	MIPR	NA:MiDAESS/AL	-	11.250		10.968		-		10.968	Continuing	Continuing	Continuing
Engineering and Test Analysis Threat Engineering	MIPR	NA:NJ/CO/MD/VA	-	1.235		0.626		-		0.626	Continuing	Continuing	Continuing
Engineering and Test Analysis DEV IMTP Engineering	MIPR	NA:SMDC/AL	-	11.528		15.304		-		15.304	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Test Analysis Joint Analysis Team IMTP	MIPR	NA:AL/VA	-	17.384		23.078		-		23.078	Continuing	Continuing	Continuing
Fielding and Integration Support Contracts	C/CPAF	NA:Computer Sciences Corp./Falls Church, VA	-	7.255		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	455.310		431.847		-		431.847			

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	455.310	431.847	-	431.847			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
FTP-05 (PATRIOT Intercept Flight Test)																												
FTT-12 (THAAD Intercept Flight Test) (IOT&E)				▲																								
Arrow Flight Test - FY 2012					△																							
Fast Eagle (HWIL) 2						△																						
GTX-04e (BMDS Focused Ground Test)						△																						
FTM-16 E2a (Aegis Intercept Flight Test)							△																					
GM CTV-01 (GM Flight Test)							△																					
FTM-18 (Aegis Intercept Flight Test)							△																					
FTG-06b (GM Intercept Flight Test)								△																				
FTM-19 (Aegis Intercept Flight Test)								△																				
FTI-01 (FTO-01 Risk Reduction Flight Test)								△																				
GTI-04e EUCCOM/CENTCOM (BMDS Integrated HWIL Ground Test)								△																				
FTP-06 (PATRIOT Intercept Flight Test)								△																				
FTP-07 (PATRIOT Intercept Flight Test)								△																				
GTI-04e EUCCOM/CENTCOM (BMDS Integrated HWIL Ground Test) OT								△																				
GTD-04e EUCCOM (BMDS Distributed Ground Test) OT									△																			
Israeli Cooperative Intercept Flight Test - FY 2013										✦	✦	✦	✦															
GTD-04e CENTCOM (BMDS Distributed Ground Test) OT									△																			
FTM-21 E2 (Aegis Simulated Intercept Flight Test)											△																	
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test)											△																	
FTM-21 E3 (Aegis Intercept Flight Test) (Salvo)											△																	
FTM-22 E2 (Aegis Intercept Flight Test)											△																	
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)											△																	
FTM-21 E1 (Aegis Simulated Intercept Flight Test)											△																	
GTD-04e NORTHCOM/PACOM (BMDS Distributed Ground Test) OT												△																

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
FTP-08 (PATRIOT Intercept Flight Test)																												
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) OT												△																
Israeli Cooperative Intercept Flight Test - FY 2014														✦	✦	✦	✦											
WFTP-04e (Ground Test) (Warfighter Trial Period)												△																
SCDPTV-01 (Aegis Flight Test)												△																
FTX-14 (Aegis Simulated Intercept Flight Test)												△																
GDEx-04e (Ground Test) (Warfighter Exercise)												△																
AA CTV-01 (Aegis Ashore Flight Test)													△															
FTG-08 (GM Intercept Flight Test)														△														
GTX-06a (BMDS Focused Ground Test)															△													
FTM-20 E1 (Aegis Intercept Flight Test)																△												
FTT-11a (THAAD Intercept Flight Test)																	△											
FTM-24 (Aegis Intercept Flight Test)																		△										
AA FTM-02 (Aegis Ashore Intercept Flight Test)																			△									
AA FTM-01 (Aegis Ashore Intercept Flight Test)																				△								
GTI-06a (BMDS Integrated HWIL Ground Test)																					△							
GTI-06a (BMDS Integrated HWIL Ground Test) OT																						△						
FTM-25 E1 (Aegis Intercept Flight Test)																							△					
Israeli Cooperative Intercept Flight Test - FY2015																								✦	✦	✦	✦	
FTX-19 (Aegis SBT Simulated Intercept Flight Test)																								△				
GTD-06a CENTCOM (BMDS Distributed Ground Test)																									△			
GTD-06a EUCOM (BMDS Distributed Ground Test) OT																										△		
GTD-06a EUCOM (BMDS Distributed Ground Test)																											△	
GDEx-06a (Ground Test) (Warfighter Exercise)																											△	
WFTP-06a (Ground Test) (Warfighter Trial Period)																											△	

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
SCDCTV-01 (Aegis Flight Test)																												
GTI-06 (BMDS Integrated HWIL Ground Test) (OT)																			▲									
FTM-30 (Aegis Intercept Flight Test)																			▲									
GTD-06a CENTCOM (BMDS Distributed Ground Test) OT																			▲									
FTX-10 (Cobra Dane Flight Test)																			▲									
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test)																			▲									
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test) OT																			▲									
GTI-06 (BMDS Integrated HWIL Ground Test)																			▲									
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																			▲									
WFTP-06 (Ground Test) (Warfighter Trial Period)																			▲									
GDEx-06 (Ground Test) (Warfighter Exercise)																			▲									
GTI-ISR-16 (BMDS Integrated HWIL Ground Test)																			▲									
SCDCTV-02 (Aegis Flight Test)																			▲									
FTG-11 (GM Intercept Flight Test) (Salvo)																			▲									
GTX-06b (BMDS Ground Test)																			▲									
Israeli Cooperative Intercept Flight Test - FY 2016 (1)																			✦	✦	✦	✦						
SFTM-1 E2 (Aegis Intercept Flight Test)																								▲				
SFTM-1 E1 (Aegis Simulated Intercept Flight Test)																								▲				
FTM-26 E1 (Aegis Flight Test)																								▲				
GTI-06b (BMDS Integrated HWIL Ground Test) OT																								▲				
GTI-06b (BMDS Integrated HWIL Ground Test)																								▲				
FTG-13 (GM Intercept Flight Test) (OT)																									▲			
GTD-06b CENTCOM (BMDS Distributed Ground Test) OT																									▲			
GTD-06b CENTCOM (BMDS Distributed Ground Test)																									▲			

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTP-05 (PATRIOT Intercept Flight Test)	1	2012	1	2012
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	1	2012	1	2012
Arrow Flight Test - FY 2012	2	2012	2	2012
Fast Eagle (HWIL) 2	3	2012	3	2012
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
FTM-16 E2a (Aegis Intercept Flight Test)	3	2012	3	2012
GM CTV-01 (GM Flight Test)	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012
FTI-01 (FTO-01 Risk Reduction Flight Test)	4	2012	4	2012
GTI-04e EUCOM/CENTCOM (BMDS Integrated HWIL Ground Test)	4	2012	4	2012
FTP-06 (PATRIOT Intercept Flight Test)	4	2012	4	2012
FTP-07 (PATRIOT Intercept Flight Test)	4	2012	4	2012
GTI-04e EUCOM/CENTCOM (BMDS Integrated HWIL Ground Test) OT	4	2012	4	2012
GTD-04e EUCOM (BMDS Distributed Ground Test) OT	1	2013	1	2013
Israeli Cooperative Intercept Flight Test - FY 2013	1	2013	4	2013
GTD-04e CENTCOM (BMDS Distributed Ground Test) OT	2	2013	2	2013
FTM-21 E2 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test)	3	2013	3	2013
FTM-21 E3 (Aegis Intercept Flight Test) (Salvo)	3	2013	3	2013
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	3	2013	3	2013
FTM-21 E1 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
GTD-04e NORTHCOM/PACOM (BMDS Distributed Ground Test) OT	4	2013	4	2013
FTP-08 (PATRIOT Intercept Flight Test)	4	2013	4	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) OT	4	2013	4	2013
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
WFTP-04e (Ground Test) (Warfighter Trial Period)	1	2014	1	2014
SCDPTV-01 (Aegis Flight Test)	1	2014	1	2014
FTX-14 (Aegis Simulated Intercept Flight Test)	1	2014	1	2014
GDEx-04e (Ground Test) (Warfighter Exercise)	1	2014	1	2014
AA CTV-01 (Aegis Ashore Flight Test)	2	2014	2	2014
FTG-08 (GM Intercept Flight Test)	3	2014	3	2014
GTX-06a (BMDS Focused Ground Test)	3	2014	3	2014
FTM-20 E1 (Aegis Intercept Flight Test)	3	2014	3	2014
FTT-11a (THAAD Intercept Flight Test)	4	2014	4	2014
FTM-24 (Aegis Intercept Flight Test)	4	2014	4	2014
AA FTM-02 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
AA FTM-01 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
GTI-06a (BMDS Integrated HWIL Ground Test)	1	2015	1	2015
GTI-06a (BMDS Integrated HWIL Ground Test) OT	1	2015	1	2015
FTM-25 E1 (Aegis Intercept Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY2015	1	2015	4	2015
FTX-19 (Aegis SBT Simulated Intercept Flight Test)	1	2015	1	2015
GTD-06a CENTCOM (BMDS Distributed Ground Test)	2	2015	2	2015
GTD-06a EUCOM (BMDS Distributed Ground Test) OT	2	2015	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-06a EUCOM (BMDS Distributed Ground Test)	2	2015	2	2015
GDEx-06a (Ground Test) (Warfighter Exercise)	2	2015	2	2015
WFTP-06a (Ground Test) (Warfighter Trial Period)	2	2015	2	2015
SCDCTV-01 (Aegis Flight Test)	2	2015	2	2015
GTI-06 (BMDS Integrated HWIL Ground Test) (OT)	3	2015	3	2015
FTM-30 (Aegis Intercept Flight Test)	3	2015	3	2015
GTD-06a CENTCOM (BMDS Distributed Ground Test) OT	3	2015	3	2015
FTX-10 (Cobra Dane Flight Test)	3	2015	3	2015
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test)	3	2015	3	2015
GTD-06a NORTHCOM/PACOM (BMDS Distributed Ground Test) OT	3	2015	3	2015
GTI-06 (BMDS Integrated HWIL Ground Test)	3	2015	3	2015
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
WFTP-06 (Ground Test) (Warfighter Trial Period)	4	2015	4	2015
GDEx-06 (Ground Test) (Warfighter Exercise)	4	2015	4	2015
GTI-ISR-16 (BMDS Integrated HWIL Ground Test)	4	2015	4	2015
SCDCTV-02 (Aegis Flight Test)	4	2015	4	2015
FTG-11 (GM Intercept Flight Test) (Salvo)	4	2015	4	2015
GTX-06b (BMDS Ground Test)	1	2016	1	2016
Israeli Cooperative Intercept Flight Test - FY 2016 (1)	1	2016	4	2016
SFTM-1 E2 (Aegis Intercept Flight Test)	3	2016	3	2016
SFTM-1 E1 (Aegis Simulated Intercept Flight Test)	3	2016	3	2016
FTM-26 E1 (Aegis Flight Test)	3	2016	3	2016
GTI-06b (BMDS Integrated HWIL Ground Test) OT	3	2016	3	2016
GTI-06b (BMDS Integrated HWIL Ground Test)	3	2016	3	2016
FTG-13 (GM Intercept Flight Test) (OT)	4	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-06b CENTCOM (BMDS Distributed Ground Test) OT	4	2016	4	2016
GTD-06b CENTCOM (BMDS Distributed Ground Test)	4	2016	4	2016
GTD-06b EUCOM (BMDS Distributed Ground Test) OT	4	2016	4	2016
GTD-06b EUCOM (BMDS Distributed Ground Test)	4	2016	4	2016
WFTP-06b (Ground Test) (Warfighter Trial Period)	4	2016	4	2016
GDEx-06b (Ground Test) (Warfighter Exercise)	4	2016	4	2016
Israeli Cooperative Intercept Flight Test - FY 2016 (2)	1	2017	4	2017
SFTM-2 (Aegis Intercept Flight Test)	1	2017	1	2017
GTD-06b NORTHCOM/PACOM (BMDS Distributed Ground Test)	1	2017	1	2017
GTD-06b NORTHCOM/PACOM (BMDS Distributed Ground Test) OT	1	2017	1	2017
FTX-20 (Aegis SBT Flight Test)	1	2017	1	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
GTX-07a (BMDS Focused Ground Test)	3	2017	3	2017
FTG-15 (GM Intercept Flight Test) (NTD)	4	2017	4	2017
GTX-07b (BMDS Focused Ground Test)	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>				PROJECT MX04: <i>BMD Test Development Support</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MX04: <i>BMD Test Development Support</i>	-	32.389	-	-	-	-	-	-	-	0.000	32.389
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

For FY 2011, refer to PE 0603896C, Budget Project MD01. For FY 2013, refer to PE0603896C, Budget Project MX01.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense System (BMDS) Concurrent Test, Training, and Operations (CTTO) effort provides for comprehensive, in-place, geographically dispersed upgrades, testing, training, and sustainment while maintaining operational readiness across the complete BMDS Enterprise. This CTTO capability will enable simultaneous cross-element training events in the field during BMDS incremental and spiral development testing and sustained operational readiness conditions without degrading protection capability. The BMDS CTTO capability is formally documented as a requirement in the Warfighter's Prioritized Capabilities List (PCL) and Modifications Requirement List (MRL).

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

	FY 2011	FY 2012	FY 2013
Title: Concurrent Test, Training, and operations	-	32.389	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: For FY 2011, refer to PE 0603896C, Budget Project MD01.			
FY 2012 Plans:			
-Continue integration of element delivered implementations.			
-Monitor and coordinate the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of Concurrent Test, Training, and Operations (CTTO).			
-Operate and sustain Distributed Multi-Echelon System (DMETS) training and exercise suites and associated hardware and software at 80 hours per week.			
-Continue providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture.			
-Continue to upgrade Distributed Multi-Echelon System (DMETS) to mirror the deployed systems. Includes technical refresh.			
Expand training enhancements (e.g.dynamic scenarios emulating enemy mobile launchers, constructive (manned) element simulations, and initial crew assessment tools) and cross mission training.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Implement and Deploy distributed regional training solutions.			
FY 2013 Plans: For FY 2013, refer to PE0603896C, Budget Project MX01.			
Accomplishments/Planned Programs Subtotals	-	32.389	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603896C: <i>Ballistic Missile</i> <i>Defense Command and</i> <i>Control, Battle Management &</i> <i>Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing

D. Acquisition Strategy

The Concurrent Test, Training, and Operations (CTTO) systems design and acquisition will follow the MDA's capability-based acquisition strategy that emphasizes fielding capabilities that address particular threats. The design and development of the BMDS CTTO capability is a collaborative effort. The government is the task manager to integrate the technical effort and manage the contracting efforts. The government, using existing competitively awarded contract structures, established a CTTO Project Office; determined BMDS CTTO requirements and standardization; determined BMDS Core Protocol and Standards; upgrades, technology insertion points, and synchronize BMDS Element level activities; training exercises and events and capabilities. The long term acquisition strategy is to normalize CTTO requirements into existing contract structures. The intent is to develop a fully capable CTTO capability that provides comprehensive, in-place, geographically dispersed test, training, and evaluation of the complete BMDS. The CTTO approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal				-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Concurrent Test, Training, and operations Concurrent Test, Training and Operations DMETS	C/CPAF	Various:Various	-	8.309		-		-		-	Continuing	Continuing	Continuing
Concurrent Test, Training, and operations Concurrent Test, Training and Operations Test/ Training Enhancements	C/CPAF	Various:Various	-	23.432		-		-		-	Continuing	Continuing	Continuing
Concurrent Test, Training, and operations Concurrent Test, Training and Operations FFRDC	SS/FFP	MITRE:Various	-	0.648		-		-		-	Continuing	Continuing	Continuing
Subtotal				-	32.389	-		-		-			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development Support</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date			
Project Cost Totals		-		32.389		-		-				

Remarks
NA

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MD40: <i>Program Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	-	-	22.553	-	22.553	18.121	18.243	14.609	17.513	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

Program Wide Support was previously captured in BMD Test and Targets PE 0603888C (Budget Project MD40) for FY 2011 and BMD Enabling PE 0603890C (Budget Project MD40) for FY 2012.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) consists of essential non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts.

