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Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification						Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	893,040	1,122,669	1,059,103	1,129,425	1,221,650	1,067,587	1,054,753	1,089,078
0709 AEGIS Block 2004 Test Bed	136,257	23,043	0	0	0	0	0	0
0809 AEGIS BMD Block 2006	448,876	395,283	75,400	42,600	0	0	0	0
0909 AEGIS BMD Block 2008	254,007	575,620	721,133	592,914	166,100	31,400	0	0
0009 AEGIS BMD Block 2010	0	40,404	71,456	162,819	450,586	324,929	32,006	29,493
R109 AEGIS BMD Block 2012	0	8,684	26,700	130,300	316,800	412,700	687,781	758,219
0918 Sea-Based Terminal Block 2008	0	15,000	62,000	10,000	0	0	0	0
R218 Sea-Based Terminal Block 2014	0	0	13,000	39,000	60,000	65,000	130,000	163,000
0402 Japanese Cooperative Program	34,792	50,606	74,400	134,900	206,200	221,500	193,700	127,000
0602 Program-Wide Support	19,108	14,029	15,014	16,892	21,964	12,058	11,266	11,366
Amount Included in PE 0904903D					-191,169	-79,823	-29,285	-29,753
Total PE Cost Reflected in R-1	893,040	1,122,669	1,059,103	1,129,425	1,030,481	987,764	1,025,468	1,059,325

A. Mission Description and Budget Item Justification

A.1 System Element Description

The Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense Capability in Aegis cruisers and destroyers to defend the nation, deployed forces, friends and allies, and to incrementally increase this capability by delivering evolutionary spiral improvements as part of BMDS block upgrades. The Aegis BMD element of the BMDS builds upon the existing Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures deployed in Aegis cruisers and destroyers. 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 Missile (SRBM), Medium-Range Ballistic Missile (MRBM), Intermediate-Range Ballistic Missile (IRBM), and selected long-range class threats in the midcourse phase of flight. Spiral upgrades to both the Aegis BMD Weapon System and the SM-3 configurations will enable Aegis BMD to provide effective, supportable defensive capability against more difficult threats, including Long Range Ballistic Missiles (LRBMs).

During the Block 04 timeframe Aegis BMD provided Long Range Surveillance and Track (LRS&T) capability to the BMDS against Ballistic Missile threats of all ranges. It also provides initial engagement capability against SRBM to MRBM-class threats. Aegis BMD is fielding the Block 2004 capability in three spirals: The first spiral provides an early LRS&T capability (BMD 3.0E Weapon System) to support BMDS engagements in support of Homeland Defense; The second spiral provides an initial engagement capability against SRBMs and MRBMs on Aegis BMD cruisers

UNCLASSIFIED

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<p>with the BMD 3.0 Weapon System and SM-3 Blk I missile that can be used for emergency activation; Spiral three provides an operationally certified LRS&T and engagement capability on Aegis BMD cruisers and destroyers configured with the BMD 3.6 Weapon System which is capable of firing SM-3 Blk I and IA missiles using organic and external sensors.</p> <p>During Block 2006, Aegis BMD provides for the development and test of SPY-1 radar tracking, RF discrimination, and Aegis BMD Fire Control improvements to the BMD Weapon System. Block 2006 will deliver the Aegis BMD Signal Processor (BSP) and computer program engineering load to the Combat System Engineering Development Site (CSEDS) for testing. Also the BMD 3.6 Weapon System will be installed on Aegis cruisers and destroyers, tested during at-sea firing test missions, assessed for future improvements, and begin efforts to incorporate an initial, near-term sea based terminal capability into this baseline. SM-3 Blk IA missiles will also be tested, assessed for future improvements, and delivered for deployment.</p> <p>Aegis BMD Block 2008 improves system effectiveness against an expanding threat set to include a fielded capability against some IRBM and long-range threats. This will be achieved by means of modifications to the Weapon System (BMD 4.0/4.0.1) that focus on the new RF discrimination and tracking capability, and an upgraded SM-3 guided missile. The Aegis BMD 4.0/4.0.1 Weapon System will build on Block 2006 BSP development, integrating it with an updated variant of the SM-3 (SM-3 Blk IB). The SM-3 Blk IB configuration includes a performance-enhancing two-color IR seeker, and a Throttleable Divert and Attitude Control System (TDACS), which provides performance and manufacturing improvements and lowers unit cost. The initial capability (BMD 4.0) will be delivered with the SM-3 Blk IA missile. BMD 4.0.1 will be an operationally certified system firing either the SM-3 Blk IA or IB missile. Aegis BMD will also complete the installation of the BMD 3.6 Weapon System on Aegis cruisers and destroyers, complete delivery of SM-3 Blk IA missiles for deployment, and begin delivery of SM-3 Blk IB missiles for at-sea testing and deployment.</p> <p>Additionally, Block 2008 will provide for an integrated near-term Sea Based Terminal (SBT) capability against a finite set of Short Range Ballistic Missiles. BMD 3.6.1 will incorporate a fuze modified SM-2 Block IV missile provided by a separate OPNAV sponsored effort and will build on BMD 3.6 to provide a capability (BMD 3.6.1) against additional threats. The updated BMD 3.6.1 will continue efforts to refine Aegis Launch on AN/TPY-2 and will bridge the gap between the operational deployment of BMD 3.6 and BMD 4.0.1.</p> <p>Aegis BMD Block 2010 will integrate the BMD mission with the Navy-developed Open Architecture system in order to preserve the sea-based BMD capability as Navy ship modernization plans are executed. The Aegis BMD Weapon System will transition from older, MIL-standard computers to new Commercial Off The Shelf (COTS) computing plants. This integration will allow ships' operators to conduct combat missions with a single set of tactical computer programs running on the same computer system. This change will enhance display features and eliminate the need for a separate computing system specific to the BMD mission. This will enable Aegis BMD to maintain compatibility with Surface Navy ships and align with the</p>		

UNCLASSIFIED

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<p>Navy's modernization plan, while also expanding the number of ships available to serve as potential candidates for the BMD mission. Future fielded Aegis BMD system improvements will be built in this new architecture. Also during this timeframe, Aegis BMD will begin installations of the BMD 4.0.1 Weapon System on Aegis cruisers and destroyers, continue to deliver SM-3 Blk IB missiles for testing and deployment, and assess weapon system and missile performance to determine the direction for further improvements.</p> <p>Aegis BMD and the Japan Defense Agency (JDA) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of a spiral upgrade to the SM-3 Blk IB missile - 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 a spiral Block upgrade to the Aegis Ballistic Missile Defense system.</p> <p>Aegis BMD Block 2012 will integrate and test the SM-3 Blk IIA missile with the Aegis BMD Weapon System in Open Architecture, which will expand the battlespace to include IRBM and selected longer-range threats. Weapon System modifications will also be made to accommodate an Engage-on-Remote capability and include a more robust set capability. Also during this timeframe, Aegis BMD will complete 3.6.1 deliveries and will continue to install the BMD 4.0.1 Weapon System on Aegis cruisers and destroyers and assess performance to determine the direction for further improvements.</p> <p>Additionally, Block 2012-2014 will provide for an integrated Sea Based Terminal (SBT) capability. It is envisioned that BMD 5.X will incorporate a new missile type (to be determined), which will build on the near-term Sea Based Terminal capability developed as a part of Aegis BMD 3.6.1 to provide a more capable and robust sea based terminal missile defense capability.</p> <p><u>A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)</u></p> <p>Aegis BMD provides a mobile, forward-deployable LRS&T capability to the BMDS against ballistic missile threats of all ranges. In Block 2004, Aegis BMD also provided an engagement capability against short to medium range threats. In Block 2006, Aegis BMD begins development of an upgraded LRS&T capability; the Block 2008 fielded configuration will expand both LRS&T and engagement capability to include more complex threats including limited IRBM threats. Block 2008 will also see the introduction of a near-term Sea-Based Terminal capability to engage limited short range threats in the terminal phase of flight. Block 2010 will broaden program application for U.S. and international Aegis ship population by implementing Open Architecture. Block 2012 will further expand engagement capability against long-range threats, to include some ICBM-class threats. Aegis BMD Block upgrades will provide a capability to launch on and engage on cues from remote sensors, such as the AN/TPY-2, via Tactical Digital Information Link (TADIL), as well as provide launch and engage data to other BMDS weapon systems, such as GMD and THAAD. Improvements to the Aegis BMD Signal Processor (BSP) will improve target object discrimination. Further improvements to the missile, such as the SM-3 Blk IB and Blk IIA planned configurations, will increase BMD battlespace by increasing the SM-3 range, speed, and discrimination capability.</p>		

