



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-362



### **Ballistic Missile Defense System (BMDS)**

As of FY 2015 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
BY - Base Year  
DAMIR - Defense Acquisition Management Information Retrieval  
Dev Est - Development Estimate  
DoD - Department of Defense  
DSN - Defense Switched Network  
Econ - Economic  
Eng - Engineering  
Est - Estimating  
FMS - Foreign Military Sales  
FY - Fiscal Year  
IOC - Initial Operational Capability  
\$K - Thousands of Dollars  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MILCON - Military Construction  
N/A - Not Applicable  
O&S - Operating and Support  
Oth - Other  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget  
PE - Program Element  
Proc - Procurement  
Prod Est - Production Estimate  
QR - Quantity Related  
Qty - Quantity  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
Sch - Schedule  
Spt - Support  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting

## Program Information

**Program Name**

Ballistic Missile Defense System (BMDS)

**DoD Component**

DoD

## Responsible Office

**Responsible Office**

VADM James D. Syring  
Missile Defense Agency (MDA)  
5700 18th Street  
Fort Belvoir, VA 22060-5573  
[james.syring@mda.mil](mailto:james.syring@mda.mil)

<b>Phone</b>	571-231-8006
<b>Fax</b>	571-231-8090
<b>DSN Phone</b>	289-8006
<b>DSN Fax</b>	289-8090
<b>Date Assigned</b>	November 19, 2012

## References

**SAR Baseline (Planning Estimate)**

National Security Presidential Directive (NSPD) - 23 dated December 16, 2002

## Mission and Description

### Mission and Description

To develop and deploy a layered Ballistic Missile Defense System (BMDS) to defend the United States (U.S.), its deployed forces, allies, and friends from ballistic missile attacks of all ranges and in all phases of flight.

Following guidance from the President, the Secretary of Defense approved the Ballistic Missile Defense (BMD) Review Report (dated February 2010), which established the following policy priorities to frame missile defense development and acquisition program strategies:

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

## Executive Summary

### Introduction

The Missile Defense Agency (MDA) accomplished a number of key goals towards developing and deploying a layered Ballistic Missile Defense (BMD) system to defend the United States (U.S.) homeland, its deployed forces, allies, and international partners against the increasingly capable ballistic missile threat. Potential adversaries are acquiring a greater number of ballistic missiles, increasing their range, and making them more accurate. MDA's mission has become more complex as potential adversaries are also incorporating more sophisticated BMD countermeasures.

MDA's overriding goal continues to be supporting the warfighter. This is accomplished by incrementally improving and deploying existing capability, demonstrating that capability with complex ground and flight tests, and continuous development of new technologies to improve BMD capability and reliability.

### Homeland Defense and Regional Defense

MDA is committed to expand homeland defenses to include 44 Ground Based Interceptors (GBIs). Analysis of flight test data is directing ongoing improvements of the Capability Enhancements (CE) I and II Exoatmospheric Kill Vehicles (EKVs) for the GBIs. Currently there are 30 operational GBIs in place to protect the U.S. against intercontinental ballistic missile attacks from threats such as North Korea and Iran. In 2013, MDA began refurbishment of Missile Field 1 at Fort Greely Alaska, which will increase the silo capacity for the additional 14 GBIs, and continued emplacement of GBIs in Missile Field 2. Consistent with MDA's strategy for improving robustness of the homeland defense capability, the MDA will engineer and allocate integrated system requirements that will drive balanced and integrated BMD System (BMDS) development activities for improved discrimination and sensor capabilities. These activities executed in parallel include development of the Long Range Discrimination Radar, improved discrimination algorithms and fire control, air and space Electro Optical/Infrared capabilities, and the Next Generation Kill Vehicle.

MDA operates a forward-based Army-Navy Transportable Radar Surveillance & Control-Series 2 (AN/TPY-2) radar in Japan. In 2013, the Secretary of Defense directed deployment of an additional AN/TPY-2 radar in Japan to provide additional tracking coverage of ballistic missiles from North Korea. MDA received authority from the Under Secretary of Defense for Acquisition Technology and Logistics (USD(AT&L)) to expend Congressionally-provided funds to acquire a 12th AN/TPY-2 radar. This radar will be used in a 7th Terminal High Altitude Area Defense (THAAD) battery being planned by MDA and the Army.

To protect deployed forces and allies, MDA delivered additional THAAD interceptors and delivered hardware for a third THAAD battery. MDA also achieved first operational deployment of THAAD capability to defend Guam. Additionally, Naval BMD capability was enhanced in 2013 with the completion of six Aegis BMD weapon system installations, increasing the total BMD fleet to 30 ships. Aegis BMD also delivered 10 Standard Missile (SM) -3 Block IAs and 16 SM-3 Block IBs for deployment to the Navy. MDA received authority to procure more SM-3 Block IB missiles in FY 2014. Upon completion of Office of Secretary of Defense (OSD) Director, Operational Test and Evaluation (DOT&E) assessment, MDA will proceed with plans to obtain an SM-3 Block IB full production decision at the end of this year for FY 2015 and beyond.

MDA remains committed to strengthening regional missile defense. MDA continues to work closely with allies around the world to develop capabilities and improve cooperation. MDA continues to support the European Phased Adaptive Approach (EPAA), which provides protection of deployed U.S. forces and allies and is the U.S. contribution to North Atlantic Treaty Organization (NATO) BMD. Phase II of the EPAA is on schedule to deploy in the

2015 timeframe and will include an upgraded Aegis BMD Weapons System version and the SM-3 Block IB missile. Also a component of Phase II capability, Aegis Ashore (AA) will be deployed to Romania. The AA deckhouse and weapon system equipment destined for Romania was installed, integrated, and tested at Lockheed Martin in Moorestown, NJ prior to disassembly and shipment to Romania. During the time it was installed in NJ, the system tracked a NASA space launch and an MDA target tracking event. EPAA Phase III is scheduled to be delivered in the 2018 timeframe and includes deployment of AA to Poland, another upgrade to the Aegis BMD Weapons System, and the SM-3 Block IIA variant (which is currently being cooperatively developed with Japan). With delivery of Phase III, EPAA will provide coverage for NATO territory in Europe and U.S. forces in that region.

Finally, MDA continues to develop spirals of Command, Control, Battle Management, and Communication (C2BMC) capability. In 2013, C2BMC capability supported the warfighter in real world operations across multiple areas of responsibility, including deployments to the Middle East, Turkey and Kwajalein.

### **International Cooperation**

In 2013, MDA continued to expand missile defense cooperation with key friends and allies. MDA currently participates in missile defense-related projects and studies with over twenty countries and NATO. MDA will continue to work with NATO allies to develop requirements and further capabilities for regional defense.