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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	-	22.553
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Refer to BMD Test and Targets PE 0603888C Budget Project MD40			
FY 2012 Plans: Refer to BMD Enabling PE 0603890C Budget Project MD40.			
FY 2013 Plans: See paragraph A, Mission Description and Justification.			
Accomplishments/Planned Programs Subtotals	-	-	22.553

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603914C: <i>Ballistic Missile Defense Test</i>	MD40: <i>Program Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	454.357	435.747	-	435.747	475.175	505.591	406.931	485.950	Continuing	Continuing
MT05: <i>BMD Targets Program</i>	-	454.357	414.696	-	414.696	451.206	480.916	386.854	461.303	Continuing	Continuing
MD40: <i>Program Wide Support</i>	-	-	21.051	-	21.051	23.969	24.675	20.077	24.647	Continuing	Continuing

Note

FY 2011: The BMD Targets Program was documented in Program Element (PE) 0603888C (Budget Project MD05); Program Wide Support was documented in PE 0603888C (Budget Project MD40).

FY 2012: This is a new Program Element for BMD Targets. The Consolidated Appropriation Act of FY 2012 (Public Law 112-74) transferred funds from 0603888C to 0603915C.

Program Wide Support was previously captured in BMDS Test and Targets PE 0603888C (Budget Project MD40) for FY 2011 and BMD Enabling PE 0603890C (Budget Project MD40) for FY 2012. Starting in FY 2013, a portion of Program Wide Support (Budget Project MD40) transfers in from BMD Test and Targets PE 0603888C (Budget Project MD40).

A. Mission Description and Budget Item Justification

The Targets PE includes the Targets Program and, beginning in FY 2013, a portion of Program-Wide Support.

As part of the total Ballistic Missile Defense System (BMDS), the Targets PE provides centrally managed targets and countermeasures development and procurement for a cost effective, integrated system-level test approach. Targets and Countermeasures (TC) has realized past and future savings by centralized competition and management of targets and countermeasures using efficient procurement and lot buys resulting in economies of scale and cost savings. Based on the systems engineering assessments of threat intelligence, the Targets and Countermeasures program develops, builds, and supports the launch of Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, Intercontinental Ballistic Missile (ICBM) targets, and common payloads and components to test, verify, and validate the performance of the BMDS against feasible threat signatures. The TC 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 consists of essential non-headquarters management costs in support of the MDA functions and activities across the entire BMDS.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	454.357	435.747	-	435.747
Total Adjustments	-	454.357	435.747	-	435.747
• Congressional General Reductions	-	-0.642			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	454.999			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	435.747	-	435.747

Change Summary Explanation

FY 2012 reflects congressional transfer from PE 0603888C (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).

FY 2013 reflects changes as provided in the Consolidated Appropriation Act of FY 2012 (Public Law 112-74).

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT05: <i>BMDS Targets Program</i>	-	454.357	414.696	-	414.696	451.206	480.916	386.854	461.303	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

All Budget Project MT05 funds support BMDS-Level Testing.

Prior to FY 2012, Budget Project MT05 funds were documented in Budget Project MD05 in Program Element 0603888C (a portion of FY 2012 and all of FY 2011 and prior).

A. Mission Description and Budget Item Justification

The goal of the Missile Defense Agency (MDA) Targets and Countermeasures (TC) program is to provide an economical and reliable inventory of targets that are representative of feasible future threats and support demonstration of the evolving layered missile defense system capability in a simultaneous test and operating environment. Based on the systems engineering assessments of threat intelligence, the targets and countermeasures program designs, develops, builds, and supports the launch of Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, Intercontinental Ballistic Missile (ICBM) targets, and the associated common payloads and components to test, verify, and validate the performance of the Ballistic Missile Defense System (BMDS). This project provides funding to the Targets and Countermeasures program office for the development and procurement of ballistic targets and countermeasures for the BMDS in support of the MDA flight test program. It also provides BMD systems engineering and integration and modeling and simulation funding supporting the Integrated Master Test Plan. Target requirements are derived from the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) and are documented in the Agency's Integrated Master Test Plan. Targets and Countermeasures are developed and built at multiple locations including: Courtland, AL; Orlando, FL; Chandler, AZ; and Albuquerque, NM. Storage and maintenance facilities are also located throughout the country including: Huntsville, AL; White Sands, NM; Ogden, UT; Camp Navajo, AZ; Hawthorne, NV; Tooele, UT; Courtland, AL; and Kodiak, AK.

Funding for the TC program supports the continuation of the target program's source activities which include the requirements, design, and build of BMDS targets, associated payloads, and flight missions. It also supports the maintenance, aging surveillance, refurbishment, and routine testing of existing government furnished equipment boosters and target components, as well as the purchase of long lead material assets and asset management items for short, medium, intermediate, and long-range target components.

The TC program office is responsible for executing the development and procurement of targets to support testing of the BMDS and its components. The multiple targets (3 types) provided by TC represent four target classes: Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), Intermediate Range Ballistic Missiles (IRBM), and Intercontinental Ballistic Missiles (ICBM). It provides targets representative of feasible future threats for use in BMDS testing to verify models and simulations, as well as to verify BMDS performance across a broad range of operational conditions.

Target Types:

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Type-1 Targets are simple, baseline configurations
 Type-2 Targets have increased capability or complexity
 Type-3 Targets have a unique configuration and are procured in low unit quantities

The TC program consists of three major areas: Program Operations, Target Support, and Target Hardware.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Target Hardware</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: NA</p> <p>FY 2012 Plans: Target Hardware includes the design and build of Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, Intercontinental Ballistic Missile (ICBM) targets, and common payloads and components. It provides for support of specific flight tests in the areas of pre-mission and post-mission analysis. MDA`s Test Directorate is responsible for all target launch operations to include range coordination and use, transportation of equipment and target hardware to the range, and launch execution.</p> <p>Specifically, target development effort provides for the non-recurring engineering (NRE) development of all four target classes (SRBM, MRBM, IRBM, and ICBM), common components (associated objects and reentry vehicles), and ground support systems to support BMDS flight testing. It includes short, medium, intermediate and long range target systems with air, sea, and ground launch capabilities as well as enhancements to legacy target systems for cost effective target solutions. Efforts include requirements decomposition, design, qualification testing, and characterization. It includes ensuring boosters, inter-stages, avionics systems, reentry vehicles, payload deployment modules, and associated objects adhere to interface specifications and meet reliability, mission assurance, and cost goals. Efforts address target producibility, manufacturing maturity, and affordability. Supporting this objective are the necessary modeling and simulation efforts, analyses, configuration management, technical interchange meetings, and design reviews resulting in designs that meet BMDS requirements.</p> <p>The manufacturing of target hardware includes the development of full up targets and target components for Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, and Intercontinental Ballistic Missile (ICBM) targets. It includes integrated or component ballistic missile flight test hardware (launch vehicles, reentry vehicles, associated objects); target characterization; quality and mission assurance; government furnished equipment and services; and transportation and logistics support.</p>	<p>-</p> <p>0</p>	<p>343.420</p> <p>0</p>	<p>281.356</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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Target requirements are delineated in the Missile Defense Agency (MDA) Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.

Multi-Class Components: Develop, build, and support common payloads and components, re-entry vehicles, booster motors, and associated objects to support the manufacturing of targets for SRBM, MRBM, IRBM, and ICBM. Specifically, the funds are used for non-recurring engineering (NRE) and recurring engineering to:

- Initiate/continue development and delivery of Modified Ballistic Re-entry Vehicle-2 (MBRV-2)
- Initiate/continue development and delivery of MBRV-4
- Initiate/continue development and delivery of MBRV-5
- Initiate/continue development and delivery of MBRV-7
- Initiate/continue development and delivery of MBRV-8
- Initiate/continue development and delivery of Attitude Control Module (ACM)
- Continue Family 1F development
- Continue Family 1G development
- Continue LV-2 AO development
- Initiate IRBM AO development
- Other Counter Measures/Associated Objects Non-Recurring Engineering to include the United Kingdom Project Agreement
- Initiate/continue development of all other re-entry vehicles, associated objects, and motors in support of the current Integrated Master Test Plan

Intermediate Range Ballistic Missile (IRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of IRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the intermediate range ballistic missile threat and capabilities.

- Launch Vehicle 2 (LV-2) - Deliver Ship Set 4, continue development of Ship Sets 5 and 6
- IRBM T1/T2 - Initiate/continue development of Ship Sets 1 thru 16
- Initiate/continue development of all other IRBMs in support of the current Integrated Master Test Plan (IMTP)

Medium Range Ballistic Missile (MRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of MRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition,

	FY 2011	FY 2012	FY 2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the medium range ballistic missile threat and capabilities.</p> <p>-Extended Medium Range Ballistic Missile (eMRBM) - Initiate/continue development of Ship Sets 1 thru 5 -Extended Long Range Air Launch Target (ELRALT) - Initiate/continue development of Ship Sets 1 and 2 -MRBM Type 3 (MRBM T3) - Initiate/continue development of Ship Sets 1 thru 4 -Initiate/continue development of all other MRBMs in support of the current IMTP</p> <p>Short Range Ballistic Missiles (SRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of SRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the short range ballistic missile threat and capabilities.</p> <p>-Short Range Air Launched Target (SRALT) - Initiate/continue development of Ship Set 2 -Medium Range Target (MRT) Ground - Initiate/continue development of Ship Set 10 -Aegis Readiness Assessment Vehicle-C (ARAV-C) - Initiate/continue development of Ship Sets 1, 4, and 5 -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Initiate/continue development of Ship Sets 9-14 -Aegis Readiness Assessment Vehicle-A (ARAV-A) - Initiate/continue development of Ship Sets 8-12 -Foreign Materiel Acquisition-1 (FMA-1) - Initiate/continue development of Ship Sets 10 and 14 -Foreign Materiel Acquisition-2 (FMA-2) - Initiate/continue development of Ship Sets 5-7 -Strypi - Initiate/continue development of Ship Set 1 -Initiate/continue development of all other SRBMs in support of the current IMTP</p> <p>Intercontinental Ballistic Missile (ICBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) to support BMDS flight testing.</p> <p>FY 2013 Plans: Target requirements are delineated in the Missile Defense Agency (MDA) Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p> <p>Multi-Class Components: Develop, build, and support common payloads and components, re-entry vehicles, booster motors, and associated objects to support the manufacturing of targets for SRBM, MRBM, IRBM, and ICBM. Specifically, the funds are used for non-recurring engineering (NRE) and recurring engineering to:</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Initiate/continue development and delivery of Modified Ballistic Re-Entry Vehicle-2 (MBRV-2)</p> <p>-Initiate/continue development and delivery of MBRV-5</p> <p>-Initiate/continue development and delivery of MBRV-7</p> <p>-Initiate/continue development and delivery of MBRV-8</p> <p>-Initiate/continue development and delivery of Attitude Control Module (ACM)</p> <p>-Counter Measures/Associated Objects Non-Recurring Engineering to include Objects for Intermediate Range Ballistic Missile (IRBM) target, and the United Kingdom Project Agreement</p> <p>-Initiate/ continue development of all other Re-entry Vehicles, Associated Objects, and Motors in support of the current Integrated Master Test Plan.</p> <p>Intermediate Range Ballistic Missile (IRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of IRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the intermediate range ballistic missile threat and capabilities.</p> <p>-IRBM T1/T2 - Initiate/continue development of Ship Sets 1 thru 16</p> <p>-Initiate/continue development of all other IRBMs in support of the current Integrated Master Test Plan (IMTP)</p> <p>Medium Range Ballistic Missile (MRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of MRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the medium range ballistic missile threat and capabilities.</p> <p>-Extended Medium Range Ballistic Missile (eMRBM) - Initiate/continue development of Ship Sets 1-5</p> <p>-Extended Long Range Air Launch Target (E-LRALT) - Initiate/continue development of Ship Set 2</p> <p>-MRBM Type 3 (MRBM T3) - Initiate/continue development of Ship Sets 1-4</p> <p>-Initiate/continue development of all other MRBMs in support of the current Integrated Master Test Plan (IMTP)</p> <p>Short Range Ballistic Missiles (SRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of SRBM launch vehicles to support BMDS flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the short range ballistic missile threat and capabilities.</p> <p>-Short Range Air-Launched Target (SRALT) - Initiate/continue development of Ship Set 3</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p>-Aegis Readiness Assessment Vehicle-C (ARAV-C) - Initiate/continue development of Ship Sets 4-6 -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Initiate/continue development of Ship Sets 9, 11-15 -Aegis Readiness Assessment Vehicle-A (ARAV-A) - Initiate/continue development of Ship Sets 10-12 -Foreign Materiel Acquisition-1 (FMA-1) - Imitate/continue development of Ship Set 12 -Strypi - Initiate/continue development of Ship Set 1 -Initiate/continue development of all other SRBMs in support of the current Integrated Master Test Plan (IMTP)</p> <p>Intercontinental Ballistic Missile (ICBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) to support BMDS flight testing.</p> <p>Variance Analysis: FY 2013 budget decreases from FY 2012 due to decrease in non-recurring engineering costs and long-lead hardware procurement associated with Intermediate Range Ballistic Missile targets, Medium Range Ballistic Missile targets, and common components.</p>			
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Title: Program Operations	-	59.019	59.840
Articles:	0	0	0

Description: See Description Below

FY 2011 Accomplishments:
NA

FY 2012 Plans:
 Program Operations consist of the government, contractor and Federally Funded Research and Development Center (FFRDC) workforce that manages the overall Targets and Countermeasures (TC) program, to include competition of new MRBM contracts, engineering, logistics, program management, business management, acquisition, contract administration, and quality assurance. The personnel for TC enable the program to develop, build, and evaluate targets that respond to the changing threat and meet the requirements in the Integrated Master Test Plan. These personnel include the following:

- MDA Civilians in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality and Mission Assurance; Security; and Test
- Other Government Agency (OGA) Civilians to provide support in the following functional areas: Business and Financial Management; Engineering; Logistics; Safety, Quality, and Mission Assurance; and Security
- Travel for Government Civilians