UNCLASSIFIED

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<p>APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)</p>	<p>R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis</p>	
<p>Block 2012-14 will also introduce a more robust Sea Based Terminal capability. Aegis BMD will also contribute to the BMDS through the participation in BMDS Concurrent Test, Training and Operations (CTTO) activities that will safely separate test, evaluation, and training venues from real-world activities; and allow injection of high-fidelity simulations to run realistic scenarios on operational equipment and networks. CTTO will enable end-to-end testing of the BMDS and enable BMDS training that allows operators to exercise any or all BMDS elements, as needed.</p> <p>Aegis BMD will deliver the following:</p> <ul style="list-style-type: none"> • Fifteen (15) Aegis Destroyers equipped with the Aegis BMD Weapon System to conduct the LRS&T and engagement missions • Three (3) Aegis Cruisers equipped with the Aegis BMD Weapon System to conduct the LRS&T and engagement missions • SM-3 Missile Deliveries - To Be Used for Testing and/or Deployment: <ul style="list-style-type: none"> ○ Five (5) SM-3 Blk I missiles ○ Six (6) MDP-1 SM-3 Blk I missiles ○ Two (2) ``Pathfinder`` SM-3 Blk IA Flight Test Rounds (FTRs) ○ Nineteen (19) MDP-1 SM-3 Blk IA missiles ○ Forty (40) MDP-2 SM-3 Blk IA and IB missiles, plus three (3) additional SM-3 Blk IA missiles (Congressionally-added) ○ Twenty-four (24) MDP-3 SM-3 Blk IB missiles ○ Forty-eight (48) MDP-4 SM-3 Blk IB missiles <p><u>A.3 Major System Element Goals</u></p> <ul style="list-style-type: none"> • Block 2006 - Improve the Weapon System capability to identify and classify Ballistic Missile threat objects from debris and other components: Aegis BSP Engineering Development Model (EDM). • Block 2008 - Improve missile capability to identify and target the threat object through the All Reflective Optics (ARO), Advanced Signal Processor (ASP), and two-color missile seeker. Improve missile kinetic warhead (KW) kinematic performance: Throttleable Divert and Attitude Controls System (TDACS). Improve BMDS C2BMC performance: engagement coordination with THAAD and Patriot, kill assessment; and missile downlink system for improved kill assessment. Increase battlespace: enhanced Launch on Remote (via TADIL) and Aegis BMD integration with Joint Defense Planner. • Introduce a Near-Term Sea Based Terminal capability against SRBMs in Block 2008. • Block 2010 - Broaden program application for U.S. and international Aegis ship population by implementing Open Architecture. Improved BMDS C2BMC performance: migrate to Joint Tactical Radio System and Common Link Interface Processor, and Forcenet/GIG compliance. • Block 2012 - Increase battlespace: SM-3 Blk IIA integration into the Aegis BMD Weapon System, Engage on Remote, improved feature-aided track correlation, and improved BMDS sensor data fusion. 		

UNCLASSIFIED

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<ul style="list-style-type: none"> • Introduce a more robust Sea Based Terminal capability in Block 2014. • SCD - Initiate U.S./Japan SM-3 Cooperative Development (SCD) of the SM-3 Blk IIA Missile (21-inch diameter SM-3 missile). 			
A.4 Major Events Schedule and Description			
Major Event	Project	Timeframe	Description
Flight Test			
Japan Cooperative Research Project			
JCTV-1	0402	2Q FY 2006	<ul style="list-style-type: none"> • Conducted Joint Control Test Vehicle-1 (JCTV-1) Proof-of-Principle flight test to test the lightweight nosecone.
Flight Tests			
FTM-17	0009	3Q FY 2010	<ul style="list-style-type: none"> • Engagement of Group B Medium Range Ballistic Missile and a Group C Medium Range Ballistic Missile in a multi-warfare environment.
FTM-18	0009	3Q FY 2011	<ul style="list-style-type: none"> • Conduct live Developmental Test & Operational Test against IRBM and MRBM multiwarfare capability in a multiwarfare environment.
FTM 04-2 (FM-8)	0709	1Q FY 2006	<ul style="list-style-type: none"> • Conducted FTM 04-2 (FM-8) flight test to verify BMD 3.0 emergency engagement capability with an intercept of a Group B (MRBM) target using an SM-3 Blk I missile.
FTM-10	0809	3Q FY 2006	<ul style="list-style-type: none"> • Conducted FTM-10 flight test to verify BMD 3.6 engagement capability with an intercept of a Group B (MRBM) target using an SM-3 Blk IA missile, supporting BMD 3.6 certification.
FTM-11	0809	1Q FY 2007	<ul style="list-style-type: none"> • Conducted FTM-11 flight test to verify BMD 3.6 engagement capability with a near simultaneous multiple engagement and intercept of one low exo-atmospheric Group A (SRBM) target using an SM-3 Blk IA missile, and a BQM-74 aerial target using an SM-2 Blk IIIA missile.
FTM-11 4th Objective	0809	3Q FY 2007	<ul style="list-style-type: none"> • Conduct FTM-11 4th Objective flight test to verify BMD 3.6 engagement capability with a near simultaneous multiple engagement and intercept of one low exo-atmospheric Group A (SRBM) target using an SM-3 Blk IA missile, and a BQM-74 aerial target using an SM-2 Blk IIIA missile.
FTM-12	0809	3Q FY 2007	<ul style="list-style-type: none"> • Conduct FTM-12 flight test to verify BMD 3.6 engagement capability with an intercept of a Group B target using an SM-3 Blk IA missile.
FTM-13	0909	1Q FY 2008	<ul style="list-style-type: none"> • Detection, track and engagement of two simultaneous SRBMs.
FTM-14	0909	3Q FY 2008	<ul style="list-style-type: none"> • Launch on TADIL (LOT) engagement of Group F Intermediate Range Ballistic Missile.
FTM-19	R109	3Q FY 2012	<ul style="list-style-type: none"> • Standard Cooperative Development (SCD) SM-3 Block IIA missile launch with simulated target.
FTM-20	R109	2Q FY 2013	<ul style="list-style-type: none"> • Developmental Test & Operational Test live engagement against a Group C.
BLOCK 2008			
FTM-15	0918	2Q FY 2009	<ul style="list-style-type: none"> • Zero-pulse mission against Short Range Ballistic Missile.
Contract Activity			
Flight Tests			
FTM-16	0909	3Q FY 2009	<ul style="list-style-type: none"> • Engagement of Group B Medium Range Ballistic Missile.