Significant 2013 accomplishments and coordination activities with countries in the Middle East included:

- Continued execution of the United Arab Emirates' (UAE) THAAD Letter of Offer and Acceptance including the signing of an amendment responding to the UAE's request for additional interceptors and launchers;
- Continued to work with partners concerning their Letters of Request for the purchase of MDA systems; and
- Continued coordination with other Middle East countries through the Gulf Coordination Council to strengthen cooperation and determine common missile defense interests.

MDA continues its Cooperative Development Program with Israel for several BMD systems and to facilitate interoperability with the U.S. BMDS. Work continues under existing agreements for the Arrow Weapons System, David's Sling, and the Upper Tier Interceptor programs. Congressional support and funding was provided for FY2012-2015 for Israel's procurement of Iron Dome. MDA provided additional funding and negotiated (and signed in March 2014) a new agreement with Israel to provide further funding and ensure significant co-production opportunities for U.S. industry.

In Europe, MDA successfully supported negotiations to deploy BMD interceptor missiles in Romania and Poland for EPAA. The groundbreaking for the EPAA Phase II AA site in Romania took place in October 2013.

In the Asia-Pacific region, MDA continued to expand bilateral relationships with Australia, Japan, and the Republic of Korea (ROK). The MDA and the ROK successfully completed the second phase of their joint BMD architecture analysis.

MDA and Japan completed the second amendment to the SM-3 Block IIA Cooperative Development Program, conducted joint analysis of current and planned missile defense capabilities to inform Executive Steering Committee recommendations for the Japan 2014 Mid-Term Defense Program, and are conducting discussions on transitioning the SM-3 Block IIA from development to integration, test, and production. In addition, Japan furnished land to the U.S. Government for the installation of a second AN/TPY-2 Radar at Kyogamisaki which will enhance the Alliance's ability to defend Japan, our forward deployed forces, and the U.S. homeland from the ballistic missile threat posed by North Korea and will augment the capabilities of the existing radar located at Shariki.

### **Rigorous Testing**



In 2013, MDA executed eight high-profile U.S.-only tests, as well as numerous ground tests, to validate BMD performance. MDA also participated in four additional Israeli flight tests. The capstone test event was Flight Test Operational (FTO) -01. This test was an unparalleled operational test of the layered BMD and involved THAAD and Aegis BMD, ground- and sea-based forward deployed sensors and C2BMC assets.

Aegis BMD testing achieved a five for five intercept test record and a successful transmission of long-range surveillance and track data through the BMD System (BMDS) C2BMC to the Ground-based Midcourse Defense (GMD) system. One of those successful Aegis BMD tests assessed the ability of launching an interceptor on data provided from the Space Tracking and Surveillance System (STSS) satellites. Several other successful Aegis BMD ground and flight tests validated the path forward toward approval of a full production decision for the Standard Missile (SM) -3 Block IB missile and certification of the Aegis BMD 4.0 weapon system.

Successful cooperative development testing with Israel included a second successful flight test intercept using the David's Sling Weapons System and a second successful fly-out of the Arrow-3 upper tier interceptor. These programmatic milestones provide confidence that Israel will have the capability to defeat the evolving ballistic missile threat in the Middle East.

Finally, MDA has expanded a partnership with OSD DOT&E to test and experiment with cyber security on MDA systems. This partnership leverages DOT&E resources and teams MDA with special cyber security expertise and extensive knowledge of the current cyber threats.

### **BMDS Technology Initiatives**

MDA is developing and testing advanced discriminating sensor prototypes. Additionally, MDA is conducting system level trade studies to select capability options and determine the most cost-effective approach for inserting advanced sensors into the BMDS architecture. These sensors will improve precision tracking and discrimination capability to counter evolving threat countermeasures and significantly enhance the lethality of the BMDS.

The Directed Energy Program is building a foundation for the next generation high-energy laser by pursuing several promising lightweight, highly-efficient solid state laser technologies. These candidate technologies offer a path to high-efficiency, electrically-driven, compact, light-weight high-energy lasers for multiple missile defense applications.

MDA's strategy for the Next Generation Kill Vehicles is to achieve as much commonality among future GMD kill vehicles and other future kill vehicles for Aegis BMD and THAAD. The Common Kill Vehicle (CKV) Technology effort is aiding the Agency in establishing the requirements foundation for the redesigned GBI EKV, which MDA is now planning as Phase I of its overall kill vehicle strategy. MDA's joint government and industry concept definition effort will confirm the feasibility of industry to meet those requirements and enabling industry to develop and mature their concepts for a redesigned EKV that is much more reliable, producible, and testable. In the follow-on kill vehicle common technology efforts, or CKV Phase II, MDA will make investments that reduce the costs of production and weapon system operations through new kill vehicle architectures and scalable technology that improves the effectiveness and performance of MDA's entire interceptor fleet against an evolving threat. MDA's investments in large format focal plane arrays, smaller, more accurate inertial measurement units, improved communications architecture, and high performance propulsion components are key enablers. These technology development efforts will address another system gap; allowing the Agency to engage a more numerous and increasingly more complex threat, by establishing the technology foundation for killing multiple lethal objects from a single SM-3 or GBI.

The Agency's Advanced Research program capitalizes on the creativity and innovation of the Nation's universities and small business community to develop cutting-edge technologies through Small Business Innovation Research (SBIR) and University Engagement programs. MDA is implementing national security strategy through international cooperation with foreign universities of allied nations on research efforts beneficial to the BMDS. In 2013, the Advanced Research program made significant contributions in support of technology development and transition to



the BMDS by awarding 283 new SBIR contracts; six new university research efforts; three new Rapid Innovation Fund efforts; and initiating a research project with the Government of Denmark on Frequency Modulated Continuous Wave radars.

### **General**

There are no significant software-related issues with the program at this time.

Program funding and production quantities listed in this SAR are consistent with the FY 2015 PB.

## Threshold Breaches

APB Breaches		
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<b>Schedule</b>		<input type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches		
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<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

## Schedule

No schedule milestones exist for BMDS.

**Memo**

For schedule milestones see the Unclassified BMDS Accountability Report (BAR) and BAR Classified Annex dated March 18, 2014.

## Performance

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**Memo**

For performance characteristics see the Unclassified BMDS Accountability Report (BAR) and BAR Classified Annex dated March 18, 2014.

## Track to Budget

### General Memo

Reflects the latest budget structure for PB 2015.