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Missile Defense Agency Engineering and Support Services (MiDAESS) contractor support in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality, and Mission Assurance; Security; and Test</p> <p>-FFRDCs, Intergovernmental Personnel Act (IPAs), University Affiliated Research Center (UARC) staff, Detailees, and Liaisons to support the TC program office in Engineering</p> <p>-Operations support to include Change of Station requirements and Student Loan Repayments</p> <p>FY 2013 Plans: Program Operations consist of the government, contractor and Federally Funded Research and Development Center (FFRDC) workforce that manages the overall Targets and Countermeasures (TC) program, to include competition of new MRBM contracts, engineering, logistics, program management, business management, acquisition, contract administration, and quality assurance. The personnel for TC enable the program to develop , build, and evaluate targets that respond to the changing threat and meet the requirements in the Integrated Master Test Plan. These personnel include the following:</p> <p>-MDA Civilians in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality and Mission Assurance; Security; and Test</p> <p>-Other Government Agency (OGA) Civilians to provide support in the following functional areas: Business and Financial Management; Engineering; Logistics; Safety, Quality, and Mission Assurance; and Security</p> <p>-Travel for Government Civilians</p> <p>-Missile Defense Agency Engineering and Support Services (MiDAESS) contractor support in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality, and Mission Assurance; Security; and Test</p> <p>-FFRDCs, Intergovernmental Personnel Act (IPAs), University Affiliated Research Center (UARC) staff, Detailees, and Liaisons to support the TC program office in Engineering</p> <p>-Operations support to include Change of Station requirements and Student Loan Repayments</p>				
Title: Target Support		-	51.918	73.500
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: NA				
FY 2012 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Target Support consists of three sub-elements. These are Systems Engineering/Program Management, Logistics, and Support Equipment.</p> <p>System engineering/program management effort includes activities by Targets and Countermeasures (TC) prime contractors as well as non-prime systems engineering efforts. This effort 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. Efforts not on the prime contracts in support of the TC program include Single Stimulation Framework (SSF)/Objective Stimulation Framework (OSF) compatible Modeling and Simulation execution and improvements to evolve TC Modeling and Simulation capability; trajectory analyses; signature analyses and characterization; studies to assess alternative target and platform solutions; assessments of risk and mission assurance; and design approval of government furnished equipment.</p> <p>Targets and Countermeasures (TC) Logistics efforts provide the Missile Defense Agency (MDA) with target storage, aging surveillance, and transportation of TC hardware in support of BMDS testing. These efforts are essential in providing a dependable and reliable target system that enables MDA to build more operational realistic targets to emulate known threats or potential threats. This effort includes integrated logistics support for all TC material including facilities, inventory maintenance, spare parts, aging surveillance, disposal, and special testing for government furnished equipment target rocket motor propellants and other hazardous material handling. This task provides all required facilities and monitoring for explosive storage and Foreign Materiel Acquisition (FMA).</p> <p>Finally, this task manages and oversees accountability of all government furnished equipment and contractor acquired property. Support equipment effort provides for the development and build of common support equipment for launch vehicles, re-entry vehicles, associated objects, and all up integrated target rounds. It also supports launch site activations through the transportation of support equipment to various test sites.</p> <p>System Engineering and Program Management: Perform program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p> <p>-Continue Program Management and Business Operations for target components to provide a framework for the overall management of the Targets program</p> <p>-Continue Information Technology support for Other Government Agencies (OGAs) so that subject matter experts can be used to support Target requirements</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>		PROJECT MT05: <i>BMDS Targets Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>-Continue Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure representative of feasible future threats; technology is being incorporated into the Targets program</p> <p>-Continue Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success</p> <p>-Continue information technology and classified network support to ensure sensitive target information is not compromised</p> <p>-Continue Software Independent Verification and Validation (IV&V) for targets including the Extended Medium Range Ballistic Missile (eMRBM), Launch Vehicle-2 (LV-2), Air-Launched Intermediate Range Ballistic Missile (IRBM), and Medium Range Ballistic Missile Type 3 (MRBM T3) to provide risk reduction of flight missions</p> <p>-Continue MDA Engineering Directorate to ensure targets are representative of feasible future threats</p> <p>-Perform prime contractor program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests</p> <p>Logistics and Sustainment: Provide Non-Prime efforts in the areas of maintenance, transportation, utilities, storage, license fees, aging surveillance, disposal and material handling for targets, target components, re-entry rebuilds, associated objects, and support equipment. Targets and Countermeasures utilizes storage to acquire and preserve existing booster motors and other target hardware from DoD inventory to build future targets with existing, flight qualified components, which help reduce future development and manufacturing costs to include:</p> <p>-C4 Motors - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Castor IVA - Transportation costs</p> <p>-Castor IVB - Storage costs</p> <p>-GEM-40 - Desiccant baffles and forward dome inspection costs</p> <p>-Lance -Missile sustainment, telemetry van sustainment and facilities sustainment costs</p> <p>-M-57 - Storage, disposal, transportation, and aging surveillance</p> <p>-Orbus 1A - Missile sustainment</p> <p>-SR19 - Storage, disposal, transportation, aging surveillance, and static fire costs</p> <p>-Multi-Class Inventory storage, aging surveillance, and transportation costs</p> <p>-Multi-Class Other - Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification costs</p> <p>-Initiate modification to expand the missile assembly building at Courtland, Alabama</p> <p>FY 2013 Plans:</p> <p>System Engineering and Program Management: Perform program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-Continue Program Management and Business Operations for target components to provide a framework for overall management of the Targets program</p> <p>-Continue Information Technology support for Other Government Agencies (OGAs) so that subject matter experts can be used to support Target requirements</p> <p>-Continue Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure representative of feasible future threats; technology is being incorporated into the Targets program</p> <p>-Continue Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success</p> <p>-Continue information technology and classified network support to ensure sensitive target information is not compromised</p> <p>-Continue Software Independent Verification and Validation (IV&V) for targets, including the Extended Medium Range Ballistic Missile (eMRBM), Launch Vehicle-2 (LV-2), Air-Launched Intermediate Range Ballistic Missile (IRBM), and Medium Range Ballistic Missile Type 3 (MRBM T3), to provide risk reduction of flight missions</p> <p>-Continue MDA Engineering Directorate targets and countermeasures requirements support to ensure targets accurately represent the threat</p> <p>-Perform prime contractor program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests</p> <p>Logistics and Sustainment: Provides maintenance, transportation, utilities, storage, license fees, aging surveillance, disposal and material handling for targets, target components, re-entry rebuilds, associated objects, and support equipment. Targets and Countermeasures utilizes storage to acquire and preserve existing booster motors and other target hardware from DoD inventory to build future targets with existing, flight qualified components, which help reduce future development and manufacturing costs to include:</p> <p>-C4 Motors - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Castor IVA - Storage support</p> <p>-Castor IVB - Storage support</p> <p>-M-57 - Storage, disposal, transportation, and aging surveillance support</p> <p>-Orbus 1A - Missile sustainment support</p> <p>-SR-19 - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Multi-Class Inventory storage, aging surveillance, and transportation support</p> <p>-Multi-Class Other - Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification support</p> <p>-Complete modification to expand the missile assembly building at Courtland, Alabama</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Variance Analysis: FY 2013 budget increases from FY 2012 due to \$17.9 million of FY 2012 funds being executed in Budget Project MD05 in Program Element 0603888C.			
Accomplishments/Planned Programs Subtotals	-	454.357	414.696

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637

D. Acquisition Strategy

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

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

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603915C: <i>Ballistic Missile Defense Targets</i>	MT05: <i>BMDS Targets Program</i>

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

The Aegis Readiness Assessment Vehicle (ARAV) target effort is managed by Targets and Countermeasures (TC) program office 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. TC provides targets funding via Military Interdepartmental Purchase Orders that NSWC PHD WS expends on its hardware development and engineering contracts. In addition, TC provides funding to Sandia National Labs in support of the Attitude Control Module (ACM) development effort for the ARAV Group C target. NSWC PHD WS manages the integration of the ACM onto the launch vehicle. The MDA Test Directorate (DT) is responsible for funding all launch services of these targets in support of the (Integrated Master Test Plan) IMTP.

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

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

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

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>

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

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Target Hardware Target Hardware/SRBM - 2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	4.192	Dec 2011	2.320	Nov 2012	-		2.320	Continuing	Continuing	Continuing
Target Hardware Target Hardware/SRBM - 3	C/CPAF	L3 Communications/ Coleman Aerospace:Orlando, FL	-	-		1.620	Nov 2012	-		1.620	Continuing	Continuing	Continuing
Target Hardware Target Hardware/SRBM - 4	C/CPAF	Lockheed Martin Space Systems Company:Courtlund, AL	-	3.282	Jan 2012	0.730	Nov 2012	-		0.730	Continuing	Continuing	Continuing
Target Hardware Target Hardware/SRBM - 7	MIPR	Naval Surface Warfare Center, Port Hueneme:Port Hueneme, CA	-	9.016	Jan 2012	7.861	Nov 2012	-		7.861	Continuing	Continuing	Continuing
Target Hardware Target Hardware/SRBM - 9	FFRDC	Sandia National Laboratories:Albuquerque, NM	-	0.189	Jan 2012	3.070	Nov 2012	-		3.070	Continuing	Continuing	Continuing
Target Hardware Target Hardware/MRBM - 1	C/CPAF	Lockheed Martin Space Systems Company:Courtlund, AL	-	40.638	Jan 2012	97.043	Nov 2012	-		97.043	Continuing	Continuing	Continuing
Target Hardware Target Hardware/MRBM - 2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	54.142	Dec 2011	11.544	Nov 2012	-		11.544	Continuing	Continuing	Continuing
Target Hardware Target Hardware/MRBM - 6	C/FFP	MRBM T3 RFP:TBD	-	-		0.641	Mar 2013	-		0.641	Continuing	Continuing	Continuing
Target Hardware Target Hardware/IRBM - 2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	94.105	Jan 2012	71.679	Nov 2012	-		71.679	Continuing	Continuing	Continuing
Target Hardware Target Hardware/IRBM - 4	C/FFP	Orbital Sciences Corporation:Chandler, AZ	-	0.916	Jan 2012	2.250	Nov 2012	-		2.250	Continuing	Continuing	Continuing
Target Hardware Target Hardware/IRBM - 5	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	-	0.896	Jan 2012	0.837	Nov 2012	-		0.837	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	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	Mar 2012	9.718	Nov 2012	-		9.718	Continuing	Continuing	Continuing
Target Hardware Target Hardware/Multi-Class Components - 1	C/CPAF	Lockheed Martin Space Systems Company:Courtlund, AL	-	51.697	Jan 2012	61.073	Nov 2012	-		61.073	Continuing	Continuing	Continuing
Target Hardware Target Hardware/Multi-Class Components - 2	C/CPAF	Lockheed Martin Space Systems Company:United Kingdom	-	2.780	Jan 2012	3.367	Nov 2012	-		3.367	Continuing	Continuing	Continuing
Target Hardware Target Hardware/Multi-Class Components - 4	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	-		7.603	Nov 2012	-		7.603	Continuing	Continuing	Continuing
Target Hardware Target Hardware/SRBM - 1	C/CPAF	Lockheed Martin Space Systems Company:Courtlund, AL	-	12.631	Jan 2012	-		-		-	12.631	25.262	12.631
Target Hardware Target Hardware/SRBM - 5	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	5.803	Jan 2012	-		-		-	5.803	11.606	5.803
Target Hardware Target Hardware/SRBM - 6	C/FFP	Orbital Sciences Corporation:Chandler, AZ	-	1.310	Jan 2012	-		-		-	1.310	2.620	1.310
Target Hardware Target Hardware/SRBM - 8	MIPR	Missile Defense Agency:Huntsville, AL	-	3.990	Jan 2012	-		-		-	3.990	7.980	3.990
Target Hardware Target Hardware/MRBM - 3	C/CPAF	L3 Communications/ Coleman Aerospace:Orlando, FL	-	28.782	Jan 2012	-		-		-	28.782	57.564	28.782
Target Hardware Target Hardware/MRBM - 4	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	-	1.968	Jan 2012	-		-		-	1.968	3.936	1.968
Target Hardware Target Hardware/MRBM - 5	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	-	0.560	Jan 2012	-		-		-	0.560	1.120	0.560

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Target Hardware Target Hardware/IRBM - 1	C/CPAF	Lockheed Martin Space Systems Company:Courtland, AL	-	11.916	Jan 2012	-		-		-	11.916	23.832	11.916	
Target Hardware Target Hardware/IRBM - 3	C/CPAF	Lockheed Martin Space Systems Company:Courtland, AL	-	2.262	Jan 2012	-		-		-	2.262	4.524	2.262	
Target Hardware Target Hardware/Multi-Class Components - 3	C/CPAF	Lockheed Martin Space Systems Company:Courtland, AL	-	2.786	Jan 2012	-		-		-	2.786	5.572	2.786	
Target Hardware Target Hardware/Multi-Class Components - 5	FFRDC	Massachusetts Institute of Technology, Lincoln Lab:Lexington, MA	-	0.653	Jan 2012	-		-		-	0.653	1.306	0.653	
Target Hardware Target Hardware/Multi-Class Components - 6	FFRDC	Sandia National Laboratories:Albuquerque, NM	-	2.559	Jan 2012	-		-		-	2.559	5.118	2.559	
Program Operations Program Operations - 1	C/CPAF	Targets MiDAESS Support:Huntsville, AL	-	34.734	Dec 2011	35.325	Nov 2012	-		-	35.325	Continuing	Continuing	Continuing
Program Operations Program Operations - 2	C/FFP	CACI:Huntsville, AL	-	0.169	Jan 2012	0.172	Nov 2012	-		-	0.172	Continuing	Continuing	Continuing
Program Operations Program Operations - 4	C/FFP	Tecolote Research, Inc.:Huntsville, AL	-	0.086	Jan 2012	0.087	Nov 2012	-		-	0.087	Continuing	Continuing	Continuing
Program Operations Program Operations - 5	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	-	-		0.253	Nov 2012	-		-	0.253	Continuing	Continuing	Continuing
Program Operations Program Operations - 6	FFRDC	Johns Hopkins University, Applied Physics Lab:Baltimore, MD	-	0.316	Jan 2012	0.353	Nov 2012	-		-	0.353	Continuing	Continuing	Continuing
Program Operations Program Operations - 7	MIPR	US Army Aviation & Missile Command:Huntsville, AL	-	1.022	Jan 2012	1.212	Nov 2012	-		-	1.212	Continuing	Continuing	Continuing
Program Operations Program Operations - 8	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	-	0.674	Dec 2011	0.746	Nov 2012	-		-	0.746	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations Program Operations - 9	MIPR	US Air Force Space & Missile Systems Center (SMC):Albuquerque, NM	-	0.702	Dec 2011	1.099	Nov 2012	-		1.099	Continuing	Continuing	Continuing
Program Operations Program Operations - 10	MIPR	Missile Defense Agency:Huntsville, AL	-	20.264	Dec 2011	20.593	Nov 2012	-		20.593	Continuing	Continuing	Continuing
Program Operations Program Operations - 3	C/FFP	Colsa Corporations:Huntsville, AL	-	1.052	Dec 2011	-		-		-	1.052	2.104	1.052
Target Support Target Support/Systems Engineering - 1	C/CPAF	Lockheed Martin Space Systems Company:Courtlund, AL	-	21.163	Dec 2011	23.650	Nov 2012	-		23.650	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 2	FFRDC	Aerospace Corporation:El Segundo, CA	-	2.535	Jan 2012	4.134	Nov 2012	-		4.134	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 3	C/FFP	Northrop Grumman Space Systems:Albuquerque, NM	-	3.651	Jan 2012	3.082	Nov 2012	-		3.082	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 4	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	-	0.016	Jan 2012	0.042	Nov 2012	-		0.042	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 5	C/FFP	Wyle Laboratories:Huntsville, AL	-	0.941	Jan 2012	0.399	Nov 2012	-		0.399	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 6	FFRDC	Johns Hopkins University, Applied Physics Lab:Baltimore, MD	-	0.522	Dec 2011	1.090	Nov 2012	-		1.090	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 7	MIPR	US Air Force Space & Missile Systems Center (SMC):Albuquerque, NM	-	0.904	Dec 2011	1.385	Nov 2012	-		1.385	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Target Support Target Support/Systems Engineering - 8	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	-	8.484	Jan 2012	8.405	Nov 2012	-		8.405	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 12	MIPR	Defense Finance & Accounting Service:Indianapolis, IN	-	0.382	Jan 2012	0.463	Nov 2012	-		0.463	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 1	C/CPAF	Lockheed Martin Space Systems Company:Courland, AL	-	3.138	Jan 2012	4.977	Nov 2012	-		4.977	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 2	C/CPFF	Alliant Techsystems, Inc. (ATK):Magna, UT	-	0.790	Jan 2012	1.277	Nov 2012	-		1.277	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 3	C/FFP	Aerojet Corporation:Albuquerque, NM	-	0.342	Jan 2012	0.536	Nov 2012	-		0.536	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 4	C/FFP	Alliant Techsystems, Inc. (ATK):Magna, UT	-	1.350	Jan 2012	3.045	Nov 2012	-		3.045	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 5	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	-	0.113	Jan 2012	0.109	Nov 2012	-		0.109	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 6	MIPR	Hill Air Force Base:Ogden, UT	-	0.836	Jan 2012	1.497	Nov 2012	-		1.497	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 7	MIPR	Missile Defense Agency:Huntsville, AL	-	-		6.726	Nov 2012	-		6.726	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 8	MIPR	Naval Air Warfare Center, China Lake:China Lake, CA	-	1.400	Jan 2012	1.695	Nov 2012	-		1.695	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 10	MIPR	National Security Agency:Albuquerque, NM	-	-		0.848	Nov 2012	-		0.848	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 11	MIPR	Naval Surface Warfare Center :Crane, IN	-	0.067	Dec 2011	4.674	Nov 2012	-		4.674	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 12	MIPR	Redstone Arsenal Garrison:Huntsville, AL	-	1.424	Dec 2011	1.725	Nov 2012	-		1.725	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Support Target Support/Logistics - 14	MIPR	US Army Joint Munitions Command:Hawthorne Army Depot, NV	-	0.047	Jan 2012	0.057	Nov 2012	-		0.057	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 15	MIPR	US Naval Weapons Station:Earl, NJ	-	0.035	Jan 2012	0.042	Nov 2012	-		0.042	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 16	MIPR	US Property & Fiscal Office for Arizona:Phoenix, AZ	-	0.929	Jan 2012	2.258	Nov 2012	-		2.258	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 18	MIPR	Defense Finance & Accounting Service:Indianapolis, IN	-	0.284	Jan 2012	0.633	Nov 2012	-		0.633	Continuing	Continuing	Continuing
Target Support Target Support/Logistics - 19	C/FFP	Northrop Grumman Space Systems:Albuquerque, NM	-	0.620	Jan 2012	0.751	Nov 2012	-		0.751	Continuing	Continuing	Continuing
Target Support Target Support/Systems Engineering - 9	C/CPAF	L3 Communications/ Coleman Aerospace:Orlando, FL	-	0.922	Jan 2012	-		-		-	0.922	1.844	0.922
Target Support Target Support/Systems Engineering - 10	FFRDC	Sandia National Laboratories:Albuquerque, NM	-	0.227	Jan 2012	-		-		-	0.227	0.454	0.227
Target Support Target Support/Logistics - 9	MIPR	New Mexico State University Physical Sciences Lab:Las Cruces, NM	-	0.162	Jan 2012	-		-		-	0.162	0.324	0.162
Target Support Target Support/Logistics - 13	MIPR	Redstone Technical Test Center:Huntsville, AL	-	0.502	Jan 2012	-		-		-	0.502	1.004	0.502
Target Support Target Support/Logistics - 17	MIPR	US Army White Sands Missile Range:White Sands, NM	-	0.132	Jan 2012	-		-		-	0.132	0.264	0.132
Subtotal			-	454.357		414.696		-		414.696			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>			PROJECT MT05: <i>BMDS Targets Program</i>					
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	454.357		414.696		-		414.696			