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
Major Event	Project	Timeframe	Description
Critical Design Review			
Development Milestones			
Block 2010 System Design Review	0009	3Q FY 2008	<ul style="list-style-type: none"> Conduct a System Design Review of Aegis BMD Block 2010 with Open Architecture.
Block 2010 Preliminary Design Review	0009	2Q FY 2009	<ul style="list-style-type: none"> Conduct PDR for the Aegis BMD Block 2010 with Open Architecture.
Block 2010 Critical Design Review	0009	2Q FY 2010	<ul style="list-style-type: none"> Conduct CDR for Aegis BMD Block 2010 with Open Architecture.
Block 2010 Engineering Assessment	0009	4Q FY 2011	<ul style="list-style-type: none"> Perform an EA of Aegis BMD Block 2010 with Open Architecture
BMD 3.6 Engineering Assessment	0709	2Q FY 2006	<ul style="list-style-type: none"> Completed BMD 3.6 Engineering Assessment to provide an operationally-certified system with BMD LRS&T and engagement capability.
BMD 3.6 Weapon System Certification	0709	4Q FY 2006	<ul style="list-style-type: none"> Completed BMD 3.6 Weapon System certification following the BMD 3.6 Engineering Assessment.
BMD 4.0E Engineering Assessment	0809	1Q FY 2008	<ul style="list-style-type: none"> Complete development of the computer program upgrade BMD 4.0E, culminating with an Engineering Assessment (EA) in December 2007.
BMD 4.0 Engineering Assessment	0909	1Q FY 2009	<ul style="list-style-type: none"> Perform an EA of BMD 4.0 to provide a testbed system with the SM-3 Block IA missile.
BMD 4.0.1 Engineering Assessment	0909	1Q FY 2010	<ul style="list-style-type: none"> Perform EA of BMD 4.0.1 to provide an operationally-certified system with the SM-3 Blk IA or IB missile.
Block 2012 System Requirements Review	R109	1Q FY 2009	<ul style="list-style-type: none"> Conduct an SRR for Aegis BMD Block 2012.
Block 2012 System Design Review	R109	1Q FY 2010	<ul style="list-style-type: none"> Conduct SDR for the Aegis BMD Block 2012.
Block 2012 Preliminary Design Review	R109	3Q FY 2010	<ul style="list-style-type: none"> Conduct PDR for the Aegis BMD Block 2012.
Block 2012 Preliminary Design Review 2	R109	3Q FY 2011	<ul style="list-style-type: none"> Conduct Preliminary Design Review 2 for the Aegis BMD Block 2012.
Block 2012 Critical Design Review	R109	3Q FY 2013	<ul style="list-style-type: none"> Conduct Critical Design Review for Aegis BMD Block 2012.
SM-3 Blk IIA Development Milestones			
SM-3 Blk IIA System Concept Review	0402	4Q FY 2006	<ul style="list-style-type: none"> Conducted SM-3 Blk IIA SCR.
SM-3 Blk IIA System Requirements Review	0402	4Q FY 2007	<ul style="list-style-type: none"> Conduct SM-3 Blk IIA SRR.
SM-3 Blk IIA System Design Review	0402	3Q FY 2008	<ul style="list-style-type: none"> Conduct SDR for the SM-3 Blk IIA missile configurations.
SM-3 Blk II Preliminary Design Review	0402	3Q FY 2009	<ul style="list-style-type: none"> Conduct PDR for the SM-3 Blk II missile
SM-3 Blk IIA System Design Review 2	0402	2Q FY 2010	<ul style="list-style-type: none"> Conduct SDR for the SM-3 Blk IIA missile to be fielded in Block 2012.
SM-3 Blk IIA Critical Design Review	0402	3Q FY 2010	<ul style="list-style-type: none"> Conduct the Critical Design Review (CDR) for the SM-3 Blk IIA missile.
SM-3 Blk IIA Preliminary Design Review	0402	3Q FY 2011	<ul style="list-style-type: none"> Conduct PDR for the SM-3 Blk IIA missile.
Other			
Milestones			
Requirements Analysis	R218	1Q FY 2008 - 2Q FY 2009	
Missile Down Select	R218	3Q FY 2009 - 2Q FY 2010	<ul style="list-style-type: none"> Initiate Missile Down Select Process.
BMDs Certification			
3.6.1 Certification	0918	3Q FY 2009	<ul style="list-style-type: none"> Certify BMD 3.6.1 for installation and operational use on Aegis BMD cruisers and destroyers.

UNCLASSIFIED

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B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007 PB)	915,664	1,031,874	951,560	980,498
Current President's Budget (FY 2008 PB)	893,040	1,122,669	1,059,103	1,129,425
Total Adjustments	-22,624	90,795	107,543	148,927
Congressional Specific Program Adjustments	0	95,560	0	0
Congressional Undistributed Adjustments	0	-4,765	0	0
Reprogrammings	-6,484	0	0	0
SBIR/STTR Transfer	-16,140	0	0	0
Adjustments to Budget Years	0	0	107,543	148,927

FY06 decrease of \$22.624 million includes the SBIR/STTR transfer and MDA reprogrammings.

FY07 increase of \$90.795 million includes a congressional specific program increase of \$95.560 million and a portion of the MDA congressional undistributed reduction.

FY08 increase of \$80.043 million and FY09 increase of \$148.927 million are the results of MDA programmatic changes.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603892C Ballistic Missile Defense Aegis				

COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0709 AEGIS Block 2004 Test Bed	136,257	23,043	0	0	0	0	0	0
RDT&E Articles Qty	5	0	0	0	0	0	0	0

Note: RDT&E Articles for FY06: Four (4) SM-3 missiles, and the installation of BMD 3.0E on one (1) DDG.

A. Mission Description and Budget Item Justification

Aegis BMD Block 2004 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions: Provide sea-based surveillance, tracking, and engagement capabilities in international waters.
- In all phases of ballistic missile flight: Long Range Surveillance and Track (LRS&T) capability against missile threats in all flight stages; engagement capability against missile threats in the midcourse flight stage
- Against all ranges:
 - Against long-range ballistic missiles by providing surveillance and tracking support as part of the Block 2004 Limited Defensive Capability (LDC).
 - Against short and medium range ballistic missiles by providing engagement support as part of Block 2004.

Aegis BMD supports LDC by providing LRS&T data to other elements of the BMDS. Aegis BMD will further improve both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon autonomous data and upon data received via the Tactical Digital Information Link Joint (TADIL-J) network. The Aegis BMD Block 2004 program:

- Defeats unitary and simple separating threats (Short Range Ballistic Missiles (SRBMs) and Medium Range Ballistic Missiles (MRBMs)) with Aegis BMD configured cruisers and destroyers using SM-3 Blk I or IA guided missiles.
- Provides Long Range Ballistic Missile (LRBM) surveillance and track data through the BMDS to the GMD element to cue and initiate fire control Weapons Task Plans.
- Provides Aegis BMD surveillance and track data to the BMDS to support Combatant Commander situational awareness.
- Expands the engagement battle space by using remote (Aegis AN/SPY-1) sensor data delivered via the TADIL-J network.
- Supplies Aegis BMD operational data to the BMDS C2BMC Element to support Combatant Commander situational awareness.
- Provides an operational, engagement-capable system.

Aegis BMD Block 2004 consists of three incremental capabilities:

- LRS&T (BMD 3.0E computer program) support as part of LDC;
- A preliminary engagement capability (BMD 3.0 with SM-3 Blk I) for test bed operations and for emergency use, if required; and

UNCLASSIFIED

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--	------------------------------

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- An operationally certified BMD capability that combines the engagement capability with the LRS&T capability (BMD 3.6 with SM-3 Blk I and IA). The final Block 2004 is fully compliant with the Element Capability Specification.

In collaboration with the MDA Systems Engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD supports an autonomous engagement against SRBMs and MRBMs without requiring external cueing. Aegis BMD Block 2004 supports SM-3 Engage on AN/SPY-1, SM-3 Launch on Remote (AN/SPY-1), GBI Engage on AN/SPY-1, and GBI Launch on AN/SPY-1.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Weapon System Engineering	79,712	8,650	0	0
RDT&E Articles (Quantity)	1	0	0	0

In Block 2004, the Aegis BMD Weapon System Engineering group developed BMD 3.0E to provide LRS&T capability to the BMDS; BMD 3.0 to support testbed and emergency engagement operations; and BMD 3.6 to provide an operationally-certified system. Aegis BMD met the President's LDC objectives by deploying BMD 3.0E in Block 2004.