### RDT&E

Appn	BA	PE	
Defense-Wide	0400	04	0305103C
	<b>Project</b>	<b>Name</b>	
	MDCS	Cyber Security Initiative	
Defense-Wide	0400	03	0603175C
	<b>Project</b>	<b>Name</b>	
	MD25	Advanced Technology	
	MD40	Program Wide Support	
	MD85	Common Kill Vehicle	
Defense-Wide	0400	03	0603176C
	<b>Project</b>	<b>Name</b>	
	MD40	Program-Wide Support	
	MDXX	Advanced Concepts	
Defense-Wide	0400	03	0603177C
	<b>Project</b>	<b>Name</b>	
	MD40	Program-Wide Support	
	MD95	Discrimination Sensor Technology	
Defense-Wide	0400	03	0603178C
	<b>Project</b>	<b>Name</b>	
	MD40	Program-Wide Support	
	MD69	Weapons Technology	
Defense-Wide	0400	03	0603180C
	<b>Project</b>	<b>Name</b>	
	MD25	Advanced Research	
	MD40	Program-Wide Support	
Defense-Wide	0400	03	0603274C
	<b>Project</b>	<b>Name</b>	

		Special Programs - MDA Technology	
Defense- Wide	MD81	0400 03	0603294C
	<b>Project</b>	<b>Name</b>	
	MD40	Program-Wide Support	
	MD85	Common Kill Vehicle	
Defense- Wide	0400 04	0603881C	
	<b>Project</b>	<b>Name</b>	
	MC07	BMDS Cyber Program	
	MD06	Patriot Advanced Capability-3 (PAC-3)	
	MD07	THAAD	
	MD40	Program Wide Support	
	MT07	THAAD Test	
Defense- Wide	0400 04	0603882C	
	<b>Project</b>	<b>Name</b>	
	MC08	BMDS Cyber Program	
	MD08	Ground Based Midcourse	
	MD40	Program Wide Support	
	MD97	Improved HLD Interceptors	
	MT08	Ground Based Midcourse Test	
	MX08	Ground Based Midcourse Development Support	
Defense- Wide	0400 04	0603884C	
	<b>Project</b>	<b>Name</b>	
	MC11	BMDS Cyber Program	
	MD11	BMDS Radars	
	MD40	Program Wide Support	
	MD96	Long Range Discriminating Radar	
	MT11	BMDS Radars Test	
Defense- Wide	0400 04	0603890C	
	<b>Project</b>	<b>Name</b>	
	MC30	BMDS Cyber Program	
	MC31	BMDS Cyber Program	
	MD24	Systems Engineering & Integration	
	MD28	Intelligence & Security	
	MD30	BMD Information Management Systems	
	MD31	Modeling & Simulation	

	MD32		Quality, Safety, and Mission Assurance
	MD40		Program Wide Support
	MT23		Enabling - Test
Defense-Wide	0400	04	0603891C
	<b>Project</b>		<b>Name</b>
	MD27		Special Programs
Defense-Wide	0400	04	0603892C
	<b>Project</b>		<b>Name</b>
	MC09		BMDS Cyber Program
	MD09		Aegis BMD
	MD40		Program Wide Support
	MT09		Aegis BMD Test
	MX09		Aegis BMD Development Support
Defense-Wide	0400	04	0603893C
	<b>Project</b>		<b>Name</b>
	MD12		Space Tracking & Surveillance System (STSS)
	MD40		Program Wide Support
Defense-Wide	0400	04	0603895C
	<b>Project</b>		<b>Name</b>
	MD33		MD Space Exp Center (MDSEC)
	MD40		Program Wide Support
Defense-Wide	0400	04	0603896C
	<b>Project</b>		<b>Name</b>
	MC01		BMDS Cyber Program Command & Control, Battle Management, Communications (C2BMC)
	MD01		Program Wide Support
	MD40		C2BMC Test
	MT01		C2BMC Development Support
	MX01		
Defense-Wide	0400	04	0603898C
	<b>Project</b>		<b>Name</b>
	MD03		Joint Warfighter Support
	MD40		Program Wide Support
	MT03		Joint Warfighter Test Support
Defense-Wide	0400	04	0603904C



		<b>Project</b>	<b>Name</b>
		MC22	BMDS Cyber Program
		MD22	Missile Defense Integration & Operations Center (MDIOC)
		MD40	Program Wide Support
Defense-Wide	0400 04		0603906C
		<b>Project</b>	<b>Name</b>
		MD35	Regarding Trench
Defense-Wide	0400 04		0603907C
		<b>Project</b>	<b>Name</b>
		MD40	Program Wide Support
		MX46	Sea Based X-Band Radar Development Support
Defense-Wide	0400 04		0603913C
		<b>Project</b>	<b>Name</b>
		MD20	Israeli Upper Tier
		MD26	Israeli ARROW Program
		MD34	Short Range Ballistic Missile Defense (SRBMD)
Defense-Wide	0400 04		0603914C
		<b>Project</b>	<b>Name</b>
		MC04	BMDS Cyber Program
		MD40	Program Wide Support
		MT04	BMDS Test Program
		MX04	BMD Test Development Support
Defense-Wide	0400 04		0603915C
		<b>Project</b>	<b>Name</b>
		MD40	Program Wide Support
		MT05	BMDS Targets Program
Defense-Wide	0400 04		0604880C
		<b>Project</b>	<b>Name</b>
		MC68	Cyber Operations
		MD40	Program-Wide Support
		MD68	Aegis Ashore
		MT68	Aegis Ashore Test
Defense-Wide	0400 04		0604881C
		<b>Project</b>	<b>Name</b>
		MD09	SM-3 Block IIA Co-Development

MD40 Program-Wide Support  
 MT09 SM-3 Block IIA Co-Development  
 Test

Defense- 0400 04 0605502C  
 Wide

Project	Name
MD45	Small Business Innovative Research

Defense- 0400 04 0901598C  
 Wide

Project	Name
MD38	Management Headquarters

**Procurement**

Appn	BA	PE
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Defense- 0300 01 0208866C  
 Wide

Line Item	Name
MD07	THAAD
MD08	Ground Based Midcourse
MD09	Aegis BMD
MD11	BMDs AN/TPY-2 Radars
MD73	Aegis Ashore Phase III
MD78	Aegis Spares
MD83	Iron Dome

**MILCON**

Appn	BA	PE
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Defense- 0500 0603882C  
 Wide

Project	Name
MD08	Ground Based Midcourse

Defense- 0500 0603884C  
 Wide

Project	Name
MD11	BMDs Radars
MD96	Long Range Discriminating Radar

Defense- 0500 0604880C  
 Wide

Project	Name
MD68	Aegis Ashore

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

Appropriation	BY \$M			BY2002 \$M	TY \$M		
	SAR Baseline Plan Est	Current APB Objective/Threshold		Current Estimate	SAR Baseline Plan Est	Current APB Objective	Current Estimate
RDT&E	44740.1	--	--	103839.5	47217.1	--	122377.6
Procurement	0.0	--	--	11475.0	0.0	--	15097.9
Flyaway	--	--	--	11475.0	--	--	15097.9
Recurring	--	--	--	11475.0	--	--	15097.9
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	--	--	854.3	0.0	--	1123.8
Acq O&M	0.0	--	--	0.0	0.0	--	0.0
<b>Total</b>	<b>44740.1</b>	<b>--</b>	<b>--</b>	<b>116168.8</b>	<b>47217.1</b>	<b>--</b>	<b>138599.3</b>

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual BMDS Accountability Report (BAR), which includes schedule, technical, test, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The BAR includes unit cost baselines for key assets (e.g. Ground-Based Interceptors and AN/TPY-2 radars) comprising the BMDS.