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)							△																					
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)							△																					
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)											△																	
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 9)													△															
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)								△																				
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)														△														
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 15)																△												
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 16)																							△					
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)								△																				
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 4)											△																	
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 5)																△												
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 6)																							△					
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 7)																										△		

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)							△																					
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 14)						△																						
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 12)															△													
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 5)																							△					
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 6)																												△
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 7)																												△
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)							△																					
SRALT (SRBM) Pre-Ship Readiness Review (Ship Set 2)								△																				
IRBM Type 1/Type 2 Preliminary Design Review						△																						
IRBM Type 1/Type 2 Critical Design Review							△																					
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 1)											△																	
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 2)												△																
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)													△															
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)														△														
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)															△													
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)																△												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)																	△											
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)																		△										
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)																				△								

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 10)																						△						
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 11)																							△					
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 12)																								△				
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 13)																									△			
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 14)																										△		
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 15)																											△	
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 16)																												△
LV-2 Pre-Ship Readiness Review (Ship Set 4)							△																					
LV-2 Pre-Ship Readiness Review (Ship Set 5)													△															
LV-2 Pre-Ship Readiness Review (Ship Set 6)													△															
MRBM Type 3 Critical Design Review																												
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)														△														
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 2)															△													
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 3)																△												
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 4)																	△											
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 5)																												△
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 6)																												△
eMRBM Critical Design Review							▲																					
eMRBM Pre-Ship Readiness Review (Ship Set 1)																												
eMRBM Pre-Ship Readiness Review (Ship Set 2)																												
eMRBM Pre-Ship Readiness Review (Ship Set 3)																												
eMRBM Pre-Ship Readiness Review (Ship Set 4)																												
eMRBM Pre-Ship Readiness Review (Ship Set 5)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
E-LRALT (MRBM) Pre-Ship Readiness Review (Ship Set 1)								△																				
E-LRALT (MRBM) Pre-Ship Readiness Review (Ship Set 2)											△																	
ICBM Booster #3 Pre-Ship Readiness Review																												△
ICBM Booster #2 Pre-Ship Readiness Review																				△								
ICBM Booster #1 Pre-Ship Readiness Review																△												
ICBM Booster #4 Pre-Ship Readiness Review																												△

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)	3	2012	3	2012
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)	3	2012	3	2012
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 10)	2	2013	2	2013
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 11)	2	2013	2	2013
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 12)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 9)	3	2013	3	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 11)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 12)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 13)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 14)	3	2013	3	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 15)	4	2014	4	2014
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 16)	2	2016	2	2016
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)	3	2012	3	2012
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 4)	1	2013	1	2013
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 5)	4	2014	4	2014
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 6)	2	2016	2	2016
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 7)	4	2016	4	2016
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 14)	2	2012	2	2012
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 12)	2	2015	2	2015
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 5)	4	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 6)	4	2017	4	2017
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 7)	4	2017	4	2017
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
SRALT (SRBM) Pre-Ship Readiness Review (Ship Set 2)	4	2012	4	2012
IRBM Type 1/Type 2 Preliminary Design Review	2	2012	2	2012
IRBM Type 1/Type 2 Critical Design Review	4	2012	4	2012
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 1)	1	2014	1	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 2)	2	2014	2	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)	3	2014	3	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)	4	2014	4	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)	1	2015	1	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)	2	2015	2	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)	3	2015	3	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)	4	2015	4	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)	1	2016	1	2016
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 10)	2	2016	2	2016
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 11)	3	2016	3	2016
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 12)	4	2016	4	2016
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 13)	1	2017	1	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 14)	2	2017	2	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 15)	3	2017	3	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 16)	4	2017	4	2017
LV-2 Pre-Ship Readiness Review (Ship Set 4)	3	2012	3	2012
LV-2 Pre-Ship Readiness Review (Ship Set 5)	1	2014	1	2014
LV-2 Pre-Ship Readiness Review (Ship Set 6)	1	2014	1	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
MRBM Type 3 Critical Design Review	2	2013	2	2013
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)	1	2014	1	2014
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 2)	2	2014	2	2014
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 3)	3	2014	3	2014
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 4)	1	2015	1	2015
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 5)	4	2017	4	2017
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 6)	4	2017	4	2017
eMRBM Critical Design Review	2	2012	2	2012
eMRBM Pre-Ship Readiness Review (Ship Set 1)	2	2013	2	2013
eMRBM Pre-Ship Readiness Review (Ship Set 2)	2	2013	2	2013
eMRBM Pre-Ship Readiness Review (Ship Set 3)	1	2014	1	2014
eMRBM Pre-Ship Readiness Review (Ship Set 4)	2	2014	2	2014
eMRBM Pre-Ship Readiness Review (Ship Set 5)	3	2014	3	2014
E-LRALT (MRBM) Pre-Ship Readiness Review (Ship Set 1)	4	2012	4	2012
E-LRALT (MRBM) Pre-Ship Readiness Review (Ship Set 2)	3	2013	3	2013
ICBM Booster #3 Pre-Ship Readiness Review	4	2017	4	2017
ICBM Booster #2 Pre-Ship Readiness Review	4	2015	4	2015
ICBM Booster #1 Pre-Ship Readiness Review	4	2014	4	2014
ICBM Booster #4 Pre-Ship Readiness Review	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603915C: <i>Ballistic Missile Defense Targets</i>				MD40: <i>Program Wide Support</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	-	-	21.051	-	21.051	23.969	24.675	20.077	24.647	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

Program Wide Support was previously captured in BMD Test and Targets PE 0603888C (Budget Project MD40) for FY 2011 and BMD Enabling PE 0603890C (Budget Project MD40) for FY 2012.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) consists of essential non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts.

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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	-	21.051
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Refer to BMD Test and Targets Budget Project MD40 PE 0603888C.			
FY 2012 Plans: Refer to BMD Enabling Budget Project MD40 PE 0603890C.			
FY 2013 Plans: See paragraph A, Mission Description and Budget Item Justification.			
Accomplishments/Planned Programs Subtotals	-	-	21.051

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MD40: <i>Program Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	286.142	306.185	276.338	-	276.338	127.235	113.677	47.718	56.193	Continuing	Continuing
MD68: <i>AEGIS Ashore</i>	286.142	295.101	245.211	-	245.211	120.817	85.628	45.358	53.337	Continuing	Continuing
MT68: <i>Aegis Ashore Test</i>	-	-	17.100	-	17.100	-	22.500	-	-	0.000	39.600
MD40: <i>Program-Wide Support</i>	-	11.084	14.027	-	14.027	6.418	5.549	2.360	2.856	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

This program supports the development of a land based Standard Missile-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 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 (2011 timeframe): Focuses on the protection against short and medium-range ballistic missiles. As part of phase 1, which is already underway, the United States has deployed multi-mission Aegis ships with BMD capability and the SM-3 Block IA missile. Phase I also included establishing a separate forward-based AN/TPY-2 radar in Turkey to provide a cue to multi-mission Aegis ships with BMD capability and to future Aegis Ashore sites for launch on remote engagements.

Phase II OF EPAA (2015 timeframe): 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 timeframe): 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.

Phase IV OF EPAA (2020 timeframe): Deploys another upgraded missile, the SM-3 Block IIB, to provide region-wide coverage as well as limited capabilities against a potential ICBM threat from the Middle East.

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>
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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, 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 2015. A second AAMDS will be deployed to Poland in 2018 as part of the EPAA.

MDA approved the acquisition strategy in FY 2010.

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	281.378	306.595	149.320	-	149.320
Current President's Budget	286.142	306.185	276.338	-	276.338
Total Adjustments	4.764	-0.410	127.018	-	127.018
• Congressional General Reductions	-1.932	-0.410			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	7.784	-			
• SBIR/STTR Transfer	-1.788	-			
• Other Adjustment	0.700	-	127.018	-	127.018

Change Summary Explanation

FY 2011 increase of \$7.784M and FY 2013 increase of \$127.018M reflects a realignment of Department of Defense priorities to ensure the program is ready on Presidential timeline.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD68: <i>AEGIS Ashore</i>	286.142	295.101	245.211	-	245.211	120.817	85.628	45.358	53.337	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

The Aegis Ashore project 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 will re-host the required BMD components of a Navy Destroyer in an ashore configuration to include SPY RADAR, Vertical Launch System, computing infrastructure, C4I systems, and operator consoles.

In 2013/2014, the Aegis Ashore program office will install the Aegis Ashore Missile Defense Test Complex (AAMDTC) at Pacific Missile Range Facility (PMRF) on Kauai, Hawaii to provide proof of concept, system verification and validation of the first shore-based operation and support deployment decisions. The AAMDTC will also be used to support development and testing of future upgrades incremental capabilities and will provide the critical feedback required for refinement of the shore-based system architecture such that Initial Operational Capability (IOC) is achieved by 2015 in accordance with the MDA schedule for Aegis Ashore, and in accordance with the National Defense Authorization Act (NDAA) for FY 2011.

Deployed sites, referred to as an Aegis Ashore Missile Defense System (AAMDS) will be able to be modified to support future computer program and missile variant in accordance with the Phased Adaptive Approach (PAA). The initial AAMDS will be deployed to Romania in 2015 and will employ Advanced Capability Build 12 (ACB 12)/Aegis BMD 5.0 and SM-3 Block 1B. A second AAMDS will be deployed to Poland in 2018 in accordance with the PAA. This site will provide an Aegis Ashore exoatmospheric defense against short to medium and intermediate range ballistic missile threats in the later stages of flight. If threat dictates, additional systems could be procured and deployed globally to support Geographic Combatant Commanders. The deployed sites will be capable of being upgraded to address current and future ballistic missile threats.

The Aegis Ashore Radar Deckhouse will be fabricated, erected and used to test the Pacific Missile Range Facility (PMRF) equipment at the Lockheed Martin Moorestown, NJ campus. The associated foundation and utilities at Moorestown will be funded by RDT&E under the authority of 10 USC 2353. Once the PMRF equipment testing is completed in the NJ Deckhouse, the PMRF equipment will be shipped to PMRF, where it will be installed and integrated into an identical deckhouse located at the PMRF. The Aegis Ashore Deckhouse at NJ will be subsequently used for the first host nation. This dual deckhouse approach is required to reduce risk at PMRF and will result in fabrication and construction efficiencies.

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

	FY 2011	FY 2012	FY 2013
Title: AWS Development	256.869	260.379	213.821

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> -Completed System Requirements Review -Completed AAMDS Design -Conducted System Design Review -Conducted Preliminary Design Review -Procured long lead material for PMRF/removable enclosures/deckhouse -Conducted development trades to support deployment decisions -Started construction at PMRF -Started construction in New Jersey -Conducted Critical Design Review -Started Integration and Test in New Jersey -Procured Spares -Modification of test missiles to meet PMRF testing requirements <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Award Deckhouse Fabrication Contract -Deliver Weapon System and equipment skids to New Jersey -Deliver Multi-Mission Signal Processor (MMSp) #1 -Procure long lead material for Host Nation (HN) 1 -Ship Deckhouse and Aegis Weapon System components to Hawaii <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete Construction of Host Nation 1 Deckhouse in New Jersey -Complete Integration and test of PMRF Weapon System in New Jersey -Complete installation of Deckhouse, Deckhouse Support Building, and Launcher at PMRF -Deliver equipment to Pacific Missile Range Facility (PMRF) -Deliver Weapon System and equipment skids to PMRF -Conduct Aegis Light-Off of completely integrated system -Complete Integration and Test in PMRF -Deliver Host Nation 1 Weapon System and equipment skids for Integration and Testing in New Jersey <p>Title: Global Deployment Operations</p>	0	0	0
	18.898	23.299	24.189

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<i>Articles:</i>		0	0	0
Description: See Description Below				
FY 2011 Accomplishments: This effort provides operations support across all MDA Global Deployments. It provides for civilian salaries and travel. In addition, it provides other technical and business operations support services, technical oversight, and performance analysis provided by Federally Funded Research and Development Centers (FFRDCs) and Advisory & Assistance Services.				
FY 2012 Plans: This effort will continue to provide operations support as described for FY 2011. FFRDC analysis will ramp up to support integration, testing, and check-out for the Hawaii site.				
FY 2013 Plans: -Provide operations support for all MDA Global Deployments to include civilian salaries, Contractor Support Services (CSS), FFRDC and travel. Manpower and travel requirements ramp up to support Romania site activation				
Title: Site Activation		10.375	11.423	7.201
<i>Articles:</i>		0	0	0
Description: See Description Below				
FY 2011 Accomplishments: -Continued feasibility assessments in support of site selection Aegis Ashore in Romania. -Began Site Activation for Aegis Ashore Missile Defense Test Complex at PMRF.				
FY 2012 Plans: -Continue Site Activation for Aegis Ashore site.				
FY 2013 Plans: -Continue Site Activation for Aegis Ashore site at PMRF. -Begin Site Activation for Aegis Ashore site in Romania.				
Accomplishments/Planned Programs Subtotals		286.142	295.101	245.211

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	299.767	473.843	420.630		420.630	273.926	200.699	185.007	46.103	Continuing	Continuing

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 PMRF and Host Nations.

Aegis Ashore intends to utilize existing Navy hardware contracts to the maximum extent possible. Competition will be used for acquiring any products or services by FY 2015.