FY06 Accomplishments:

RDT&E Articles: Aegis DDG configured with BMD 3.0E (1)

Aegis BMD Weapon System:

- For LRS&T:
 - Installed BMD 3.0E (LRS&T) on one (1) Aegis Destroyer
 - Monitored the operational performance of the BMD 3.0E LRS&T Aegis destroyers.
 - Performed computer program maintenance modifications to BMD 3.0E to implement lessons learned from FTM 04-2 (FM-8) and GT-189.
 - Participated in Aegis BMD flight missions. .
- For engagement capability:
 - Provided BMD 3.0 support on operational Aegis cruisers for testbed operations and emergency deployment.
 - Completed development of BMD 3.6 Weapon System.
 - Completed multi-element integration and testing of BMD 3.6.
 - Completed BMD 3.6 Weapon System certification following the BMD 3.6 Engineering Assessment. (Actual installs occur in CY06, and are captured under Block 2006, Project 0809).
 - Temporarily installed BMD 3.6 test load on an Aegis cruiser to support an engagement flight mission as part of the certification of BMD 3.6.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
--	------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Conducted waterfront integration testing of BMD 3.6.
- Received approval for fielding BMD 3.6 at the SSSTRP and WSESRB reviews.
- Participated in Aegis BMD flight missions and other BMDS test events.
- Completed integration of CDLMS v. 3.4 into BMD 3.6 to accomplish multiple satellite data paths (UHF, SHF, and EHF) for improved BMDS interoperability.
- Participated in the improvement of BMDS C2BMC interface control specifications requirements with other BMDS elements.

Vertical Launching System (VLS):

- For engagement capability:
 - Provided BMD 3.0 support on operational Aegis cruisers for testbed operations and emergency deployment.
 - Supported Mk 41 VLS Phase I computer program and equipment during the transition to Mk 41 VLS Phase II implementation.
 - Tested the Mk 41 VLS Phase II system in ground tests.
 - Fielded the Mk 41 VLS Phase II to support SM-3 Blk IA missile deployments and implement the ``any missile, any cell`` multi-mission capability.

FY07 Planned Program:

- Perform post-flight test analyses for FTM-10 and FTM-11.
- Perform pre-mission analysis and work-up support for FTM-11 fourth objective.

	FY 2006	FY 2007	FY 2008	FY 2009
SM-3 Missile	46,545	14,393	0	0
RDT&E Articles (Quantity)	4	0	0	0

Aegis BMD Block 2004 provides the SM-3 Blk I missile that can be used for emergency activation; completed the design efforts of the SM-3 Blk IA, and completes component and section level testing of the SM-3 Blk IA, and completed initial non-recurring engineering preparation for rate manufacturing of SM-3 components at various manufacturing facilities.

FY06 Accomplishments/Planned Program:

RDT&E Articles: SM-3 Blk I Missiles (4)

- Participated in Flight Test Mission (FTM) 04-2 (FM-8) with one (1) SM-3 Blk I missile.
 - Completed pre-flight analysis to verify mission scenarios and to predict flight performance.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
<ul style="list-style-type: none">○ Prepared and completed missile delivery package for the Mission Control Panel reviews.○ Performed post-flight analysis to validate high fidelity models and simulations.○ Conducted post-flight analysis to support Mission Data Reviews (MDRs).● Completed SM-3 Value Engineering Change Proposal (VECP) implementation efforts to ensure service life requirement compliance.● Completed SM-3 Blk IA Hazard Assessment and Safety compliance tests.● Completed Third Stage Rocket Motor obsolete material replacement design verification testing and qualification of the Blk IA design.● Completed SM-3 Blk IA sustain DACS design qualification tests.● Conducted SDACS pulse capability engineering, design verification and qualification tests (safety and environmental).● Completed SM-3 Blk IA design verification tests (i.e., Live Battery, Battery Qualification, EMI etc) to ensure design requirement compliance and margin assessment.● Completed SM-3 Blk IA HERO test.● Completed test equipment modifications and facility upgrades to expand missile manufacturing rate.● Monitored All-Up-Round obsolete material replacement effort.● Completed assembly and delivery of four (4) SM-3 Blk I missiles.● Completed initial non-recurring engineering preparation for rate manufacturing of SM-3 components in Tucson, AZ; Elkton, MD; Canoga Park, CA; Tempe, AZ; and Camden, AZ.● Participated in Flight Test Mission FTM-10 with one (1) SM-3 Blk IA missile.● Completed pre-flight analysis to verify mission scenarios and to predict flight performance.● Prepared and completed missile delivery package for the Mission Control Panel Reviews.● Performed post-flight analysis to validate high fidelity models and simulation.● Conducted post-flight analysis to support Mission Data Reviews (MDRs). <p>FY07 Accomplishments:</p> <ul style="list-style-type: none">● Continue to monitor performance of SM-3 Blk IA.● Monitor obsolete material replacement effort.● Development activities for the next spiral upgrade are identified in Block 2006.		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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	FY 2006	FY 2007	FY 2008	FY 2009
Fleet Intro/Operations & Support	10,000	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

This effort provides funding for operator and maintenance training, engineering support, and logistics support and maintenance of Aegis BMD fielded assets.

FY06 Accomplishments:

- Provided In-Service Engineering support to Aegis BMD: Weapon System, SM-3, and Vertical Launching System.
- 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: Weapon System, SM-3, and Vertical Launching System.
- Responded to Fleet issues.

C. Other Program Funding Summary

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
I. Product Development Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Engineering										
AWS	SS/CPIF	Lockheed Martin/NJ	388,005	6,000	1Q	0	N/A	0	N/A	394,005
AWS	FFRDC	MIT/LL/MA	5,725	0	N/A	0	N/A	0	N/A	5,725
AWS	SS/CPFF	JHU/APL/MD	8,024	400	N/A	0	N/A	0	N/A	8,424
AWS	MIPR	NSWC/DD/VA	37,936	750	N/A	0	N/A	0	N/A	38,686
AWS	MIPR	MITRE/VA	1,400	0	N/A	0	N/A	0	N/A	1,400
AWS	MIPR	NSWC/PHD/CA	13,824	0	N/A	0	N/A	0	N/A	13,824
AWS		MDA	16,763	0	N/A	0	N/A	0	N/A	16,763
AWS	Various	VARIOUS	19,791	1,500	N/A	0	N/A	0	N/A	21,291
AWS	MIPR	NAVSEA/VA	2,000	0	N/A	0	N/A	0	N/A	2,000
SM-3 Missile										
MISSILE	SS/CPIF	RAYTHEON/AZ /AZ	740,999	4,381	1/2Q	0	N/A	0	N/A	745,380
MISSILE	SS/CPIF	JHU/APL/MD/ MD	25,693	1,200	N/A	0	N/A	0	N/A	26,893
MISSILE	FFRDC	MIT/LL/MA	1,805	0	N/A	0	N/A	0	N/A	1,805
MISSILE	MIPR	NSWC/DD/VA	19,626	1,000	N/A	0	N/A	0	N/A	20,626
MISSILE	MIPR	NSWC/PHD/CA/ CA	11,371	1,500	1/2Q	0	N/A	0	N/A	12,871
MISSILE	MIPR	WSMR/NM/NM	2,407	0	N/A	0	N/A	0	N/A	2,407
MISSILE	MIPR	NSWC/CD/CA/ MD	4,618	1,435	N/A	0	N/A	0	N/A	6,053
MISSILE	MIPR	NSWC/IH/MD/ MD	3,653	1,526	N/A	0	N/A	0	N/A	5,179
MISSILE	MIPR	NAWC/CL/CA	2,144	500	N/A	0	N/A	0	N/A	2,644
MISSILE		MDA/VA	24,676	1,232	N/A	0	N/A	0	N/A	25,908