Quantity	SAR Baseline Plan Est	Current APB	Current Estimate
RDT&E	0	0	0
Procurement	0	0	0
Total	0	0	0

Quantities of Key BMDS Assets (grouped by appropriation, total buys from FY 2002-2019)

<u>Program</u>	<u>Component</u>	<u>RDT&amp;E</u>	<u>Procurement</u>
Terminal High Altitude Area Defense (THAAD)	Batteries	2	5
	Interceptors	50	318
Aegis	SM-3 Block I/IA Interceptors	95	55
	SM-3 Block IB Interceptors	21	311
Ground Based Midcourse Defense	Ground Based Interceptors (GBIs)	58	8
Sensors	AN/TPY-2 Radars	7	5

## Cost and Funding

### Funding Summary

#### Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	90605.1	5537.2	5583.2	5549.9	5326.1	4985.1	4791.0	0.0	122377.6
Procurement	4924.5	1560.2	1418.6	1610.4	1783.2	1836.2	1964.8	0.0	15097.9
MILCON	407.5	177.1	40.7	239.6	95.6	94.6	68.7	0.0	1123.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2015 Total	95937.1	7274.5	7042.5	7399.9	7204.9	6915.9	6824.5	0.0	138599.3
PB 2014 Total	95970.1	7427.7	7549.4	7141.7	6992.9	7064.9	0.0	0.0	132146.7
Delta	-33.0	-153.2	-506.9	258.2	212.0	-149.0	6824.5	0.0	6452.6

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development		0	0	0	0	0	0	0	0	0
Production		0	0	0	0	0	0	0	0	0
PB 2015 Total		0	0	0	0	0	0	0	0	0
PB 2014 Total		0	0	0	0	0	0	0	0	0
Delta		0	0	0	0	0	0	0	0	0

## Cost and Funding

### Annual Funding By Appropriation

#### Annual Funding TY\$

#### 0400 | RDT&E | Research, Development, Test, and Evaluation, Defense-Wide

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2002	--	--	--	--	--	--	6618.8
2003	--	--	--	--	--	--	6446.3
2004	--	--	--	--	--	--	7566.8
2005	--	--	--	--	--	--	8826.7
2006	--	--	--	--	--	--	7690.2
2007	--	--	--	--	--	--	9381.3
2008	--	--	--	--	--	--	8655.3
2009	--	--	--	--	--	--	8415.3
2010	--	--	--	--	--	--	6947.3
2011	--	--	--	--	--	--	7406.4
2012	--	--	--	--	--	--	6798.9
2013	--	--	--	--	--	--	5851.8
2014	--	--	--	--	--	--	5537.2
2015	--	--	--	--	--	--	5583.2
2016	--	--	--	--	--	--	5549.9
2017	--	--	--	--	--	--	5326.1
2018	--	--	--	--	--	--	4985.1
2019	--	--	--	--	--	--	4791.0
<b>Subtotal</b>	--	--	--	--	--	--	<b>122377.6</b>

## Annual Funding BY\$

## 0400 | RDT&amp;E | Research, Development, Test, and Evaluation, Defense-Wide

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 \$M	Non End Item Recurring Flyaway BY 2002 \$M	Non Recurring Flyaway BY 2002 \$M	Total Flyaway BY 2002 \$M	Total Support BY 2002 \$M	Total Program BY 2002 \$M
2002	--	--	--	--	--	--	6567.6
2003	--	--	--	--	--	--	6295.8
2004	--	--	--	--	--	--	7214.0
2005	--	--	--	--	--	--	8158.5
2006	--	--	--	--	--	--	6910.1
2007	--	--	--	--	--	--	8230.7
2008	--	--	--	--	--	--	7454.4
2009	--	--	--	--	--	--	7158.3
2010	--	--	--	--	--	--	5820.5
2011	--	--	--	--	--	--	6087.8
2012	--	--	--	--	--	--	5498.5
2013	--	--	--	--	--	--	4660.2
2014	--	--	--	--	--	--	4338.1
2015	--	--	--	--	--	--	4295.4
2016	--	--	--	--	--	--	4187.7
2017	--	--	--	--	--	--	3940.0
2018	--	--	--	--	--	--	3615.3
2019	--	--	--	--	--	--	3406.6
<b>Subtotal</b>	--	--	--	--	--	--	<b>103839.5</b>



## Annual Funding TY\$

## 0300 | Procurement | Procurement, Defense-Wide

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2009	--	--	206.6	--	206.6	--	206.6
2010	--	--	835.7	--	835.7	--	835.7
2011	--	--	1070.8	--	1070.8	--	1070.8
2012	--	--	1347.2	--	1347.2	--	1347.2
2013	--	--	1464.2	--	1464.2	--	1464.2
2014	--	--	1560.2	--	1560.2	--	1560.2
2015	--	--	1418.6	--	1418.6	--	1418.6
2016	--	--	1610.4	--	1610.4	--	1610.4
2017	--	--	1783.2	--	1783.2	--	1783.2
2018	--	--	1836.2	--	1836.2	--	1836.2
2019	--	--	1964.8	--	1964.8	--	1964.8
<b>Subtotal</b>	--	--	<b>15097.9</b>	--	<b>15097.9</b>	--	<b>15097.9</b>

## Annual Funding BY\$

## 0300 | Procurement | Procurement, Defense-Wide

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 \$M	Non End Item Recurring Flyaway BY 2002 \$M	Non Recurring Flyaway BY 2002 \$M	Total Flyaway BY 2002 \$M	Total Support BY 2002 \$M	Total Program BY 2002 \$M
2009	--	--	174.2	--	174.2	--	174.2
2010	--	--	694.2	--	694.2	--	694.2
2011	--	--	872.5	--	872.5	--	872.5
2012	--	--	1080.4	--	1080.4	--	1080.4
2013	--	--	1155.7	--	1155.7	--	1155.7
2014	--	--	1210.4	--	1210.4	--	1210.4
2015	--	--	1080.1	--	1080.1	--	1080.1
2016	--	--	1202.3	--	1202.3	--	1202.3
2017	--	--	1305.2	--	1305.2	--	1305.2
2018	--	--	1317.7	--	1317.7	--	1317.7
2019	--	--	1382.3	--	1382.3	--	1382.3
<b>Subtotal</b>	--	--	<b>11475.0</b>	--	<b>11475.0</b>	--	<b>11475.0</b>