Aegis Ashore will award one contract using both RDT&E and MILCON appropriations for the fabrication and installation of the AA Deckhouse, Launch Facility, and Deckhouse Support Building. This will be a competitive award.

Competition is the intended Acquisition Strategy for PAA Phase III and IV.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
AWS Development and Hardware - MD68	SS/CPAF	Lockheed Martin:Moorestown, NJ and NAVSEA	228.374	197.903	Jan 2012	148.651	Jan 2013	-		148.651	Continuing	Continuing	Continuing
AWS Development Technical Design Agent- MD68 - 20117143581595	MIPR	JHU/APL:Columbia, MD	7.100	4.291	Nov 2011	3.970	Nov 2012	-		3.970	Continuing	Continuing	Continuing
AWS Development Design, SEPM, ILS, Test Integration - MD68 - 20117143581602	MIPR	NSWC PHD:Port Hueneme, CA	5.000	3.208	Nov 2011	4.967	Nov 2012	-		4.967	Continuing	Continuing	Continuing
AWS Development AWS Design, SEPM, Integration , Test and Certification - MD68 - 20117143581603	MIPR	NSWC Dahlgren:Dahlgren, VA	15.007	12.310	Nov 2011	16.000	Nov 2012	-		16.000	Continuing	Continuing	Continuing
AWS Development VLS Design and Hardware - MD68	MIPR	NAVSEA-LM/ BAE:Baltimore and Minneapolis	5.100	11.592	Dec 2011	7.000	Dec 2012	-		7.000	Continuing	Continuing	Continuing
AWS Development AWS Deckhouse design and engineering - MD68	MIPR	Huntsville, AL:NAVFAC	1.000	22.715	Dec 2011	13.033	Dec 2012	-		13.033	Continuing	Continuing	Continuing
AWS Development Flight Safety Support - MD68	SS/CPAF	Raytheon:Tucson, AZ	8.800	8.360	Dec 2011	-		-		-	Continuing	Continuing	Continuing
AWS Development C4I (SW, T&E, Spares, SEPM, ILS) - MD68	MIPR	SPAWAR:San Diego, CA	6.100	-		6.000	Oct 2012	-		6.000	Continuing	Continuing	Continuing
AWS Development Deckhouse - MD68	MIPR	NAVFAC:HI	25.500	-		14.200	Oct 2012	-		14.200	Continuing	Continuing	Continuing
Global Deployment Operations Global Deployment Operations - MD68	MIPR	NA:Huntsville, AL	18.898	23.299	Oct 2011	24.189	Oct 2012	-		24.189	Continuing	Continuing	Continuing
Site Activation Site Activation - MD68	MIPR	NA:Huntsville, AL	9.441	11.423	Nov 2011	7.201	Nov 2012	-		7.201	Continuing	Continuing	Continuing
Subtotal			330.320	295.101		245.211		-		245.211			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
FY 2012 increase attributable to Non-Tactical Hardware and Technical Design Agent requirements.

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

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	330.320	295.101	245.211	-	245.211			

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Aegis Ashore Critical Design Review					▲																							
AA ALO 1 (Moorestown, NJ)									△																			
AA ALO 2 (PMRF)													△															
ALO 3 (HN1)																					△							
Engineering Assessment											△																	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Ashore Critical Design Review	1	2012	1	2012
AA ALO 1 (Moorestown, NJ)	2	2013	2	2013
AA ALO 2 (PMRF)	1	2014	1	2014
ALO 3 (HN1)	4	2015	4	2015
Engineering Assessment	3	2013	3	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT68: <i>Aegis Ashore Test</i>	-	-	17.100	-	17.100	-	22.500	-	-	0.000	39.600
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

In 2013/2014, the Aegis Ashore program office will install the Aegis Ashore Missile Defense Test Complex (AAMDTC) at Pacific Missile Range Facility (PMRF) on Kauai, Hawaii to provide proof of concept, system verification and validation of the first shore-based operation, support deployment decisions and upgrade of future incremental capabilities. The Aegis Ashore Missile Defense System (AAMDS) will use Advanced Capability Build (ACB) 12/Aegis BMD 5.0 and SM-3 Block IB being developed by the USN and MDA to be certified in 2014 and will provide the critical feedback required for refinement of the shore-based system architecture such that Initial Operational Capability (IOC) is achieved by 2015 in accordance with the MDA schedule for Aegis Ashore, and in accordance with the National Defense Authorization Act (NDAA) for FY 2011. This site will be able to be modified to support future computer program and missile variants.

Aegis Ashore will leverage the proven Aegis BMD capability and deploy to the first host nation site in 2015. This initial site will employ ACB 12/Aegis BMD 5.0 and SM-3 Block 1B and will be capable of being upgraded in accordance with the Phased Adaptive Approach (PAA). A second system will be deployed in 2018 to a different location. This will provide an Aegis Ashore exoatmospheric defense against short to medium and intermediate range ballistic missile threats in the later stages of flight. If threat dictates, additional systems could be procured and deployed globally to support Geographic Combatant Commanders. The deployed sites will be capable of being upgraded to address current and future ballistic missile threats. The Aegis Ashore Radar Deckhouse will be fabricated, erected and used to test the PMRF equipment at the Lockheed Martin Moorestown, NJ campus. The associated foundation and utilities at Moorestown will be funded by RDT&E under the authority of 10 USC 2353. Once the PMRF equipment testing is completed in the NJ Deckhouse, the PMRF equipment will be shipped to PMRF, where it will be installed and integrated into an identical deckhouse located at the PMRF. The Aegis Ashore Deckhouse at NJ will be subsequently used for the first host nation. This dual deckhouse approach is required to reduce risk at PMRF and will result in fabrication and construction efficiencies.

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

	FY 2011	FY 2012	FY 2013
Title: Conduct AACTV-01 (DT Assist Event)	-	-	17.100
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: FY 2011 efforts funded in MD68.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
FY 2012 efforts funded in MD68			
<i>FY 2013 Plans:</i> -Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.			
Accomplishments/Planned Programs Subtotals	-	-	17.100

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Conduct AACTV-01 (DT Assist Event) Aegis Ashore Test MT68	MIPR	PMRF:Barking Sands Kauai, HI	-	-		6.025	May 2013	-		6.025	Continuing	Continuing	Continuing
Conduct AACTV-01 (DT Assist Event) Aegis Ashore Test MT68 - 20111219347329	MIPR	NSWC/ PHD:Pt. Heuneme, CA	-	-		1.950	May 2013	-		1.950	Continuing	Continuing	Continuing
Conduct AACTV-01 (DT Assist Event) Aegis Ashore Test MT68	MIPR	NAWC/ PM :Pt. Mugu, CA	-	-		1.500	May 2013	-		1.500	Continuing	Continuing	Continuing
Conduct AACTV-01 (DT Assist Event) Aegis Ashore Test MT68 - 201112193488909	MIPR	JHU/ APL :Laurel, MD	-	-		2.325	May 2013	-		2.325	Continuing	Continuing	Continuing
Conduct AACTV-01 (DT Assist Event) Aegis Ashore Test MT68	C/CPAF	L3 Communications :Waco, TX	-	-		0.850	Jul 2013	-		0.850	Continuing	Continuing	Continuing
Conduct AACTV-01 (DT Assist Event) Aegis Ashore Test MT68 - 201112193501551	MIPR	Aegis BMD:VA, CA, MA, MD	-	-		4.450	May 2013	-		4.450	Continuing	Continuing	Continuing
Subtotal			-	-		17.100		-		17.100			

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals		-		-		17.100		-		17.100	

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AA CTV-01 (Aegis Ashore Flight Test)													▲															
AA FTM-01 (Aegis Ashore Intercept Flight Test)														▲														
AA FTM-02 (Aegis Ashore Intercept Flight Test)															▲													
FTO-02 (Aegis/ THADD/ Patriot Multiple Engagement Flight Test)																				▲								

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AA CTV-01 (Aegis Ashore Flight Test)	2	2014	2	2014
AA FTM-01 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
AA FTM-02 (Aegis Ashore Intercept Flight Test)	4	2014	4	2014
FTO-02 (Aegis/ THADD/ Patriot Multiple Engagement Flight Test)	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	11.084	14.027	-	14.027	6.418	5.549	2.360	2.856	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2013, Program Wide Support reflects a proportional decrease as a result of decreases to the Land-Based SM-3.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	11.084	14.027
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Budget Project MD40 did not exist in FY 2011.			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	-	11.084	14.027

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	299.767	473.843	420.630	-	420.630	273.926	200.699	185.007	46.103	Continuing	Continuing
MD09: <i>SM-3 Block IIA Co-Development</i>	299.767	456.889	399.284	-	399.284	256.696	183.161	145.335	33.315	Continuing	Continuing
MT09: <i>SM-3 Block IIA Co-Development Test</i>	-	-	-	-	-	3.428	7.759	30.565	10.454	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	16.954	21.346	-	21.346	13.802	9.779	9.107	2.334	Continuing	Continuing

Note

NA

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 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 Japan Ministry of Defense (JMOD) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of an upgrade of the SM-3 Block (Blk) IB missile to a 21-inch diameter SM-3 missile (SM-3 Blk IIA). The objective of the SCD project is the development and initial at-sea flight test of the SM-3 Blk IIA missile, and prepare for a subsequent production decisions.

Key technology improvements planned for the SM-3 Blk 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 Memorandum of Understanding (MOU) 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 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 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), MDA has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, suitable, and survivable.

The Integrated Master Test Plan (IMTP) is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments. The bottom line is that MDA is focused on conducting meaningful ballistic missile testing that demonstrates the capabilities of the BMDS.

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	318.800	424.454	357.194	-	357.194
Current President's Budget	299.767	473.843	420.630	-	420.630
Total Adjustments	-19.033	49.389	63.436	-	63.436
• Congressional General Reductions	-2.189	-0.611			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	50.000			
• Reprogrammings	-9.999	-			
• SBIR/STTR Transfer	-6.845	-			
• Other Adjustment	-	-	63.436	-	63.436

Change Summary Explanation

The Consolidated Appropriation Act of FY 2012 (Public Law 112-74) directed transfer of \$50M from Line 69 (PE 0603902C, Next Generation Aegis Missile) to Line 110 (PE 0604881C, SM-3 Co-Development (SCD)) for Risk Reduction program adjustment.

FY 2013 adjustments resulted from a Jointly approved SCD Project re-plan in March 2011. The Propellant, Third Stage Rocket Motor (TSRM), Nosecone, and the Divert and Attitude Control System (DACS) PDRs were not completed in 1Q FY 2011 as scheduled. Subsequently the program was re-planned to include the addition of multiple engineering iterations to enable a more balanced engineering process with lower project execution risk.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD09: <i>SM-3 Block IIA Co-Development</i>	299.767	456.889	399.284	-	399.284	256.696	183.161	145.335	33.315	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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 SM-3. In FY 2006, the two countries signed a MOU for the co-development of an upgraded, 21-inch diameter SM-3 missile (SM-3 Blk IIA). The objective of the SCD project is the development and initial at-sea flight test of the SM-3 Blk IIA missile. The SM-3 Blk IIA missile will increase the area that can be defended by Aegis BMD and increase the probability of kill against a larger threat set. It will leverage enhanced capability provided by BMDS sensor upgrades. The SM-3 Blk IIA missile development will build upon established joint research investments by both the U.S. and Japan. The U.S. and Japan will equitable share both work and cost.

Key technology improvements planned for the SM-3 Blk IIA missile include an increase in velocity, an increase in range provided by a 21-inch diameter rocket motor propulsion stack, more than doubled seeker sensitivity and increased divert capability incorporated in an advanced kinetic warhead by more than three times. Key component technologies to be developed under this Annex include, but are not limited to: Lightweight nosecone, advanced kinetic warhead, 21-inch second stage rocket motor, and 21-inch third stage rocket motor.

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 (DACCS) development efforts and test plans, and conduct requirements definition for the SM-3 Blk 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 Blk IIA missile. Both parties will design, fabricate, test, and evaluate the SM-3 Block IIA missile sections per the agreed work-share.

Phase III will refine the scope of work from CDR to the completion of the SCD flight test program as defined in the Agreement. This phase defines developmental cost share agreements between the United States and the Government of Japan, completes component engineering and integration, executes cooperative flight tests, and continues discussions on production and maintenance options.

The SCD project will:

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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-Develop components for the SM-3 Blk IIA missile and integrate them into an All Up Round (AUR):

- 21`` 2nd and 3rd stage components (Japan work share)
- 21`` 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 VLS with Aegis ship systems:

- Includes development of a light weight VLS canister (United States work share)
- Conduct test and evaluation using ground- and flight testing using an early delivery of Aegis BMD 5.1 system (Plan until JUN2011 was to use a modified 4.0.1 system. Replan approved JUN2011) (Joint work share)

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

	FY 2011	FY 2012	FY 2013
<p>Title: SM-3 Blk IIA Development (SCD)</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p> <p>-SM-3 Blk IIA Missile Development:</p> <ul style="list-style-type: none"> -Completed Incremental Missile Section Level PDRs. Controlled Surface Assembly, TSRM Assembly/Attitude Control System, Nosecone, Guided Missile Assembly -Continued design progress towards missile section-level Critical Design Reviews (CDRs). -Commenced missile integration and test demo (Milestone 2) demonstrating preliminary functionality of guidance section hardware. -Conducted 2nd and 3rd stage motor structural and shock tests. -Conducted Preliminary 2nd and 3rd stage rocket motor static firing test. -Conducted technology maturation efforts for Focal Plane Array (FPA), and Read Out Integrated Circuit (ROIC) to obtain a Technical Readiness Level of 6 by CDR. -Initiated risk reduction effort with ATK for Divert Attitude Control System. 	<p>299.767</p> <p>0</p>	<p>456.889</p> <p>0</p>	<p>399.284</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>-BMD 4.0.1 Engineering Release (ENG REL) Development:</p> <ul style="list-style-type: none"> -Completed SCD In Process Review -Initiated BMD 4.0.1 (ENG REL) SDR preparation, to include model analysis support. SDR was not conducted due to government SCD Replan, which enables ability to conduct the SCD Flight Test Missions with an Aegis BMD 5.1 system. -Continued AWS/SM-3 BLK IIA interface development in support of SCD PDR -Completion of Technology Maturation Efforts for Canister Composite Shell Structure in support of Level 6 by SCD CDR -Completed MK 29 MOD 0 Canister PDR -Complete Class I ECP (Engineering Change Proposal) detailing Vertical Launch System (VLS) integration changes <p>-T&E:</p> <ul style="list-style-type: none"> -Continued requirements definition, Material Purchase and Fabrication of VLS Tilt Fixture and Enclosures for PTV-1 (Aegis Flight Test), CTV-1 (Aegis Flight Test) and CTV-2 (Aegis Flight Test) Ground Based Tests -Continued Test Document Preparation <p>FY 2012 Plans: (IAW Project Phase II Jointly approved re-plan)</p> <ul style="list-style-type: none"> --SM-3 Blk IIA Missile Development: <ul style="list-style-type: none"> -Begin missile section-level CDRs. -Obtain Weapons System Engineering Safety Review Board approval of missile safety design. -Complete Milestones 3 and 4 of the integrated system demonstration. -Complete planning for restrained firing test. -BMD 4.0.1 Engineering (ENG REL) Development was removed from Program of Record due to government SCD Replan, which enable ability to conduct the SCD Flight Test Missions with an Aegis BMD 5.1 system. Aegis BMD system being developed under PE 0603892C. <p>-VLS Canister</p> <ul style="list-style-type: none"> -Complete shock, vibration, temperature/humidity, and hydrostatic pressure testing of SM-3 Blk IIA Mark 29 Missile Canister. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-T&E: -Conduct analysis and planning for restrained firing test in FY 2013. FY 2013 Plans: (IAW Project Phase II Jointly approved re-plan) -Conduct SM-3 Blk IIA Propulsion Stack & System/Kinetic Warhead CDR. -Conduct Mk 29 Mod 0 Canister CDR. -Conduct and analyze results of Restrained Firing Test Event. -Begin procurement of SM-3 Blk IIA RDT&E Missile Rounds to support Flight Test program. -Demonstrate performance of missile sub-sections. -Hazard Assessment Test (HAT) 40FT Vertical Drop Test and Fast Cook-Off Test and analysis in preparation for CTV-1 (Aegis Flight Test).			
Accomplishments/Planned Programs Subtotals	299.767	456.889	399.284