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
MISSILE	Various	VARIOUS/VA/CA/NJ	8,296	1,619	1Q	0	N/A	0	N/A	9,915
MISSILE	MIPR	NAVSEA	931	0	N/A	0	N/A	0	N/A	931
MISSILE	MIPR	NSWC Corona	627	0	N/A	0	N/A	0	N/A	627
Subtotal Product Development			1,340,314	23,043		0		0		1,363,357

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Engineering										
	SS/CPFF	JHU/APL/MD	8,326	0	N/A	0	N/A	0	N/A	8,326
	SS/CPAF	Lockheed Martin/NJ	10,500	0	N/A	0	N/A	0	N/A	10,500
	MIPR	NSWC/DD/VA	15,346	0	N/A	0	N/A	0	N/A	15,346
	MIPR	NSWC/PHD/CA	6,807	0	N/A	0	N/A	0	N/A	6,807
	MIPR	SPAWAR/CA	4,734	0	N/A	0	N/A	0	N/A	4,734
		MDA	2,489	0	N/A	0	N/A	0	N/A	2,489
	MIPR	NAVSEA/DC	3,933	0	N/A	0	N/A	0	N/A	3,933
	MIPR	SupShip Pascagoula/MS	4,635	0	N/A	0	N/A	0	N/A	4,635
	MIPR	SupShip Bath/ME	1,965	0	N/A	0	N/A	0	N/A	1,965
	MIPR	VARIOUS/SSES Philadelphia/ VARIOUS	457	0	N/A	0	N/A	0	N/A	457

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Fleet Intro/Operations & Support										
	MIPR	NSWC/DD/VA	695	0	1Q	0	N/A	0	N/A	695
AWS	MIPR	NSWC/PHD/CA	3,381	0	1Q	0	N/A	0	N/A	3,381
AWS		Lockheed Martin/NJ	3,003	0	1Q	0	N/A	0	N/A	3,003
		MIT/MA	0	0	1/2Q	0	N/A	0	N/A	
		JHU/APL/MD	250	0	1/2Q	0	N/A	0	N/A	250
	Various	Various	336	0	1Q	0	N/A	0	N/A	336
	MIPR	NSWC Corona/ CA	860	0	N/A	0	N/A	0	N/A	860
	MIPR	CSCS (ATRC)/ VA	1,475	0	N/A	0	N/A	0	N/A	1,475
Subtotal Support Costs			69,192	0		0		0		69,192

Remarks

III. Test and Evaluation Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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IV. Management Services Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Engineering										
		NAVSEA/DC	26,435	0	N/A	0	N/A	0	N/A	26,435
	SS/CPFF	JHU/API/MD	2,834	0	N/A	0	N/A	0	N/A	2,834
	MIPR	NSWC/DD/VA	2,398	0	N/A	0	N/A	0	N/A	2,398
	C/CPFF	Anteon/VA	46,749	0	N/A	0	N/A	0	N/A	46,749
	SS/CPFF	Paradigm/VA	4,175	0	N/A	0	N/A	0	N/A	4,175
	SS/CPAF	Lockheed Martin/NJ	1,700	0	N/A	0	N/A	0	N/A	1,700
	SS/CPAF	Raytheon/AZ	2,000	0	N/A	0	N/A	0	N/A	2,000
		MDA	14,922	0	N/A	0	N/A	0	N/A	14,922
	Various	Various/Various	8,517	0	N/A	0	N/A	0	N/A	8,517
		MDA (Salaries)	1,763	0	N/A	0	N/A	0	N/A	1,763
Subtotal Management Services			111,493	0		0		0		111,493

Remarks

Project Total Cost			1,520,999	23,043		0		0		1,544,042
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Testing Milestones								
SM-3 Blk IA HERO Test	1Q							
BMDS Testing								
FT-04-03	3Q							
FT-04-4	4Q							
Target of Opportunities								
GT-189	4Q							
SERV-2	4Q							
Development Milestones								
BMD 3.6 Engineering Assessment	2Q							
SM-3 Blk IA SDACS CDR	1Q							
BMD 3.6 Weapon System Certification	4Q							
Flight Tests								
FTM 04-2 (FM-8)	1Q							
FTM-10	3Q							
Fielding Deliveries/Ships								
Engagement Cruisers (BMD 3.0)	1Q							
Long Range Surveillance & Tracking DDGs (BMD 3.0E)	1Q							
Fielding Deliveries/Missiles								
Block I Missiles	1Q							

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0809 AEGIS BMD Block 2006	448,876	395,283	75,400	42,600	0	0	0	0
RDT&E Articles Qty	12	29	6	0	0	0	0	0
<p><i>Note: RDT&E Articles: FY06 - One (1) SM-3 missile, two (2) ARAVs, one (1) target, installation of BMD 3.0E on three (3) DDGs, installation of BMD 3.0 on one (1) CG, delivery of the BMD 3.6 computer program, installation of BMD 3.6 on one (1) DDG, installation of BMD 3.6 on two (2) CGs. FY07 - Thirteen (13) SM-3 missiles, five (5) ARAVs, two (2) targets, installation of BMD 3.0E on two (2) DDGs, installation of BMD 3.6 on one (1) DDG (LRS&T only), installation of BMD 3.6 on five (5) DDGs, installation of BMD 3.6 on one (1) CG. FY08 - Five (5) SM-3 missiles, installation of BMD 3.6 on one (1) DDG.</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>Aegis BMD Block 2006 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:</p> <ul style="list-style-type: none"> • In all regions: provide sea-based surveillance, tracking, and engagement capabilities. • In all phases of ballistic missile flight: Long Range Surveillance and Track (LRS&T) capability against missile threats of all ranges; engagement capability against Short Range Ballistic Missile (SRBM) to Medium Range Ballistic Missile (MRBM)-class missile threats • Develop engagement capability against Intermediate range Ballistic Missile (IRBM)-class targets. • Against all ranges: <ul style="list-style-type: none"> ○ Enhanced LRS&T capability against Ballistic Missile threats of all ranges through Aegis BMD Signal Processor (BSP) improvements. <p>Aegis BMD supported LDC by providing Long Range Surveillance and Track (LRS&T) data to other elements of the BMDS. Aegis BMD improved both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon data received via the Tactical Digital Information Link Joint (TADIL-J) network from other Aegis ships in Block 2004. Through development and testing of the Aegis BMD Signal Processor (BSP) in Block 2006, Aegis BMD will provide significant improvements in discrimination capability and performance against more diverse and longer range threats.</p> <p>The Aegis BMD Block 2006 Weapon System will continue the evolutionary spiral development of the previous baseline by performing the initial integration of the BSP into the Aegis BMD Weapon System. This will improve discrimination and tracking capability against more robust threats for BMDS engagements. Weapon System LRS&T upgrades using BSP will be delivered and will go through an Engineering Evaluation at the Combat System Engineering Development Site (CSEDS) in Block 2006.</p> <p>Weapon System Development will continue to evolve into the BMD 4.0 and 4.0.1 configurations; that are to be delivered during Block 2008.</p>								

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Block 2006 missile efforts focus on testing of the SM-3 Blk IA missile with the BMD 3.6 Weapon System and the continued deployment of SM-3 Blk IA missiles. Ongoing missile development is listed and described under Block 2008, project 0909.