**Annual Funding TY\$**  
**0500 | MILCON | Military Construction,**  
**Defense-Wide**

<b>Fiscal Year</b>	<b>Total Program TY \$M</b>
2002	8.2
2003	24.9
2004	24.4
2005	22.3
2006	4.9
2007	--
2008	--
2009	18.3
2010	98.7
2011	--
2012	67.1
2013	138.7
2014	177.1
2015	40.7
2016	239.6
2017	95.6
2018	94.6
2019	68.7
<b>Subtotal</b>	<b>1123.8</b>

**Annual Funding BY\$**  
**0500 | MILCON | Military Construction,**  
**Defense-Wide**

<b>Fiscal Year</b>	<b>Total Program BY 2002 \$M</b>
2002	8.0
2003	23.7
2004	22.6
2005	20.1
2006	4.3
2007	--
2008	--
2009	15.2
2010	80.1
2011	--
2012	52.7
2013	107.0
2014	134.2
2015	30.2
2016	174.5
2017	68.3
2018	66.2
2019	47.2
<b>Subtotal</b>	<b>854.3</b>

## Low Rate Initial Production

There is no LRIP for this Program.

## Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Japan	8/5/2013	0	7.5	FMS Case JA-P-FTZ: SM-3 SCD Propulsion Test Vehicle / Control Test Vehicle Test Execution. No major deliveries.
Japan	11/5/2012	0	2.0	FMS Case JA-P-FUE: Standard Missile-3 (SM-3) Cooperative Development (SCD) Insensitive Munitions Testing. No major deliveries.
Japan	9/27/2012	0	2.0	FMS Case JA-P-FUD: SM-3 SCD Ground Flight Testing. No major deliveries.
United Arab Emirates	12/25/2011	2	4904.8	FMS Case AE-B-UAF, Two THAAD Batteries, consisting of 192 interceptors, 2 AN/TPY-2 Radars, 12 Launchers, 8 Missile Round Pallets, 7 MIDS Terminals, 4 AMMPS, 10 PR4G TRC-9105 Radios, 6 PR4G TRC-9301C Radios, various tactical vehicles, trucks, training aids & devices, spare parts, training, government and contractor technical assistance, books & publications, and repair & return.
United Arab Emirates	4/30/2010	0	13.8	FMS Case AE-B-UAE, Technical Assistance & Site Survey. Deliveries: no major deliveries.
Japan	3/22/2010	2	20.0	FMS Case JA-P-FON: SM-3 BLK IA Spares and Return, Repair, Re-shipment (RRR). Deliveries: SM-3 Kinetic Warhead (KW); MK72 Rocket Booster Motor.
Japan	1/15/2010	0	8.0	FMS Case JA-P-FPX: Japan Hardware in the Loop (HWIL). No major deliveries.
Japan	11/19/2008	0	21.0	FMS Case JA-P-CAM: Japan Computer Program Test Site JABMD Upgrade. No major deliveries.
Japan	9/11/2008	0	12.0	FMS Case JA-P-FQV: SM-3 BLK IA Spares. No major deliveries.
Japan	8/19/2008	0	59.0	FMS Case JA-P-CAN: JS KIRISHIMA (DDG 174) Firing Event. No major deliveries.
Japan	3/3/2008	9	202.0	FMS Case JA-P-LWA: Japan Aegis BMD Block 2004 Upgrade of JS KIRISHIMA (DDG 174). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles.
Japan	1/18/2008	0	53.0	FMS Case JA-P-CAE: JS MYOKO (DDG 175) Firing Event. No major deliveries.
Netherlands	8/31/2006	0	7.0	FMS Case NE-P-GLK: Participation in ABMD Test Events and NATO BMD Trade Studies. No major deliveries.
Japan	8/21/2006	0	56.0	FMS Case JA-P-BIR: JS CHOKAI (DDG 176) Firing Event. No major deliveries.

Japan	8/21/2006	9	209.0	FMS Case JA-P-LVK: Japan Aegis BMD Block 2004 Upgrade of JS MYOKO (DDG 175). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles.
Japan	10/12/2005	9	167.0	FMS Case JA-P-LUX: Japan Aegis BMD Block 2004 Upgrade of JS CHOKAI (DDG 176). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles.
Japan	8/17/2004	9	309.0	FMS Case JA-P-LUH, Japan Aegis BMD Block 2004 Upgrade of JS KONGO (DDG 173). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles.
Netherlands	9/28/2000	0	4.0	FMS Case NE-P-GJS: Theater Ballistic Missile Defense Concept Validation Phase. No major deliveries.

## Nuclear Costs

None



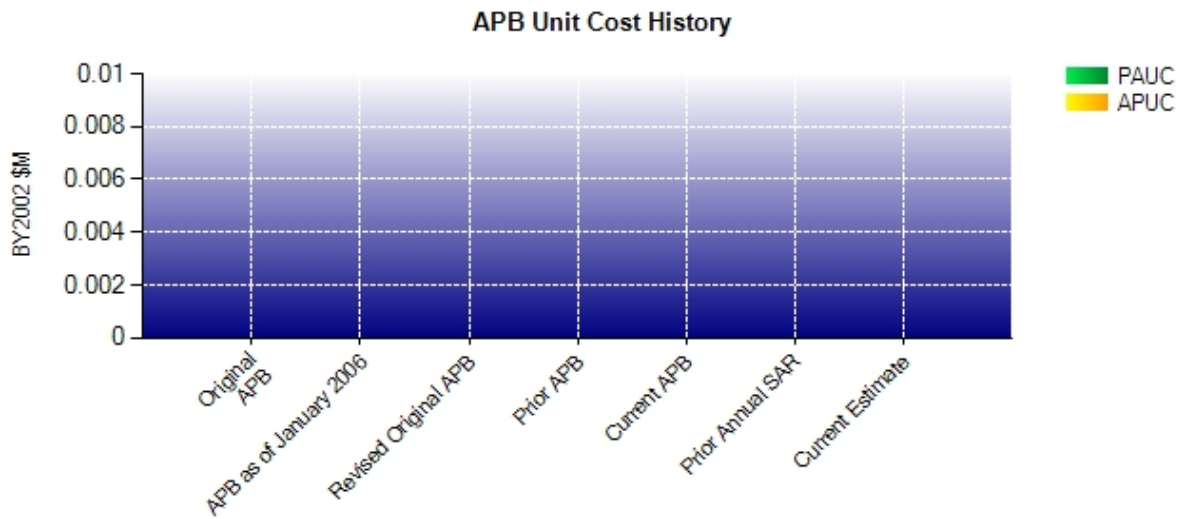
## Unit Cost

### Unit Cost Report

	BY2002 \$M	BY2002 \$M	
Unit Cost	Current UCR Baseline	Current Estimate (DEC 2013 SAR)	BY % Change
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	--	116168.8	
Quantity	--	0	
Unit Cost	--	--	--
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	--	11475.0	
Quantity	--	0	
Unit Cost	--	--	--

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual BMDS Accountability Report (BAR), which includes schedule, technical, test, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The BAR includes unit cost baselines for key assets (e.g. Ground-Based Interceptors and AN/TPY-2 radars) comprising the BMDS.