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	999.068	85.569	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1,084.637
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	0.000	13.443	224.077		224.077	295.248	455.373	508.356	430.239	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	286.142	306.185	276.338		276.338	127.235	113.677	47.718	56.193	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>

D. Acquisition Strategy

The SM-3 Cooperative Development program for the SM-3 Blk 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 for procurement of any products or services, when appropriate.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09	SS/CPAF	RAYTHEON:AZ	591.214	357.534	Nov 2011	362.346	Nov 2012	-		362.346	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09 - 20117135426611	MIPR	NSWC/DD/VA:VA	13.120	4.090	Nov 2011	4.469	Nov 2012	-		4.469	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09 - 20117135426613	MIPR	JHU/APL:MD	27.919	16.826	Nov 2011	15.361	Nov 2012	-		15.361	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09 - 20117135426614	MIPR	MIT/LL:MA	4.503	1.395	Nov 2011	0.922	Nov 2012	-		0.922	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09 - 20117135426616	MIPR	NSWC/PHD:CA	6.815	0.426	Nov 2011	0.372	Nov 2012	-		0.372	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09 - 20117135426619	MIPR	NSWC IH:MD	5.553	0.452	Nov 2011	0.308	Nov 2012	-		0.308	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) SM-3 Bk IIA Development - MD09 - 2011713542662	MIPR	MDA:VA	12.916	7.567	Nov 2011	-	Nov 2012	-		-	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) BMD 4.0.1 Eng Rel - MD09	SS/CPAF	LOCKHEED MARTIN:NJ	26.611	16.412	Dec 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Bk IIA Development (SCD) BMD 4.0.1 Eng Rel - MD09 - 20117135426623	MIPR	SEG:CA	2.750	0.523	Dec 2011	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SM-3 Blk IIA Development (SCD) BMD 4.0.1 Eng Rel - MD09 - 20117135426625	MIPR	MDA:VA	1.234	1.435	Dec 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) BMD 4.0.1 Eng Rel - MD09 - 20117135426627	MIPR	NSWC/DD/VA:Dahlgren, VA	0.780	0.907	Dec 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) BMD 4.0.1 Eng Rel - MD09 - 20117135426628	MIPR	JHU/APL:MD	2.731	3.176	Dec 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) Testing & Evaluation - MD09	MIPR	NSWC/PHD:CA	1.500	3.600	Nov 2011	8.895	Nov 2012	-		8.895	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) SM-3 Blk IIA Canister - MD09	MIPR	BAE:MD	19.826	16.200	Dec 2011	5.911	Dec 2012	-		5.911	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) SM-3 Blk IIA VLS - MD09	MIPR	Lockheed Martin:Baltimore, MD	0.968	1.416	Dec 2011	-		-		-	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) Mission Assurance - MD09	MIPR	NSWC/DD/VA:Dahlgren, VA	0.400	0.600	Dec 2011	0.700	Dec 2012	-		0.700	Continuing	Continuing	Continuing
SM-3 Blk IIA Development (SCD) SCD - MD09	MIPR	MDA :VA	19.128	24.330	Dec 2011	-		-		-	Continuing	Continuing	Continuing
Subtotal			737.968	456.889		399.284		-		399.284			

Remarks
N/A

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		737.968	456.889		399.284	-		399.284			

Remarks
NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SM-3 BIK IIA DACS Risk Reduction Implementation Decision				▲																								
SM-3 BIK IIA DACS Preliminary Design Review (PDR)				▲																								
SM-3 BIK IIA KW Preliminary Design Review (PDR)					△																							
SM-3 BIK IIA System Preliminary Design Review (PDR)					△																							
SM-3 BIK IIA PS Critical Design Review (CDR)									△																			
SM-3 BIK IIA SYS/KW Critical Design Review (CDR)											△																	
Restrained Level Firing											◇																	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SM-3 Blk IIA DACS Risk Reduction Implementation Decision	1	2012	1	2012
SM-3 Blk IIA DACS Preliminary Design Review (PDR)	1	2012	1	2012
SM-3 Blk IIA KW Preliminary Design Review (PDR)	2	2012	2	2012
SM-3 Blk IIA System Preliminary Design Review (PDR)	2	2012	2	2012
SM-3 Blk IIA PS Critical Design Review (CDR)	2	2013	2	2013
SM-3 Blk IIA SYS/KW Critical Design Review (CDR)	4	2013	4	2013
Restrained Level Firing	2	2013	2	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>				PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MT09: <i>SM-3 Block IIA Co-Development Test</i>	-	-	-	-	-	3.428	7.759	30.565	10.454	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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. Upgrades to both the Aegis BMD Weapon System and the SM-3 configurations evolve Aegis BMD to provide effective, supportable defensive capability against more difficult threats.

Beginning in 2006, Aegis BMD and the Japan Ministry of Defense (JMOD) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of an upgrade of the SM-3 Blk IB missile to a 21-inch diameter SM-3 missile (SM-3 Blk IIA). The objective of the SCD project is the development and initial at-sea flight test of the SM-3 Blk IIA missile.

Key technology improvements planned for the SM-3 Blk 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. The U.S. and Japan will equitably share work.

Proving Missile Defense:

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

The Integrated Master Test Plan (IMTP) is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments. The bottom line is that MDA is focused on conducting meaningful ballistic missile testing that demonstrates the capabilities of the BMDS.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Title: SM-3 Co-Development Testing</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: No FY 2011 Effort, funding begins in FY 2014</p> <p>FY 2012 Plans: No FY 2012 efforts, funding begins in FY 2014</p> <p>FY 2013 Plans: No FY 2013 Efforts, funding begins in FY 2014</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>	<p>-</p> <p>0</p>
Accomplishments/Planned Programs Subtotals	-	-	-

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

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT						
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	MT09: <i>SM-3 Block IIA Co-Development Test</i>						
	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-	-	-	-	0.000	0.000	0.000

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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 CTV-01 (Aegis Flight Test)																												
SCD CTV-02 (Aegis Flight Test)																												
SCD PTV-01 (Aegis Flight Test)																												
SFTM-1 (Aegis Intercept Flight Test)																												
SFTM-2 (Aegis Intercept Flight Test)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SCD CTV-01 (Aegis Flight Test)	2	2015	2	2015
SCD CTV-02 (Aegis Flight Test)	4	2015	4	2015
SCD PTV-01 (Aegis Flight Test)	1	2014	1	2014
SFTM-1 (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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	16.954	21.346	-	21.346	13.802	9.779	9.107	2.334	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2013, Program Wide Support reflects a proportional increase as a result of adjustments to SM-3 Block IIA Co-Development.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development contracts (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	16.954	21.346
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: Budget Project did not exist in FY 2011.			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	-	16.954	21.346

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	36.693	80.723	297.375	-	297.375	267.505	285.529	326.073	354.190	Continuing	Continuing
MD10: <i>Precision Tracking Space System (PTSS)</i>	35.630	74.132	282.283	-	282.283	256.544	277.704	308.787	328.663	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	1.063	6.591	15.092	-	15.092	10.961	7.825	17.286	25.527	Continuing	Continuing

Note

N/A

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 successful launch of two Space Tracking & Surveillance System (STSS) demonstration satellites in 2009, the agency has assets on-orbit to validate remote sensor and fire control integration and inform the design and operation 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.

Goals and objectives for the PTSS are:

- Develop an operational missile tracking capability from space, which will close the BMDS fire control loop, specifically the Aegis Ballistic Missile Defense and Ground Based Interceptor weapon systems, by way of the BMDS battle manager.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604883C: <i>Precision Tracking Space System</i>

- 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 developmental 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 developmental satellite article design. Six Industry partners (Ball, Boeing, Lockheed Martin, Northrop Grumman, Orbital, and Raytheon) contribute to the national lab development effort to improve the Precision Tracking Space System design for manufacturability and reduce the production risk.
- Use data from the on-orbit Space Tracking & Surveillance System (STSS) demonstration satellite testing events
- Benchmark models and simulations.
- Allocate requirements, interface controls, and evaluate operations concepts.
- Leverage experience gained from STSS test events to demonstrate capability and insight into Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance linkages and hand off to the Aegis Ballistic Missile Defense fire control system.
- Develop a government owned design to foster production competition over the life of the program.

The Precision Tracking Space System (PTSS) contributes to defense of the U.S. Homeland and regional, missile defense, including large raid protection.

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

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	66.969	160.818	272.881	-	272.881
Current President's Budget	36.693	80.723	297.375	-	297.375
Total Adjustments	-30.276	-80.095	24.494	-	24.494
• Congressional General Reductions	-0.250	-0.095			
• Congressional Directed Reductions	-	-80.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-30.000	-			
• Reprogrammings	-0.026	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	24.494	-	24.494

Change Summary Explanation

The launch of the developmental satellites is 4Q FY 2017, a 12-month change from the date reported in the FY 2012 President's Budget. The Precision Tracking Space System (PTSS) schedule was affected by several fact-of-life events, namely:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

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

R-1 ITEM NOMENCLATURE
PE 0604883C: *Precision Tracking Space System*

- The seven-month continuing resolution in FY 2011 that restricted PTSS development to only those activities that were authorized in FY 2010.
- The FY 2011 decrease of \$30M reflects a congressional reduction (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)).
- The FY 2012 decrease of \$80M reflects a congressional reduction (Consolidated Appropriation Act of FY 2012 (Public Law 112-74)).
- The FY 2013 increase reflects realignment of DoD priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>				PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD10: <i>Precision Tracking Space System (PTSS)</i>	35.630	74.132	282.283	-	282.283	256.544	277.704	308.787	328.663	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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 in FY 2013. 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 developmental satellite articles using an integrated ground control system in FY 2017. The PTSS developmental 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.

PTSS supports essential BMDS functions by:

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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- 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 SM3-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 collocation 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.

The launch of the developmental satellites is 4Q FY 2017, a 12-month change from the date reported in the FY 2012 President's Budget. The PTSS schedule was affected by several fact-of-life events, namely:

- The seven-month continuing resolution in FY 2011 that restricted PTSS development to only those activities that were authorized in FY 2010.
- An appropriation reduction of \$30M (45%) in the FY 2011 spending bill that limited the pace of activities in the first year as a program of record.
- A continuing resolution in FY 2012 that held back the pace of development to that of the appropriated FY 2011 program.
- An appropriation reduction of \$80M (50%) in FY 2012 that will further slow planned activities in FY 2012.

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

	FY 2011	FY 2012	FY 2013
Title: Precision Tracking Space System	35.630	74.132	282.283
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> -Completed trades, alternatives analysis, technology readiness assessment, and concept review for PTSS -Conducted systems engineering efforts to allocate performance between the space segment and ground segment -Determined location of PTSS ground entry points and interfaces to the BMDS -Defined and documented internal and external interfaces including track quality and timeliness requirements for successful Command and Control, Battle Management and Communications and sensor integration -Allocated functions among major components (satellite, ground station, and command and control) -Defined feasible system implementation to meet requirements including establishing technical trades Conducted integrated fire-control risk reduction activity with software-in-the-loop testing initially, but moving towards more complicated hardware-in-the-loop testing -Conducted System Requirements Review / System Design Review-1 -Awarded 6 subcontracts to industry (Ball, Boeing, Lockheed Martin, Northrop Grumman, Orbital, and Raytheon) to join the Integrated Systems Engineering Team (ISET) during developmental satellite article design for manufacturability and producibility analyses -Completed joint AFSPC / MDA study on the use of the PTSS design for Space Situational Awareness (SSA) <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Complete the requirements and conceptual designs for subsystems in the satellite bus, optical payload and communications payload -Complete conceptual design of the ground entry point; begin procurement and equipment installation to support 2014 segment test -Complete conceptual design of engineering models for satellite bus, optical payload and communications payload -Complete initial test bed approach for the space segment (satellite bus, optical payload and communications payload) -Complete baseline mission trajectory design -Complete preliminary architect-engineer (A-E) design of the PTSS ground segment components necessary to support developmental article testing -Jointly with the Air Force, evaluate options for warfighter tasking and data processing to take advantage of the inherent capability of PTSS for other missions, such as SSA <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Characterize and obtain measurements from the breadboard models of the optical tracking and communications payload subassemblies -Complete preliminary design for subsystems in the satellite bus, optical payload and communications payload -Develop initial test beds for system components including command and data handler, communication payload data handler, optical payload data processing unit and communications crosslinks -Complete first-pass of focal plane array (FPA) read-out integrated circuits and detectors; deliver the FPA prototype 				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-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 C2BMC ICD functional and physical interface definitions (signed ICD) -Complete system preliminary design review -Complete architecture and engineering of PTSS Ground Entry Point (GEP)			
Title: FY 2010 Accomplishments Description: See Description Below FY 2011 Accomplishments: NA FY 2012 Plans: NA FY 2013 Plans: NA	- 0	- 0	- 0
Articles:			
Accomplishments/Planned Programs Subtotals	35.630	74.132	282.283

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	401.113	415.048	362.711		362.711	339.197	373.346	395.350	394.085	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,530.767	988.928	992.407		992.407	960.870	950.097	1,030.201	958.680	Continuing	Continuing
• 0603893C: <i>Space Tracking & Surveillance System</i>	105.580	96.232	51.313		51.313	45.355	32.423	34.195	35.087	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603914C: <i>Ballistic Missile Defense Test</i>	0.000	487.699	454.400		454.400	420.357	446.542	373.395	421.632	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	0.000	454.357	435.747		435.747	475.175	505.591	406.931	485.950	0.000	2,763.751

D. Acquisition Strategy

- PTSS will leverage the technical expertise of Federally Funded Research and Development Centers, University Affiliated Research Centers, National and DoD Laboratories.
- A national lab team will develop the PTSS development satellites and ground segment in a nonproprietary environment; that government owned design will foster production competition over the life cycle of the program. The team is comprised of Johns Hopkins University Applied Physics Laboratory, Department of Energy's Sandia National Laboratories, Utah State University's Space Dynamics Laboratory, Massachusetts Institute of Technology Lincoln Laboratory and the Naval Research Laboratory. The development article effort will define the system performance of the production system. MDA will discourage subcontractors and suppliers on the development program from establishing exclusive teaming arrangements with potential bidders on the production program to maximize competition on the production program source selection. Once system performance is established through test, the Development Articles will be transitioned by the government, with the national laboratory team technical support, to the Air Force as lead service.
- PTSS awarded contracts to incorporate industry early in the laboratory-led phase via the PTSS ISET. Industry examined candidate system, subsystem and component designs for manufacturing and producibility and provided feedback to inform the overall design.
- The acquisition strategy for the launch of PTSS satellites is to competitively award launch vehicle and launch services contracts. MDA plans to use the Air Force as the contracting entity for PTSS launch vehicles and services. The first two development satellites are compatible with the existing Evolved Expendable Launch Vehicle (EELV) class of launch vehicles and future satellites will be compatible with multiple launch vehicles, including EELV-class and others as they become available in the commercial marketplace.
- For production of the constellation, we will fully, openly, and competitively award a contract with industry between Preliminary Design Review and Critical Design Review. It is projected that industry participants on the ISET will be among the bidders in the production competition in an acquisition strategy that will mitigate the transition risk to industry.
- To take advantage of commercial advances in space-qualified parts and satellite subsystems as well as industry's own production processes, MDA expects industry to adapt and transition the development satellite design into the production design as well as facilitate testing and on-orbit check out prior to a production decision.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Precision Tracking Space System Space and Ground Segment	Various	Various:Various	32.066	61.393	Jan 2012	263.076	Jan 2013	-		263.076	Continuing	Continuing	Continuing
Subtotal			32.066	61.393		263.076		-		263.076			

Remarks

None.