Aegis BMD Block 2006 will:

- Defeat unitary and more complex SRBM and MRBM threats with Aegis BMD configured cruisers, destroyers and Standard Missile-3 (SM-3) Blk I and IA guided missiles.
- Develop a limited IRBM capability.
- Complete development and engineering assessment of BMD 4.0E - testbed capability that provides improved ballistic missile threat tracking, discrimination, and object classification via the BSP Engineering Development Model (EDM).
- Continue installations of the BMD 3.0E surveillance and tracking capability and the BMD 3.6 engagement capability on additional Aegis destroyers, and deliver 22 SM-3 Blk IA missiles.

In collaboration with the MDA Systems Engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD supports an autonomous engagement against SRBMs and MRBMs without external cueing. Aegis BMD also supports an engagement against SRBMs and MRBMs using data from other BMDS elements and external sensors.

Aegis BMD Block 2006 will support SM-3 Engage on/Launch on AN/SPY-1, SM-3 Launch on FBX-T, GBI Engage on AN/SPY-1 Mod. 1, and GBI Launch on AN/SPY-1 Mod 1.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Weapons System Engineering	156,137	106,965	3,700	0
RDT&E Articles (Quantity)	8	9	1	0

In Block 2006, the Aegis BMD Weapon System Engineering group will test BMD 4.0E to provide LRS&T capability with the BMDS at CSEDS.

FY06 Accomplishments:

RDT&E Articles: BMD 3.6 Computer Program (1), BMD 3.0 Aegis Cruiser (1), BMD 3.6 Aegis Cruisers (2), BMD 3.0E Surveillance and Tracking Aegis Destroyers (3), BMD 3.6 Aegis Destroyer (1)

- Installed BMD 3.0E on three (3) Aegis Destroyers. (Actual shipsets for all BMD 3.0E destroyers will be completed in FY06. Remaining ship installations are based on projected ship availability).

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
<ul style="list-style-type: none"> • Installed BMD 3.0 on one (1) Aegis Cruiser • Installed BMD 3.6 on two (2) Aegis Cruisers and one (1) Aegis Destroyer. • Commenced baseline consolidation effort: <ul style="list-style-type: none"> ○ Designed documentation and system modeling analysis for the Aegis BMD Weapon System. • Improved ballistic missile tracking, characterization, discrimination, feature extraction, object classification, and kill assessment as a part of the development, to include: <ul style="list-style-type: none"> ○ Real-time feature extraction capability and classification algorithm development. ○ At-sea testing of the BSP Advanced Development Model (medium-band tracking, and medium-band and wide-band discrimination) • Continued development of the computer program upgrade for testing and Engineering evaluation in CY07. • Commenced studies to improve Lethal Object Designation in a clutter environment. • Continued development of enhanced C2BMC interoperability with the BMDS to include: <ul style="list-style-type: none"> ○ Successful demonstration of space track exchange with land-based operational sites using EHF. ○ Demonstrated ability to receive space cues generated from developmental advanced track data fusion algorithms. <p>FY07 Planned Program: RDT&E Articles: BMD 3.0E Aegis LRS&T Destroyers (2), BMD 3.6 Aegis Cruiser (1), BMD 3.6 LRS&T Destroyer (1), BMD 3.6 Aegis Engagement Destroyers (5)</p> <ul style="list-style-type: none"> • Install BMD 3.0E capability on two (2) Aegis destroyers. (Shipsets for final BMD 3.0E destroyer will be available at this time. Projected installation dates for remaining destroyer is based on ship availability). • Install BMD 3.6 on one (1) Aegis Cruiser. • Install BMD 3.6 (engagement capability) on five (5) Aegis destroyers. • Install BMD 3.6 (LRS&T capability) on one (1) Aegis destroyer. • Continue improvement to ballistic missile tracking, characterization, discrimination, feature extraction, object classification, and kill assessment as a part of the Weapon System development, to include: <ul style="list-style-type: none"> ○ Real-time feature extraction capability and classification algorithm development. ○ At-sea testing of the BSP Advanced Development Model (medium-band tracking, and medium-band and wide-band discrimination) • Install BSP EDM at CSEDS. • Complete development and testing of the computer program upgrade culminating with an Engineering Evaluation (EE) in CY 2007. • Continue studies to improve Lethal Object Designation in a cluttered environment. 		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Continue at Sea Testing of BMD 3.6.

FY08 Planned Program:

RDT&E Articles: BMD 3.6 (engagement capability) on one (1) Aegis destroyers.

- Complete BMD Engineering Evaluation and begin Element Test and Evaluation (ETE) and Multi-Element Integration Testing (MEIT). Leading to BMD 4.0 Engineering Assessment.
- Monitor the performance of BMD Weapon System for potential improvements and corrections to future Weapon System development.
- Install BMD 3.6 engagement capability on one Aegis destroyer.

	FY 2006	FY 2007	FY 2008	FY 2009
SM-3 Missile	186,137	136,608	27,900	0
RDT&E Articles (Quantity)	1	13	5	0

During Block 2006 the SM-3 Blk IA missiles will be tested, monitored for improvements, and delivered for deployment.

FY06 Accomplishments:

RDT&E Articles: SM-3 Block IA Pathfinder (1).

- Participated in FTM-10 (first SM-3 Blk IA test, using the Blk IA Pathfinder round)
 - Completed pre-flight analysis to verify scenarios and performance assessment.
 - Prepared and completed missile delivery package for Mission Control Panel reviews.
 - Performed post-flight analysis to validate high-fidelity simulations.
 - Conducted post-flight analysis to support Mission Data Reviews (MDRs).
 - Performed analysis of SM-3 Blk IA Hardware/Software based on flight results.
- Reviewed data analysis and requirements to update the missile, as required, to pace threat and weapon system changes.
- Completed Block 2006 Element Capability Specifications (ECS) requirements analysis for flow down to missile top-level requirements.
- Completed Block 2006 capability performance assessment studies for SM-3 Blk IA.
- Continued to review manufacturing practices to lower unit cost of SM-3 Blk IA via improved manufacturing processes.
- Completed assembly and delivered one (1) SM-3 Blk IA Pathfinder Flight Test Round.
- Continued component level assembly build-up for succeeding SM-3 Blk IA missiles.
- Continued material engineering to monitor parts obsolescence.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
FY07 Planned Program: RDT&E Articles: SM-3 Blk IA Missiles (13) <ul style="list-style-type: none">• Continue assembly and delivery of SM-3 Blk IA missiles.<ul style="list-style-type: none">○ Deliver one (1) SM-3 Blk IA Pathfinder test round○ Deliver twelve (12) SM-3 Blk IA missiles• Continue material engineering to monitor parts obsolescence.• Participate in FTM-11 and FTM-12<ul style="list-style-type: none">○ Complete pre-flight analysis to verify scenarios and performance assessment.○ Prepare and complete missile delivery package for Mission Control Panel Reviews.○ Perform post-flight analysis to validate high-fidelity simulations.○ Conduct post-flight analysis to support Mission Data Reviews (MDRs).○ Perform analysis of SM-3 Blk IA Hardware/Software based on flight results.○ Expend SM-3 Blk IA 2nd Pathfinder in ground test support for TSRM nozzle redesign and SDACs pulse indentation ground test.		
FY08 Planned Program: RDT&E Articles: SM-3 Blk IA missiles (5) <ul style="list-style-type: none">• Continue assembly and delivery of SM-3 Blk IA missiles.<ul style="list-style-type: none">○ Deliver five (5) SM-3 Blk IA missiles.• Continue material engineering and monitor parts obsolescence.• Participate in FTM-13 (2 rounds) and FTM-14 (1 round).<ul style="list-style-type: none">○ Complete pre-flight analysis to verify scenarios and performance assessment.○ Prepare and complete missile delivery package for Mission Control Panel Reviews.○ Perform post-flight analysis to validate high-fidelity simulations.○ Conduct post-flight analysis to support Mission Data Reviews (MDRs).○ Perform analysis of SM-3 Blk IA Hardware/Software based on flight results.		