### Unit Cost History



	Date	BY2002 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
<b>Original APB</b>	N/A	N/A	N/A	N/A	N/A
<b>APB as of January 2006</b>	N/A	N/A	N/A	N/A	N/A
<b>Revised Original APB</b>	N/A	N/A	N/A	N/A	N/A
<b>Prior APB</b>	N/A	N/A	N/A	N/A	N/A
<b>Current APB</b>	N/A	N/A	N/A	N/A	N/A
<b>Prior Annual SAR</b>	DEC 2012	N/A	N/A	N/A	N/A
<b>Current Estimate</b>	DEC 2013	N/A	N/A	N/A	N/A

### SAR Unit Cost History

#### Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC Plan Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	--	--	--	--	--	--	--	--	0.000

PAUC Unit Cost History is not available: No Initial PAUC Estimate calculated due to lack of defined quantities.

**Current SAR Baseline to Current Estimate (TY \$M)**

Initial APUC Plan Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	--	--	--	--	--	--	--	--	0.000

APUC Unit Cost History is not available: No Initial APUC Estimate calculated due to lack of defined quantities.

**SAR Baseline History**

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	N/A	N/A	N/A
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	47217.1	N/A	N/A	138599.3
Total Quantity	0	N/A	N/A	0
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	N/A	N/A

**Cost Variance**

<b>Summary Then Year \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Plan Est)	47217.1	--	--	47217.1
Previous Changes				
Economic	+1922.1	+206.5	-5.4	+2123.2
Quantity	--	--	--	--
Schedule	-1684.3	-124.7	--	-1809.0
Engineering	+48253.2	-1296.1	-31.8	+46925.3
Estimating	-9086.6	-911.4	+842.3	-9155.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+39404.4	-2125.7	+805.1	+38083.8
Current Changes				
Economic	-337.8	-85.0	-7.5	-430.3
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+1462.2	--	--	+1462.2
Estimating	-1800.6	+208.6	+188.2	-1403.8
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-676.2	+123.6	+180.7	-371.9
Adjustments	+36432.3	+17100.0	+138.0	+53670.3
Total Changes	+75160.5	+15097.9	+1123.8	+91382.2
CE - Cost Variance	122377.6	15097.9	1123.8	138599.3
CE - Cost & Funding	122377.6	15097.9	1123.8	138599.3

Summary Base Year 2002 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Plan Est)	44740.1	--	--	44740.1
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	-1417.0	-91.5	--	-1508.5
Engineering	+40930.6	-977.2	-24.3	+39929.1
Estimating	-7644.4	-727.1	+648.5	-7723.0
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+31869.2	-1795.8	+624.2	+30697.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+1095.7	--	--	+1095.7
Estimating	-1365.0	+169.6	+130.9	-1064.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-269.3	+169.6	+130.9	+31.2
Adjustments	+27499.5	+13101.2	+99.2	+40699.9
Total Changes	+59099.4	+11475.0	+854.3	+71428.7
CE - Cost Variance	103839.5	11475.0	854.3	116168.8
CE - Cost & Funding	103839.5	11475.0	854.3	116168.8

Previous Estimate: December 2012

### Cost Variance Memo

Adjustments	Then-Year \$M				Base-Year \$M			
	RDT&E	PROC	MILCON	TOTAL	RDT&E	PROC	MILCON	TOTAL
Dec 2009 SAR	14,302.0	9,520.3	38.1	23,860.4	11,204.2	7,582.5	29.4	18,816.1
Dec 2010 SAR	6,279.4	2,191.1	10.1	8,480.6	4,805.2	1,662.4	7.6	6,475.2
Dec 2011 SAR	5,895.6	1,533.8	10.5	7,439.9	4,368.4	1,126.6	7.6	5,502.6
Dec 2012 SAR	5,164.3	1,890.0	10.6	7,064.9	3,715.1	1,347.4	7.4	5,069.9
Dec 2013 SAR	4,791.0	1,964.8	68.7	6,824.5	3,406.6	1,382.3	47.2	4,836.1
<b>Total</b>	<b>36,432.3</b>	<b>17,100.0</b>	<b>138.0</b>	<b>53,670.3</b>	<b>27,499.5</b>	<b>13,101.2</b>	<b>99.2</b>	<b>40,699.9</b>

<b>RDT&amp;E</b>	<b>\$M</b>	
	<b>Base Year</b>	<b>Then Year</b>
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-337.8
Adjustment for current and prior escalation. (Estimating)	+105.5	+132.7
Ground Based Midcourse sustainment transferred to Operations & Maintenance (Estimating)	-574.8	-763.0
Reduction resulting from test cost efficiencies and other test adjustments (Estimating)	-454.0	-614.8
FY 2013 sequestration reduction impacting BMDS system development (Estimating)	-400.0	-502.2
Reduced technology efforts but reoriented to focus on high payoff technology to keep pace with threat (Estimating)	-281.0	-357.2
Special Programs adjustments (Estimating)	-87.8	-115.9
Consolidation of management headquarters (Estimating)	-10.0	-13.1
Initiated redesign of Exoatmospheric Kill Vehicle (Engineering)	+542.1	+725.0
Congressional increase to Israeli programs (Estimating)	+281.8	+356.9
Incorporation of Long Range Discrimination Radar for Homeland Defense (Engineering)	+359.6	+484.2
Discrimination improvements for Homeland Defense (Engineering)	+194.0	+253.0
Refined cost estimates and other adjustments (Estimating)	+55.3	+76.0
<b>RDT&amp;E Subtotal</b>	<b>-269.3</b>	<b>-676.2</b>