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

Remarks

None.

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

Remarks

None.

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Precision Tracking Space System MDA Civilians	Allot	MDA:Various	0.574	2.635	Jan 2012	3.832	Jan 2013	-		3.832	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Precision Tracking Space System OGA Civilians	MIPR	NRL:Washington, D.C.	0.360	0.360	Jan 2012	0.371	Jan 2013	-		0.371	Continuing	Continuing	Continuing
Precision Tracking Space System Travel and Transportation	Allot	MDA:Various	0.068	0.195	Jan 2012	0.227	Jan 2013	-		0.227	Continuing	Continuing	Continuing
Precision Tracking Space System Contractor Support Services	C/CPFF	MDA:Various	2.562	8.295	Jan 2012	13.485	Jan 2013	-		13.485	Continuing	Continuing	Continuing
Precision Tracking Space System FFRDC	MIPR	Aerospace:Various	-	1.254	Jan 2012	1.292	Jan 2013	-		1.292	Continuing	Continuing	Continuing
Subtotal			3.564	12.739		19.207		-		19.207			

Remarks
None.

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.630	74.132	282.283	-	282.283			

Remarks
None.

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Space Situational Awareness Joint Study Complete	▲																											
Integrated System Engineering Team Contract Awards		▲																										
Precision Tracking Space System Developmental Article Initiation		▲																										
Developmental Article System Requirements Review-1		▲																										
Optical Payload Study Complete				▲																								
Developmental Article System Requirements Review-2							△																					
Technology Development Decision							☆																					
Optical Payload Breadboard Subassemblies Complete									△																			
Developmental Article Preliminary Design Review										△																		
Ground Segment Component Implementation											+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Product Development Decision												☆																
OPIR Cue to Track Algorithms Complete													△															
Production Preparation Decision													☆															
Production Preparation Contract Award													☆															
Developmental Article Critical Design Review														△														
Optical Payload Engineering Model Complete														△														
Satellite Flight Fabrication Complete															△													
Subsystem Algorithms Integrated Complete																△												
Long Lead Authorization																	☆											
Optical Payload Flight Assembly Complete																		△										
Communications Payload Flight Assembly Complete																			△									
Satellite Assembly Complete																				△								
Ground Segment Component Complete																					△							
Pre-Environmental Review																						△						
Pre-Ship Review																								△				
Developmental Articles Launch																									△		△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Space Situational Awareness Joint Study Complete	1	2011	1	2011
Integrated System Engineering Team Contract Awards	2	2011	2	2011
Precision Tracking Space System Developmental Article Initiation	2	2011	2	2011
Developmental Article System Requirements Review-1	2	2011	2	2011
Optical Payload Study Complete	1	2012	1	2012
Developmental Article System Requirements Review-2	4	2012	4	2012
Technology Development Decision	4	2012	4	2012
Optical Payload Breadboard Subassemblies Complete	3	2013	3	2013
Developmental Article Preliminary Design Review	4	2013	4	2013
Ground Segment Component Implementation	4	2013	2	2016
Product Development Decision	1	2014	1	2014
OPIR Cue to Track Algorithms Complete	3	2014	3	2014
Production Preparation Decision	2	2014	2	2014
Production Preparation Contract Award	3	2014	3	2014
Developmental Article Critical Design Review	4	2014	4	2014
Optical Payload Engineering Model Complete	4	2014	4	2014
Satellite Flight Fabrication Complete	2	2015	2	2015
Subsystem Algorithms Integrated Complete	2	2015	2	2015
Long Lead Authorization	4	2015	4	2015
Optical Payload Flight Assembly Complete	1	2016	1	2016
Communications Payload Flight Assembly Complete	1	2016	1	2016
Satellite Assembly Complete	2	2016	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Segment Component Complete	2	2016	2	2016
Pre-Environmental Review	3	2016	3	2016
Pre-Ship Review	3	2017	3	2017
Developmental Articles Launch	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	1.063	6.591	15.092	-	15.092	10.961	7.825	17.286	25.527	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In FY 2012 and FY 2013, Program Wide Support reflects proportional increases as a result of increases to the Precision Tracking Space System.

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development Centers (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	1.063	6.591	15.092
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and budget item justification.			
Accomplishments/Planned Programs Subtotals	1.063	6.591	15.092

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604883C: <i>Precision Tracking Space System</i>	MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	71.550	-	-	-	-	-	-	-	-	0.000	71.550
MD67: <i>Airborne Infrared (ABIR)</i>	71.550	-	-	-	-	-	-	-	-	0.000	71.550

Note

In the Consolidated Appropriation Act of FY 2012 (Public Law 112-74), the Airborne Infrared (PE 0604884C) has zero funding. The Agency will conduct an orderly drawdown of the program.

A. Mission Description and Budget Item Justification

Since March 2009, the Airborne Infrared Sensors program office, in conjunction with the Office of the Secretary of Defense, the Air Force, and the Navy demonstrated that sensors integrated on remotely piloted aircraft can provide an effective research and development platform for the Ballistic Missile Defense System.

We conducted a series of ground and flight tests through FY 2011. These demonstrations incrementally showed cueing from external sensors, automatic acquisition of a target, and auto-tracking of a target throughout its flight with airborne sensors.

The Agency developed the sensors for integration and the Air Force provided the remotely piloted vehicles.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	111.671	46.877	49.948	-	49.948
Current President's Budget	71.550	-	-	-	-
Total Adjustments	-40.121	-46.877	-49.948	-	-49.948
• Congressional General Reductions	-0.527	-	-	-	-
• Congressional Directed Reductions	-	-46.877	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-35.000	-	-	-	-
• Reprogrammings	-0.022	-	-	-	-
• SBIR/STTR Transfer	-4.572	-	-	-	-
• Other Adjustment	-	-	-49.948	-	-49.948

Change Summary Explanation

The FY 2011 reductions reflect the Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10) and a realignment of Department of Defense priorities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

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

R-1 ITEM NOMENCLATURE
PE 0604884C: *Airborne Infrared (ABIR)*

In the Consolidated Appropriation Act of 2012 (Public Law 112-74), Airborne Infrared (PE 0604884C) has zero funding. The Agency will conduct an orderly drawdown of the program.

FY 2013 reduction reflects changes provided in the Consolidated Appropriation Act of 2012 (Public Law 112-74),

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>	PROJECT MD67: <i>Airborne Infrared (ABIR)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD67: <i>Airborne Infrared (ABIR)</i>	71.550	-	-	-	-	-	-	-	-	0.000	71.550
Quantity of RDT&E Articles	1	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Since March 2009, the Airborne Infrared Sensors program office, in conjunction with the Office of the Secretary of Defense, the Air Force, and the Navy demonstrated that sensors integrated on remotely piloted aircraft can provide an effective research and development platform for the Ballistic Missile Defense System.

We released an Alternatives Assessment study that concluded airborne sensors integrated on remotely piloted vehicles are technically feasible and cost effective research and development platforms. From the results of this study, we selected the Multi-spectral Targeting Sensor for our experiments and demonstrations due to its proven performance in an operational environment. They have two color, medium and long wave bands we need to single out the enemy's threat vehicles from decoys. The United States Air Force conducted a platform assessment and selected the MQ-9 Reaper for our campaign.

We demonstrated through incremental improvements sensor sensitivity, pointing, and timely delivery of tracking information from great distances on targets of opportunity that included Intercontinental Ballistic Missiles and tactical missiles. Results of these tests included demonstrating the ability to: acquire from a cue and automatically track first and second stage booster separation; track dim targets; and pass real time object sighting messages to the ground stations.

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

	FY 2011	FY 2012	FY 2013
Title: ABIR	71.550	-	-
Articles:	1	0	0
Description: See Description Below			
FY 2011 Accomplishments:			
-Executed four Ballistic Missile Defense (BMD) tests using Airborne Infrared sensors and systems			
-Demonstrated ability to acquire from an external cue and auto-track ballistic targets			
-Demonstrated transmission of real time object sighting messages to Command, Control, Battle Management, and Communications (C2BMC)			
-Validated Multi-spectral Targeting System-B (MTS-B) fire control quality of service tracks through post test fusion with Space Tracking and Surveillance System (STSS) sensors			
-Demonstrated automatic airborne control of the sensor with the airborne processor			
-Integrated National Security Administration Type 1 encryption systems on the MQ-9 and ground segment			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>	PROJECT MD67: <i>Airborne Infrared (ABIR)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
-Conducted two radiometric calibration tests on the Airborne Infrared MTS-B sensor -Delivered two MTS-B infrared sensors FY 2012 Plans: Orderly drawdown of the program FY 2013 Plans: Not Applicable			
Title: ABIR Fielding Description: See Description Below FY 2011 Accomplishments: Site planning and associated designs FY 2012 Plans: Not Applicable FY 2013 Plans: Not Applicable	Articles:	-	-
	0	0	0
Accomplishments/Planned Programs Subtotals			
	71.550	-	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	389.259	222.075	347.012		347.012	327.342	362.520	341.780	326.095	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	454.440	363.640	366.552		366.552	376.116	383.055	358.431	364.725	Continuing	Continuing

D. Acquisition Strategy

The acquisition strategy consisted of three focus areas. First, leverage the technical expertise of Federally Funded Research and Development Centers and University Applied Research Centers. Second, continue to leverage relevant Office of the Secretary of Defense, Navy, Air Force and Agency contracts within the limits of

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604884C: <i>Airborne Infrared (ABIR)</i>	MD67: <i>Airborne Infrared (ABIR)</i>

Competition and Contracting Act taking into account contractor past performance, scope, ceiling and period of performance. Third, seek industry solutions via the Agency's Broad Agency Announcement.

E. Performance Metrics

Not Applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>	PROJECT MD67: <i>Airborne Infrared (ABIR)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ABIR Air Vehicle	C/CPFF	General Atomics: Poway, CA	11.800	-		-		-		-	0.000	11.800	11.800
ABIR Sensor Development; ABIR Software builds; requirements and processor hardware	C/CPFF	Raytheon: McKinney, TX	12.065	-		-		-		-	0.000	12.065	12.065
ABIR Algorithms and software builds; processor hardware	C/CPFF	Massachusetts Institute of Technology Lincoln Lab: Lexington, MA (FFRDC)	11.156	-		-		-		-	0.000	11.156	11.156
ABIR Sensor Characterization	C/CPFF	Arnold Engineering Development Center: Arnold Air Force Base, TN	1.021	-		-		-		-	0.000	1.021	1.021
ABIR Sensor Characterization - 2012152839913	C/CPFF	Space Dynamic Lab: Logan, UT	4.031	-		-		-		-	0.000	4.031	4.031
Subtotal			40.073	-		-		-		-	0.000	40.073	40.073

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>	PROJECT MD67: <i>Airborne Infrared (ABIR)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ABIR System Test and Evaluation	C/CPFF	Raytheon:General Atomics	4.806	-		-		-		-	0.000	4.806	4.806
Subtotal			4.806	-		-		-		-	0.000	4.806	4.806

Remarks

N/A

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ABIR Program Management	Allot	Missile Defense Agency:Air Force/ Other Government Agency's	26.671	-		-		-		-	0.000	26.671	26.671
Subtotal			26.671	-		-		-		-	0.000	26.671	26.671

Remarks

N/A

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		71.550	-		-		-	-	0.000	71.550	71.550

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>	PROJECT MD67: <i>Airborne Infrared (ABIR)</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 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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
Demonstrated improved tracking performance with Missile Defense Agency's MTS software delivery	▲																											
Delivered autonomous acquisition and track of MTS sensor			▲																									
Demonstrated autonomous control of MTS sensor			▲																									
MTS-B infrared sensors delivered			▲																									
Performed MTS infrared metric calibration				▲																								

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604884C: <i>Airborne Infrared (ABIR)</i>	PROJECT MD67: <i>Airborne Infrared (ABIR)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Demonstrated improved tracking performance with Missile Defense Agency's MTS software delivery	1	2011	1	2011
Delivered autonomous acquisition and track of MTS sensor	3	2011	3	2011
Demonstrated autonomous control of MTS sensor	3	2011	3	2011
MTS-B infrared sensors delivered	3	2011	3	2011
Performed MTS infrared metric calibration	4	2011	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	58.742	-	58.742	35.159	18.899	18.884	18.883	Continuing	Continuing
MD95: <i>Advanced Remote Sensor Technology</i>	-	-	55.760	-	55.760	33.384	18.899	18.884	18.883	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	-	2.982	-	2.982	1.775	-	-	-	Continuing	Continuing

Note

Advanced Remote Sensor Technology is a new Program Element in FY 2013.

A. Mission Description and Budget Item Justification

To support Ballistic Missile Defense, the Missile Defense Agency is developing future space based sensor technology to enable the defeat of enemy raids and track ballistic missiles early, expanding the Ballistic Missile Defense battle space. System modeling has shown that integrating advanced remote sensors into our Ballistic Missile Defense System (BMDS) will allow it to efficiently develop precise 3-dimensional tracks, discriminate the threat, and significantly increase interceptor performance from a single platform. The Advanced Remote Sensor Technology Program matures emerging sensor technologies and algorithms to achieve these capabilities.

The Advanced Remote Sensor Technology program follows a knowledge point based approach with clearly defined metrics and risk burn down plans to develop and test advanced sensor component technology for incorporation into future BMDS space based systems. These advanced sensor technology demonstrations incrementally prove the key functions of sensor acquisition and control, precision 3-dimensional tracking, target scene management, and discrimination through laboratory, ground, and flight tests utilizing unmanned aerial vehicles and manned aircraft as recoverable cost effective test platforms to enable the development of remote sensors for space.

Contributions to Combatant Commanders Achievable Capabilities List:

- Search and monitor airspace
- Track items of interest continuously
- Classify, identify, characterize, and discriminate
- Conduct effects assessment

Goals:

- Demonstrate the feasibility and performance of advanced sensor technology for integration into the BMDS Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance architecture for space systems
- Demonstrate the contribution of advanced remote sensor technology to overall BMD system discrimination capabilities
- Demonstrate the contribution of advanced remote sensor technology to overall BMD system raid handling capabilities

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>
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MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of MDA functions and activities across the entire BMDS.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	58.742	-	58.742
Total Adjustments	-	-	58.742	-	58.742
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	58.742	-	58.742

Change Summary Explanation

Advanced Remote Sensor Technology is a new Program Element in FY 2013.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD95: <i>Advanced Remote Sensor Technology</i>	-	-	55.760	-	55.760	33.384	18.899	18.884	18.883	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

Ballistic Missile Defense System (BMDS) architecture analysis has shown that tracking large enemy ballistic missile raids with remote advanced sensors decreases the time between the enemy's launch and our first track. This increases the available battle space by hundreds of seconds and gives the BMDS the ability to shoot, look, and then shoot again.

The Agency is executing a technology development strategy with clearly defined knowledge points, metrics, and risk burn down plans. Our strategy progresses from analysis, models, and simulations to laboratory, ground, and flight tests to incrementally verify and validate functionality and performance of the candidate technology. FY 2013 will consist of technology development and system design.