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2007	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLATURE		
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		0603892C Ballistic Missile Defense Aegis		
	FY 2006	FY 2007	FY 2008	FY 2009
System Test & Evaluation	77,300	76,360	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>This effort provides funding for Aegis BMD test and evaluation Block 2006 flight test missions, as well as other system-wide BMDS tests to support the development of the BMDS.</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted STELLAR PREDATOR campaign, consisting of a Ballistic Missile Tracking Exercise, FTM-10, and BMD 3.6 Multi-Mission Operations: <ul style="list-style-type: none"> ○ Conducted an ARAV-A simulated engagement to verify BMD 3.6 capability. ○ Conducted FTM-10 flight test to verify BMD 3.6 engagement capability with an intercept of a Group B (MRBM) target using an SM-3 Blk IA missile. ○ Conducted a simulated, near-simultaneous engagement of a low exo-atmospheric ARAV-A and a BQM-74 aerial target to assess BMD 3.6 multiple simultaneous engagement capability in a multi-warfare environment. ○ Conducted BMD 3.6 Certification Test with a live engagement of two BQM-74 targets using two SM-2 Blk IIIA missiles. • Continued to test interoperability with other BMDS elements. • Participated in BMDS tests to include FTC-2 a/b, SERV-3, and Glory Trip. • Continued test planning for FTM-11, and began test planning for FTM-12 and FTM-13. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Conduct campaign consisting of a Ballistic Missile Tracking Exercise and FTM-11 Multiple Simultaneous Engagements: <ul style="list-style-type: none"> ○ Complete pre-flight analysis to verify mission scenarios and to predict flight performance. ○ Prepare and complete missile delivery package for the Mission Control Panel Reviews. ○ Conduct an ARAV-B simulated engagement to verify BMD 3.6 capability. ○ Conduct FTM-11 flight test to verify BMD 3.6 engagement capability with a near simultaneous multiple engagement and intercept of one low exo-atmospheric Group A (SRBM) target using an SM-3 Blk IA missile, and a BQM-74 aerial target using an SM-2 Blk IIIA missile. (Conducted 1Q FY07) • Conduct campaign consisting of a Ballistic Missile Tracking Exercise and FTM-12: <ul style="list-style-type: none"> ○ Complete pre-flight analysis to verify mission scenarios and to predict flight performance. 				

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Prepare and complete missile delivery package for the Mission Control Panel Reviews.
- Conduct a BMD 3.6 simulated engagement and intercept of two (2) near simultaneous ARAV-A SRBM targets with two (2) simulated SM-3 Blk IA missiles.
- Conduct FTM-12 flight test to verify BMD 3.6 engagement capability with an intercept of a Group B (MRBM) target with an Integrated Reactive Lethality Payload (IRLP) using an SM-3 Blk IA missile.
- Continue to test interoperability with other BMDS elements.
- Participate in BMDS test to include FTX-02, FTX-03, GT-195, GT-198, FTG-4, FTG-5, FTT-7, and FTT-8 missions.
- Begin test planning for FTM-13: prepare target, develop models and simulations, and ready the range for a test.
- Begin test planning for FTM-14; prepare target, develop models and simulations, and ready the range for test.
- Conduct critical experiments using the MK-99 Doppler Data Collection System or similar equipment as a risk mitigation for Block 2008 implementation.

	FY 2006	FY 2007	FY 2008	FY 2009
Block 2006 Targets	17,207	39,797	0	0
RDT&E Articles (Quantity)	3	7	0	0

This effort provides the Missile Defense Agency with ballistic missile target hardware, target range support, logistics support, target integration, and associated launch services to support Aegis BMD flight tests during Block 06, as well as other system wide tests to support the development of the Ballistic Missile Defense System.

FY 2006 Accomplishments:

RDT&E Articles: 1 Target, 2 ARAVs

- Modified FTM 04-3 MBRV-2 to ballast only (no payload) and modified FTM 04-3 MRT launch vehicle dynamics capability to reduce booster chuff in support of FTM-10.
- Successful MRT presentation in support of FTM-10.
- Initiated design, manufacture and delivery of one (1) Modified Ballistic Re-entry Vehicles (MBRV-2) and Integrated Reactive Lethality Payload insert in support of FTM-12
- Initiated design, manufacture and delivery of a MRT launch vehicle in support of FTM-12.
- Successful TTV presentation and post flight analysis in support of FTM-11.
- Successful ARAV presentation and post flight analysis in support of FTM-11 TX

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis		
<p>FY 2007 Planned Program: RDT&E Articles: 2 Targets, 5 ARAVS</p> <ul style="list-style-type: none"> • Initiate design, manufacture and delivery of one (1) Modified Ballistic Re-entry Vehicles (MBRV-2) and Payload insert in support of FTM-14 • Initiate design, manufacture and delivery of a LV-2 launch vehicle in support of FTM-14. • MRT presentation in support of FTM-12 • Two ARAV presentations and post flight analysis in support of FTM-12 TX • Two ARAV presentations and post flight analysis in support of FTM-13 				
	FY 2006	FY 2007	FY 2008	FY 2009
SE&I and BMDS Integration	3,495	5,000	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>This effort provides funding to work in collaboration with the BMDS System Engineer to develop requirements flowdown for Aegis BMD Block 2006; and participate in definition of appropriate Engagement Sequence Groups to best utilize Aegis BMD capability in the overall BMDS.</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> • Completed Block 2006 Element Capability Specifications (ECS) requirements analysis for flow down to Aegis BMD top-level requirements and contribution to the BMDS mission. • Completed Block 2006 capability performance assessment studies. • Participated in BMDS ESG planning and monitoring. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Conduct Block 2006 capability integration studies. • Participate in BMDS ESG planning and monitoring. 				
	FY 2006	FY 2007	FY 2008	FY 2009
Aegis BMD Fire Control (BMC3)	8,600	10,553	0	0
RDT&E Articles (Quantity)	0	0	0	0
<p>This effort provides funding for BMC3 improvements, including establishment of alternate BMD data paths and enhancements, supported increased interoperability with other BMDS elements.</p>				

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis		
<p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> • Commenced Block 2006 Aegis BMD Weapon System integration and test. • Began incorporation of CDLMS upgrades, including: <ul style="list-style-type: none"> ○ Interoperability improvements to support Long Range Surveillance and Track, enhanced Launch on TADIL, and engagement coordination missions • Conducted definition, planning and initial implementation to upgrade the Aegis BMD system in coordination with other BMDS elements (engagement coordination). • Conducted definition planning and initial implementation for Aegis BMD planning exchange with Joint Defense Planner via Global Command and Control System - Maritime. • Conducted definition, planning and initial implementation of Aegis BMD Link certification requirements. • Initiated analyses supporting the migration of Aegis BMD Fire Control (BMC3) architecture into future BMDS networks. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Complete CDLMS upgrades to incorporate: <ul style="list-style-type: none"> ○ Enhanced Launch on TADIL-J design and development to increase the battle space. • Complete implementation of Aegis BMD planning exchange with Joint Defense Planner via Global Command and Control System - Maritime. • Complete definition, planning, and initial implementation of Aegis BMD Link certification requirements. • Continue analyses supporting the migration of Aegis BMD Fire Control (BMC3) architecture into future BMDS networks. 				
	FY 2006	FY 2007	FY 2008	FY 2009
Operations & Support/ Fleet Introduction	0	20,000	43,800	42,600
RDT&E Articles (Quantity)	0	0	0	0
<p>This effort provides funding for operator and maintenance training, engineering support, and logistics support and maintenance of Aegis BMD fielded assets.</p> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Provide In-service Engineering support to Aegis BMD: Weapon System, SM-3, and Vertical Launching System. • Provide operational and maintenance training for Aegis BMD ship crews. 				