<b>Procurement</b>	<b>\$M</b>	
	<b>Base Year</b>	<b>Then Year</b>
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-85.0
Adjustment for current and prior escalation. (Estimating)	+23.9	+30.3
Reduction of Aegis SM-3 Block IB interceptors (Estimating)	-254.4	-344.5
FY 2013 sequestration reduction resulting in impacts to BMDS subsystems (Estimating)	-104.7	-132.7
FY 2013 Congressional increase for Iron Dome (Estimating)	+166.5	+211.0
FY 2013 Congressional increase for an additional AN/TPY-2 radar, radar spares, and other adjustments (Estimating)	+160.4	+204.0
Increase for THAAD interceptors and ground components for additional battery (Estimating)	+139.0	+187.8
Refined cost estimates and other adjustments (Estimating)	+38.9	+52.7
<b>Procurement Subtotal</b>	<b>+169.6</b>	<b>+123.6</b>

<b>MILCON</b>	<b>\$M</b>	
	<b>Base Year</b>	<b>Then Year</b>
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-7.5
Adjustment for current and prior escalation. (Estimating)	+4.3	+5.6
Congressional reductions to Aegis Ashore site in Romania (Estimating)	-55.8	-72.9
FY 2013 sequestration reduction and other adjustments (Estimating)	-7.7	-9.9

Facilities construction for Long Range Discrimination Radar site for Homeland Defense (Estimating)	+190.1	+265.4
MILCON Subtotal	+130.9	+180.7

## Contracts

### Appropriation: RDT&E

Contract Name	<b>Targets and Countermeasures Prime Contract</b>
Contractor	Lockheed Martin Corporation Space Systems Company
Contractor Location	Huntsville, AL 35806
Contract Number, Type	HQ0006-04-D-0006, CPAF
Award Date	December 09, 2003
Definitization Date	April 19, 2004

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
210.7	N/A	N/A	2483.2	N/A	N/A	2343.4	2359.0

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to evolving BMDS test requirements. These requirements, documented through semi-annual changes to the Integrated Master Test Plan, drive modifications to the Targets and Countermeasures Lockheed Martin Prime Contract.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-92.3	-10.3
Previous Cumulative Variances	-76.0	-34.7
Net Change	-16.3	+24.4



**Cost and Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to the following:

- Continued positive variances on DO-27 Medium Range Ballistic Missile (MRBM) T3; DO-30 Foreign Military Asset (FMA) and Services Support programs of \$6.7M. Recovery of negative CY12 cost variance on Delivery Order (DO) 29 Modified Ballistic Reentry Vehicle (MBRV) -8 program, change of \$3.2M. Previous cost variances on DO-22 Extended Medium Range Ballistic Missile (eMRBM) and Launch Vehicle (LV) 2 programs; DO-29 MBRV-7 program; and DO-29 task orders were maintained with little additional cost deterioration, change of -\$9.2M. Net cost variance change across multiple program efforts of -\$0.7M.
- Negative variances in DO-29 MBRV-5 program were realized due to multiple variance drivers related to Avionics Control Module (ACM), Critical Design Review (CDR) and post CDR required design changes. Negative CY cost variance of -\$17.0M.

The favorable net change in the schedule variance is due to the following:

- Recovery of negative Calendar Year (CY) 12 cost variance on DO-22 eMRBM program efforts. Previous behind schedule position was due to late hardware deliveries in Support Equipment and Avionics Control Module areas. All components have now been delivered.
- As of January 2014, minimal negative schedule variance remains and it covers multiple program efforts:
  - o DO-22 eMRBM/LV2 -\$3.0M
  - o DO-27 MRBM T3 -\$1.4M
  - o DO-29 MBRV-5, MBRV-7 and MBRV-8 -\$5.3M
  - o DO-30 FMA -\$0.2M
  - o DO-23, 24, 25 Services Support -\$0.4M.

**Contract Comments**

The following actions have added scope to this contract over the course of CY 2013:

<b>Delivery Order</b>	<b>Amount</b>	<b>Description</b>
022 - Hardware	\$45.2M	Additional scope
024 – Mission Planning & Program Management	\$2.1M	Additional scope
025 – Launch Activities	\$7.4M	Additional scope
027 – Medium Range Ballistic Missile (MRBM) T-3	\$6.7M	Additional scope
029 – Re-Entry Vehicles	\$107.7M	Additional scope
<b>Total</b>	<b>\$169.1M</b>	

**Appropriation: RDT&E**

Contract Name	<b>Development and Sustainment Contract</b>
Contractor	The Boeing, Co., Missile Defense Systems
Contractor Location	Huntsville, AL 35806
Contract Number, Type	HQ0147-12-C-0004, CR/CPFF/CPIF/CPAF/FPIF
Award Date	December 30, 2011
Definitization Date	December 30, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
2816.8	N/A	N/A	3253.2	N/A	N/A	3316.0	3316.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the following contract actions:

2012

- Options Exercised: Clear Radar Integration and Development; Cape Cod Radar Integration and Development; Distributed Multi-echelon Training System (DMETS) Support.
- Engineering Change Proposals (ECPs): Additional Warfighter Training; Capability Enhancement (CE) II Exo-atmospheric Kill Vehicle (EKV) Software for Flight Test Ground-Based Interceptor (FTG-06b); CE-I FTG-07 execution.
- Task Instructions: Signature Measurement Test Article; Ground-Based Interceptor (GBI) Probabilistic Risk Assessment; Integrated System Test Capability (ISTC 2) BMDS Integrated Lab Concept and associated extension; BMDS System Specifications; Shoot Assess Shoot (SAS); In-flight Interceptor Communications System (IFICS) Data Terminal Technical Refresh; Increment 2 Probabilistic Risk Assessment (PRA) approach for GBI.

2013

- Options Exercised: Manufacture of Operational Interceptors; DMETS Support.
- ECPs: Joint Ground-Based Midcourse Defense Training and Exercise Center (JGTEC) Relocation; Conversion of Launch Facility (LF23) Switch Hitter; Boeing High Frequency Test Bed (HFTB) Support to Common Inertial Measurement Unit (IMU) Low Noise (LN200) Development; CE-11 Upgrade; and Alternate Divert Thruster Phase IV.
- Task Instructions: EKV Design Turn Options; GBI Fleet Reliability Assessment Training; Independent Fleet Assessment; FTG-07 Separation Identification for EKV; GBI EKV Laser Initiation Device for Service Life Extension (SLE); Stockpile Reliability Program (SRP) Asset #1 Phase 2; Peterson Air Force Base (PAFB) NORAD & U.S. Northern Command (N-NC) Bldg 2; Arm/Disarm Switch Diode; and Installation of Encryption Keys.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-6.8	-43.4
Previous Cumulative Variances	+6.6	-15.1
Net Change	-13.4	-28.3

**Cost and Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to more effort than planned for integrating DSC with the MDA Integrated Master Test Plan (IMTP); delayed Ground Systems (GS) Preliminary Design Review/Critical Design Review (PDR/CDR) for the Configuration 2 (C2) GBI and Non-Tactical Equipment (NTE) upgrades; MDA directed delay in FTG-06b resulting in the reallocation of resources to support Ground Test Integrated (GTI-04e) test planning tasks and additional proposal preparation effort required for numerous ECPs.