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

	FY 2011	FY 2012	FY 2013
Title: Advanced Remote Sensor Technology	-	-	55.760
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: NA			
FY 2012 Plans: NA			
FY 2013 Plans: - Complete advanced sensor data mining - Develop advanced sensor technology - Develop advanced sensor system control algorithms and software - Update models and simulation to reflect advanced sensor system functionality			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
- Begin surrogate advanced sensor integration			
Accomplishments/Planned Programs Subtotals	-	-	55.760

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> Base	<u>FY 2013</u> OCO	<u>FY 2013</u> Total	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> Complete	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing

D. Acquisition Strategy

The acquisition strategy consists of three focus areas. First, leverage the technical expertise of Federally Funded Research and Development Centers and University Applied Research Centers. Second, continue to leverage relevant Office of the Secretary of Defense, Navy, Air Force and Agency contracts within the limits of Competition and Contracting Act taking into account contractor past performance, scope, ceiling and period of performance. Third, seek industry solutions via the Agency's Broad Agency Announcement.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Remote Sensor Technology Advanced sensor technology development	C/CPFF	Various:Various	-	-		6.500	Oct 2012	-		6.500	Continuing	Continuing	Continuing
Advanced Remote Sensor Technology Advanced sensor development, software builds, and advanced sensor integration	C/CPFF	Various:Various	-	-		15.000	Oct 2012	-		15.000	Continuing	Continuing	Continuing
Advanced Remote Sensor Technology Advanced sensor technology development and design, control algorithms and software builds	FFRDC	Massachusetts Institute of Technology :Lexington, MA	-	-		15.959	Oct 2012	-		15.959	Continuing	Continuing	Continuing
Subtotal			-	-		37.459		-		37.459			

Remarks

N/A

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

Remarks

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Remote Sensor Technology Advanced sensor system test and evaluation	C/CPFF	Massachusetts Institute of Technology:Lexington, MA	-	-		8.600	Oct 2012	-		8.600	Continuing	Continuing	Continuing
Subtotal			-	-		8.600		-		8.600			

Remarks

N/A

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Remote Sensor Technology Program Management	Allot	Missile Defense Agency :Other Government Agency's	-	-		9.701	Oct 2012	-		9.701	Continuing	Continuing	Continuing
Subtotal			-	-		9.701		-		9.701			

Remarks

N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	-	55.760	-	55.760		

Remarks

NA

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>

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

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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												△																
Deliver advanced remote sensor system software																△												
Ground test integrated surrogate advanced sensor																△												
Measure 3-dimensional precise tracking performance in ground test																△												
Assess ability to extract discrimination features																△												
Measure 3-dimensional tracking and discrimination performance in a complex scene																				△								
Measure advanced sensor raid performance in a simulated environment																				△								
Demonstrate refined advanced remote sensor capabilities for discrimination																								△				
Complete advanced remote sensor technology demonstrations																												△

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop advanced sensor technology	4	2013	4	2013
Deliver advanced remote sensor system software	4	2014	4	2014
Ground test integrated surrogate advanced sensor	4	2014	4	2014
Measure 3-dimensional precise tracking performance in ground test	4	2014	4	2014
Assess ability to extract discrimination features	4	2014	4	2014
Measure 3-dimensional tracking and discrimination performance in a complex scene	4	2015	4	2015
Measure advanced sensor raid performance in a simulated environment	4	2015	4	2015
Demonstrate refined advanced remote sensor capabilities for discrimination	4	2016	4	2016
Complete advanced remote sensor technology demonstrations	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	-	2.982	-	2.982	1.775	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note
N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development Centers (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 (with the exception of Federal Office Building 2 after FY 2011), 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, and foreign currency fluctuations on a limited number of foreign contracts. 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 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	-	2.982
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: NA			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	2.982

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	MD40: <i>Program-Wide Support</i>

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	113.234	-	-	-	-	-	-	-	-	0.000	113.234
MD45: <i>Small Business Innovative Research</i>	113.234	-	-	-	-	-	-	-	-	0.000	113.234

Note

NA

A. Mission Description and Budget Item Justification

This project explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technologies that can also be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technologies for possible future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technologies will also be judged on their potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technologies, and as a route to national economic growth through new commercial products. MDA will conduct the competition and will award and manage the contracts.

The Missile Defense Agency's SBIR/STTR investments are divided into 13 Research Areas from 6 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

Engineering: Defines the current and future BMDS: leads and is responsible for its technical design and development, and supports its integration and assessment.

Program and Integration: Supervises the Acquisition Category ID ACAT 1D Ballistic Missile Defense System Program portfolio including element design, development, system integration, and test.

Test: Characterizes ballistic missile defense capabilities and supports fielding of an integrated and effective capability to the Warfighter.

Advanced Technology: Develops cost and operationally effective capabilities; explores and develops technology to counter future threats.

Small Business Innovation Research (SBIR) topic areas for FY 2011 included:

- Methodologies for Accurate Scene Generation of Target Characteristics as Seen by an Airborne Platform through Dynamic Atmospheric Conditions
- Methodologies for Accurate Scene Generation of Complex Target Plume Characteristics
- Methodologies for Developing Extremely Large IR Scene Projectors
- Methodologies for a Partial Frame Correlation of Multiple Sensors
- Smart Infrared Focal Plane Arrays and Advanced Electronics
- Acquisition, Tracking and Pointing Technologies

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>
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- Development of line-narrowed diode pumps sources for DPAL systems
- Development of optical quality thin-film coatings for DPAL windows
- Innovative Signature Exploitation for Long Range Object Discrimination
- Sensor Resource Management
- Guidance, Navigation and Control Algorithms and Hardware for Advanced Interceptors
- Light Weight Divert and Attitude Control Systems for Missile Defense Interceptors
- Long-Term Missile Aging Reliability Prediction for Advanced Platforms
- Anti-Tamper Technology for Missile Defense
- Develop and Demonstrate High Performance Infrared Focal Plane Arrays with Advanced Quantum Structures
- Composite Structures for lightweight missile components
- Hot gas components for lightweight missile components
- Sensor & Mitigation Technologies for Liquid Hypergolic Propulsion Systems
- 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
- Intelligent Adaptive Needs Characterization for M&S Systems Engineering
- Improved Techniques for Optimistic Modeling
- Star Background Model
- Automatic Test and Analysis (ATA) Tool
- Mitigation of the effects of the ionosphere on Upgraded Early Warning Radars
- Innovative Solid State Power Supply-Modulator for High Power Traveling Wave Tube Amplifier
- Methodologies for Accurate Assessment of Target Characteristics
- Telemetry Impact Reduction for Target Objects
- Passive Techniques for Flight Reconstruction Data
- Techniques for Anchoring Debris Models

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	PE 0605502C: <i>Small Business Innovative Research - MDA</i>

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	113.234	-	-	-	-
Total Adjustments	113.234	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	113.234	-			
• Other Adjustment	-	-	-	-	-

Change Summary Explanation

FY 2011 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 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>	PROJECT MD45: <i>Small Business Innovative Research</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD45: <i>Small Business Innovative Research</i>	113.234	-	-	-	-	-	-	-	-	0.000	113.234
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

This project explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technologies that can also be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technologies for possible future Missile Defense Agency Ballistic Missile Defense System needs. Dual-use means that the technologies will also be judged on their potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technologies, and as a route to national economic growth through new commercial products. MDA will conduct the competition and will award and manage the contracts.

The Missile Defense Agency's SBIR/STTR investments are divided into 13 Research Areas from 6 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

Engineering: Defines the current and future Ballistic Missile Defense System: leads and is responsible for its technical design and development, and supports its integration and assessment.

Program and Integration: Supervises the Acquisition Category ID ACAT 1D Ballistic Missile Defense System Program portfolio including element design, development, system integration, and test.

Test: Characterizes ballistic missile defense capabilities and supports fielding of an integrated and effective capability to the Warfighter.

Advanced Technology: Develops cost and operationally effective capabilities; explores and develops technology to counter future threats. The SBIR Research Areas for FY 2012 include Test Instrumentation, Aegis, Command Control Battle Management Communication (C2BMC), Radar, Infrared, Tamper, Standard Missile-3 Block IIB, Directed Energy, and Quality, Safety and Mission Assurance.

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

	FY 2011	FY 2012	FY 2013
Title: FY11 Accomplishments	113.234	-	-
Articles:	0	0	0
Description: See Description Below			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>	PROJECT MD45: <i>Small Business Innovative Research</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> FY 2011 Accomplishments: - Awarded 146 Phase Is (\$100K average award) and 60 Phase IIs (including modifications to existing Phase IIs) (\$860K average award). - Phase I Selections were in the following 9 research areas: Command, Control, Battle Management and Communications (C2BMC), Directed Energy, Information Assurance, Interceptor Technology, Manufacturing and Producibility, Modeling Simulation and Phenomenology, Radar Technology, Space Technology, and Innovation Concepts and Special Focus Projects. - Phase II Selections were in the following 8 research areas: Interceptor Technology, Manufacturing Process, Innovation Concepts and Special Focus Projects, Radar Systems, Space Technology, Command, Control, Battle Management and Communications (C2BMC), Modeling & Simulation, and Directed Energy.</p> <p><i>FY 2012 Plans:</i> NA</p> <p><i>FY 2013 Plans:</i> NA</p>			
Accomplishments/Planned Programs Subtotals	113.234	-	-

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

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901585C: <i>Pentagon Reservation</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	20.378	-	-	-	-	-	-	-	-	0.000	20.378
MD42: <i>Pentagon Reservation Maintenance Reserve Fund (PRMRF)</i>	20.378	-	-	-	-	-	-	-	-	0.000	20.378

Note

NA

A. Mission Description and Budget Item Justification

This Department of Defense directed Program Element started in FY 2001 to separately identify costs for the Pentagon Reservation Maintenance Reserve Fund (PRMRF). The PRMRF finances the following: real property operation and maintenance costs of the Pentagon and Federal Office Building Two, Pentagon reservation security, and associated parking areas.

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	20.482	-	-	-	-
Current President's Budget	20.378	-	-	-	-
Total Adjustments	-0.104	-	-	-	-
• Congressional General Reductions	-0.104	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustment	-	-	-	-	-

Change Summary Explanation

The FY 2011 decrease of \$.104M reflects a congressional general reduction (Department of Defense and Full Year Continuing Appropriation Act, FY 2011 (Public Law 112-10)). FY 2011 completes the last fiscal year for the Pentagon Reservation Maintenance Reserve Fund (PRMRF) due to Base Realignment and Closure from Federal Office Building #2 to a consolidated campus located on Fort Belvoir, Virginia.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901585C: <i>Pentagon Reservation</i>	PROJECT MD42: <i>Pentagon Reservation Maintenance Reserve Fund (PRMRF)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD42: <i>Pentagon Reservation Maintenance Reserve Fund (PRMRF)</i>	20.378	-	-	-	-	-	-	-	-	0.000	20.378
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

This DoD directed Program Element started in FY 2011 to separately identify costs for the Pentagon Reservation Maintenance Reserve Fund (PRMRF). The PRMRF funds the Pentagon Reservation Security/Force Protection. It also funds the activities of Washington Headquarters Services in providing space and a full range of building services for DoD Components, including the Military Departments and other activities housed within the Pentagon Reservation. In addition, PRMRF funds in part, real property operation and maintenance costs of the Pentagon and Federal Office Building Two (FOB-2), and associated parking areas.

Funding for this program element ends in FY 2011.

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

	FY 2011	FY 2012	FY 2013
Title: Unknown	20.378	-	-
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: See Paragraph A. Mission Description and Budget Item Justification.			
FY 2012 Plans: NA			
FY 2013 Plans: NA			
Accomplishments/Planned Programs Subtotals	20.378	-	-

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901585C: <i>Pentagon Reservation</i>	PROJECT MD42: <i>Pentagon Reservation Maintenance Reserve Fund (PRMRF)</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	28.472	28.908	34.855	-	34.855	25.473	30.838	31.482	32.798	Continuing	Continuing
MD38: <i>Management Headquarters</i>	28.472	28.908	34.855	-	34.855	25.473	30.838	31.482	32.798	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

As prescribed by Department of Defense Directive 5100.73, Major Headquarters Activities, signed by the Deputy Secretary of Defense on 13 May 1999, this Program Element funds costs associated with the operation of the headquarters and headquarters activities of the Missile Defense Agency (MDA). This project funds the following basic areas: Salaries and benefits for government civilian personnel assigned to the Agency headquarters, training, professional development, and travel for Agency personnel, rents, supplies and services for Agency facilities, facility support functions, and specialized headquarters contract support.

This PE also funds personnel that implement the initiatives and processes that have been introduced in the Weapon Systems Acquisition Reform Act of 2009. This Act notes the key to successful acquisition programs is getting things right from the start with sound systems engineering, cost-estimating, and developmental testing early in the program cycle.

Personnel funded from the PE will successfully implement these Acquisition Reform initiatives and processes that will minimize future cost overruns, schedule delays, and performance problems in MDA acquisition programs by focusing acquisition and procurement program management on emphasizing systems engineering; more effective up front planning and management of technology risk, make trade-offs between cost, schedule and performance early in the program cycle.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	29.754	28.908	29.112	-	29.112
Current President's Budget	28.472	28.908	34.855	-	34.855
Total Adjustments	-1.282	-	5.743	-	5.743
• Congressional General Reductions	-0.151	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.131	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	5.743	-	5.743

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY
0400: *Research, Development, Test & Evaluation, Defense-Wide*
BA 6: *RDT&E Management Support*

R-1 ITEM NOMENCLATURE
PE 0901598C: *Management HQ - MDA*

Change Summary Explanation

The FY 2011 decrease of \$1.282M reflects \$1.131M for reprogrammings to support Missile Defense Agency higher priority missions and \$.151M realignment to Department of Defense priorities.

The FY 2013 increase of \$5.743M reflects costs transferred in from Program Wide Support (Budget Project MD40 in various program elements) for National Capitol Region subsidy, shuttle services, logistics, and ground transportation.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>	PROJECT MD38: <i>Management Headquarters</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD38: <i>Management Headquarters</i>	28.472	28.908	34.855	-	34.855	25.473	30.838	31.482	32.798	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

N/A

A. Mission Description and Budget Item Justification

This program element (0901598C) funds costs associated with the Headquarters activities of the Missile Defense Agency (MDA) to include the following areas:

- MDA Headquarters Staff (Government salaries and Contract Support Services)
- National Capital Region facilities and subsidy costs
- Transportation services
- Agency operations

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

	FY 2011	FY 2012	FY 2013
<p>Title: Civilian Salaries</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments: See paragraph A. Mission description and Budget Item Justification.</p> <p>FY 2012 Plans: See paragraph A. Mission description and Budget Item Justification.</p> <p>FY 2013 Plans: See paragraph A. Mission description and Budget Item Justification.</p>	22.301 0	22.636 0	23.088 0
<p>Title: HQ Travel</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2011 Accomplishments:</p>	1.729 0	1.755 0	1.781 0

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>	PROJECT MD38: <i>Management Headquarters</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
See paragraph A. Mission description and Budget Item Justification.				
FY 2012 Plans: See paragraph A. Mission description and Budget Item Justification.				
FY 2013 Plans: See paragraph A. Mission description and Budget Item Justification.				
Title: Specialized HQ Advisory & Assistance Services		3.444	3.479	3.531
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: See paragraph A. Mission description and Budget Item Justification.				
FY 2012 Plans: See paragraph A. Mission description and Budget Item Justification.				
FY 2013 Plans: See paragraph A. Mission description and Budget Item Justification.				
Title: HQCC Utilities, Facilities, Subsidy, Transportation and Logistics		0.998	1.038	6.455
		Articles: 0	0	0
Description: See Description Below				
FY 2011 Accomplishments: See paragraph A. Mission description and Budget Item Justification.				
FY 2012 Plans: See paragraph A. Mission description and Budget Item Justification.				
FY 2013 Plans: See paragraph A. Mission description and Budget Item Justification.				
Accomplishments/Planned Programs Subtotals		28.472	28.908	34.855
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>	PROJECT MD38: <i>Management Headquarters</i>

D. Acquisition Strategy

MDA consolidated over 300 individual support services contracts to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission resulting in approximately 59 task orders total and provided more than 34% scope as Small Business opportunities. The objectives implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

E. Performance Metrics

N/A

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