The unfavorable net change in the schedule variance is due to delayed GBI Upgrades, Fleet Maintenance, Materials and Spares; Ground and Flight Test Slips; delays in GBI Regulator Qualification Testing, IMU Characterization and Booster Stack non-significant Material; late Engineering Design Reviews, Material (Sunshade, Divert Attitude Control System (DACS) and Harnesses) and Consolidated Booster Avionics Upgrade (CBAU) Software, Mechanical/Propulsion Engineering.

**Appropriation: RDT&E**

Contract Name **SM-3 Technology Development of Production Missiles**  
 Contractor Raytheon Missile Systems  
 Contractor Location Tucson, AZ 85701  
 Contract Number, Type N00024-07-C-6119, CPIF  
 Award Date May 14, 2007  
 Definitization Date February 15, 2008

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
146.9	N/A	N/A	1543.0	N/A	N/A	1405.0	1430.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of additional Missile Development Contract Line Item Numbers (CLINs).

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-13.0	-36.0
Previous Cumulative Variances	-14.0	-15.0
Net Change	+1.0	-21.0

**Cost and Schedule Variance Explanations**

The favorable net change in the cost variance is due to completion of the supplier's manufacture readiness effort.

The unfavorable net change in the schedule variance is due to corrective actions for the Third Stage Rocket Motor (TSRM) energetic event. Utilization of Labor to complete the first lot of IB units slowed planned effort on subsequent missile deliveries. Actions have completed and deliveries are getting back on track-verified at recent Integrated Baseline Review.

**Appropriation: RDT&E**

Contract Name **Block IIA AUR Development & Integration**  
 Contractor Raytheon Company  
 Contractor Location 1151 E Hermans Rd  
 Tucson, AZ 85756  
 Contract Number, Type HQ0276-10-C-0005, CPIF/CPAF  
 Award Date September 08, 2010  
 Definitization Date September 08, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
160.0	N/A	N/A	1442.0	N/A	N/A	1462.0	1472.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of additional Missile Development effort.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-41.0	-26.0
Previous Cumulative Variances	-3.0	-16.0
Net Change	-38.0	-10.0

**Cost and Schedule Variance Explanations**

The unfavorable net change in the cost variance is due to additional effort and resources required to support Guidance Electronics Unit (GEU) Circuit Card Assembly (CCA) Pre-Production designs, and Actuation System & Avionics efforts at Aerojet.

The unfavorable net change in the schedule variance is due to delayed completion of Guidance Section Production CCAs and Kinetic Warhead (KW) Inertial Measurement Unit (IMU) efforts, caused in part by delayed material deliveries.

**Contract Comments**

This is the second year reporting the Raytheon Aegis Ballistic Missile Defense effort for the SM-3 Block IIA in the Missile Defense Agency SAR submission.

**Appropriation: RDT&E**

Contract Name **SM-3 Technology Development of Block IB/IA Missiles**  
 Contractor Raytheon Missile Systems  
 Contractor Location Tucson, AZ 85756  
 Contract Number, Type HQ0276-11-C-0002, CPAF  
 Award Date January 15, 2011  
 Definitization Date March 15, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
594.0	N/A	N/A	671.0	N/A	N/A	658.0	664.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to Flight Test Support, continued verification of technology insertion, discrimination improvement and service life extension to September 30, 2015.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	+5.0	-3.0
Previous Cumulative Variances	-1.0	-5.0
Net Change	+6.0	+2.0

**Cost and Schedule Variance Explanations**

The favorable net change in the cost variance is due to recovery of previous Throttleable Divert and Attitude Control System negative variances.

The favorable net change in the schedule variance is due to recovery of previous System Qualification and Hazard testing (to discover root cause, apply fixes and complete testing) negative variances. Additional testing required in order to meet the level of assurance on the Attitude Control System.

**Contract Comments**

Effort remaining includes Flight Test Support, continued verification of technology insertion, discrimination improvement and service life extension to September 30, 2015.

**Appropriation: RDT&E**

Contract Name	<b>THAAD Advanced Capability Development</b>
Contractor	Lockheed Martin Corporation
Contractor Location	Huntsville, AL 35806
Contract Number, Type	HQ0147-12-D-0001, CPFF/FFP
Award Date	February 01, 2012
Definitization Date	February 01, 2012

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
961.2	N/A	N/A	961.2	N/A	N/A	961.2	961.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	+5.9	-0.4
Previous Cumulative Variances	--	--
Net Change	+5.9	-0.4

**Cost and Schedule Variance Explanations**

The favorable cumulative cost variance is due to less required maintenance for system labs (on Task Order (TO) 1), thereby allowing personnel to be diverted to other high priority tasks; and, TO6 work being done more efficiently than planned and subcontractor (Raytheon) reuse of materials (rather than buy/purchase).

The unfavorable cumulative schedule variance is due to TO2 Weapon System Engineering and Integration Team efforts completing later than planned; and, on TO6 due to subcontractor delayed material receipt and manufacturing tasks.

**Contract Comments**

This is the first time this contract is being reported.

This is the first year reporting this effort in the MDA SAR submission.

## Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	0	--
Total Program Quantity Delivered	0	0	0	--

### Expended and Appropriated (TY \$M)

Total Acquisition Cost	138599.3	Years Appropriated	13
Expended to Date	92538.0	Percent Years Appropriated	72.22%
Percent Expended	66.77%	Appropriated to Date	103211.6
Total Funding Years	18	Percent Appropriated	74.47%

The above data is current as of 2/14/2014.



## Operating and Support Cost

### BMDS

<b>Assumptions and Ground Rules</b>
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Cost Estimate Reference:

None

Sustainment Strategy:

None

Antecedent Information:

None

Unitized O&S Costs BY2002 \$K			
Cost Element	BMDS		No Antecedent (Antecedent)
Unit-Level Manpower	0.000		0.000
Unit Operations	0.000		0.000
Maintenance	0.000		0.000
Sustaining Support	0.000		0.000
Continuing System Improvements	0.000		0.000
Indirect Support	0.000		0.000
Other	0.000		0.000
<b>Total</b>	<b>--</b>		<b>--</b>

Unitized Cost Comments:

None

	Total O&S Cost \$M			
	APB Objective/Threshold		Current Estimate	
	BMDS	BMDS	BMDS	No Antecedent (Antecedent)
<b>Base Year</b>	N/A	N/A	N/A	N/A
<b>Then Year</b>	N/A	N/A	N/A	N/A

Total O&S Costs Comments:

None

<b>Disposal Costs:</b>
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None