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD: Weapon System, SM-3, and Vertical Launching System.
- 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.

FY08 Planned Program:

- Provide In-service Engineering support to Aegis BMD: Weapon System, SM-3, and Vertical Launching System.
- Provide operational and maintenance training for Aegis BMD ship crews.
- Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD: Weapon System, SM-3, and Vertical Launching System.
- 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.

FY09 Planned Program:

- Provide In-service Engineering support to Aegis BMD: Weapon System, SM-3, and Vertical Launching System.
- Provide operational and maintenance training for Aegis BMD ship crews.
- Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD: Weapon System, SM-3, and Vertical Launching System.
- 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.

C. Other Program Funding Summary

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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 has awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and the Aegis BMD Weapon System, respectively.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
I. Product Development Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapons System Engineering										
	SS/CPAF	Lockheed Martin/NJ	44,330	335	1Q	1,125	1Q	0	N/A	45,790
	CPFF	JHU/APL/MD	712	0	4Q	0	N/A	0	N/A	712
	MIPR	NSWC/DD/VA	878	0	1Q	1,850	N/A	0	N/A	2,728
	MIPR	NSWC/PHD/CA	405	0	4Q	0	N/A	0	N/A	405
	MIPR	SPAWAR/CA	455	0	4Q	0	N/A	0	N/A	455
	FPI	VA Sites/VA	0	0	4Q	725	N/A	0	N/A	725
SBAR	SS/CPAF	Lockheed Martin/NJ	5,150	0	N/A	0	N/A	0	N/A	5,150
Deployment	SS/CPAF	Lockheed Martin/NJ	26,520	10,838	1Q	0	N/A	0	N/A	37,358
Deployment	MIPR	NAVSEA/VA	3,030	3,300	1Q	0	N/A	0	N/A	6,330
Deployment	MIPR	NSWC/DD/VA	3,370	3,018	1Q	0	N/A	0	N/A	6,388
Deployment	MIPR	NSWC/PHD/CA	5,242	5,089	1Q	0	N/A	0	N/A	10,331
Deployment	MIPR	SPAWAR/CA	1,275	1,525	1Q	0	N/A	0	N/A	2,800
Deployment	MIPR	SUPSHIP/BATH /ME	853	2,325	1Q	0	N/A	0	N/A	3,178
Deployment	FPI	SUPSHIP/PASC/ MS	3,930	770	1Q	0	N/A	0	N/A	4,700
Deployment	Various	Various	2,175	1,898	1Q	0	N/A	0	N/A	4,073
SBAR	Various	Various	500	0	N/A	0	N/A	0	N/A	500
SM-3 Missile										
Missile	SS/CPIF	Raytheon/AZ	155,352	110,447	1Q	23,840	N/A	0	N/A	289,639
Missile	SS/CPIF	JHU/APL/MD	3,503	3,588	1Q	1,196	N/A	0	N/A	8,287
Missile	FFRDC	MIT/LL/MA	325	196	1Q	200	N/A	0	N/A	721
Missile	MIPR	NSWC/DD/VA	1,841	4,591	1Q	1,267	N/A	0	N/A	7,699
Missile	MIPR	NSWC/PHD/CA	1,224	1,493	1Q	497	N/A	0	N/A	3,214

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Missile	MIPR	NAWC/CL/CA	280	341	1Q	200	N/A	0	N/A	821
Missile	MIPR	NSWC/IH/MD	460	561	1Q	200	N/A	0	N/A	1,221
Missile	Various	Various/ MD, CA, VA	718	1,148	1Q	400	N/A	0	N/A	2,266
	MIPR	NSWC Corona/ CA	0	549	1Q	100	N/A	0	N/A	649
Block 2006 Targets										
	MIPR	MDA/VA	18,024	39,797	1Q	0	N/A	0	N/A	57,821
Subtotal Product Development			280,552	191,809		31,600		0		503,961

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapons System Engineering										
	SS/CPAF	MIT/LL/MA	3,515	1,750	1Q	0	N/A	0	N/A	5,265
	SS/MIPR	NSWC/Corona/ CA	225	88	1Q	0	N/A	0	N/A	313
	SS/CPFF	SEG/VA	2,970	1,050	2Q	0	N/A	0	N/A	4,020
	Various	VARIOUS/US	0	525	1Q	0	N/A	0	N/A	525
	MIPR	MDA/VA	11,000	11,130	1Q	0	N/A	0	N/A	22,130
SM-3 Missile										
	MIPR	NSWC/DD/VA	1,000	465	1Q	0	N/A	0	N/A	1,465
	MIPR	JHU/APL/MD	500	1,000	1Q	0	N/A	0	N/A	1,500

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/Oblg Date	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
		MIT/LL/MA	100	100	1/2Q	0	N/A	0	N/A	200
	MIPR	NSWC/CD/MD	450	459	1Q	0	N/A	0	N/A	909
	MIPR	NAVSEA/VA	669	815	1Q	0	N/A	0	N/A	1,484
	Various	Various	276	847	1/2Q	0	N/A	0	N/A	1,123
	MIPR	MDA/VA	19,439	10,008	4Q	0	N/A	0	N/A	29,447
SE&I and BMDS Integration										
	MIPR	JHU/APL/MD	260	335	1Q	0	N/A	0	N/A	595
	MIPR	NSWC Corona/CA	305	400	1Q	0	N/A	0	N/A	705
	MIPR	NSWC DD/VA	2,291	2,950	1Q	0	N/A	0	N/A	5,241
	MIPR	NSWC PHD/CA	540	700	1Q	0	N/A	0	N/A	1,240
	Various	Various	99	615	1/2Q	0	N/A	0	N/A	714
Aegis BMD Fire Control (BMC3)										
	MIPR	JHU/APL/MD	1,565	2,100	1Q	0	N/A	0	N/A	3,665
	FPI	MIT/LL/MA	663	863	1/2Q	0	N/A	0	N/A	1,526
		MITRE	548	448	1Q	0	N/A	0	N/A	996
	MIPR	NSWC PHD/CA	656	856	1Q	0	N/A	0	N/A	1,512
	MIPR	SPAWAR/CA	4,628	5,828	1Q	0	N/A	0	N/A	10,456
	Various	Various	540	458	1/2Q	0	N/A	0	N/A	998
Operations & Support/ Fleet Introduction										
Weapon System	MIPR	JHU/APL/MD	0	450	1Q	450	1Q	350	1Q	1,250
Weapon System	MIPR	CSCS (ATRC)/VA	0	1,975	1Q	1,975	1Q	1,775	1Q	5,725
Weapon System	MIPR	NSWC Corona/CA	0	1,060	1Q	1,060	1Q	860	1Q	2,980
Weapon System	MIPR	NSWC/DD/VA	0	795	1Q	795	1Q	695	1Q	2,285
Weapon System	MIPR	NSWC/PHD/CA	0	3,881	1Q	3,881	1Q	3,681	1Q	11,443

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System	Various	Various	0	839	1/2Q	839	1/2Q	639	1/2Q	2,317
Weapon System	CPAF	Lockheed Martin/NJ	0	11,000	1/2Q	11,000	1/2Q	11,000	1Q	33,000
Missile	CPAF	Raytheon/AZ	0	0	4Q	14,000	1Q	14,000	1Q	28,000
Missile	MIPR	NSWC/PHD/CA	0	0	4Q	2,500	N/A	2,500	N/A	5,000
Missile	MIPR	NSWC/DD/VA	0	0	4Q	2,500	N/A	2,500	N/A	5,000
Missile	MIPR	NSWC Corona/ CA	0	0	4Q	2,000	N/A	2,000	N/A	4,000
Missile	MIPR	NSWC IH/MD	0	0	4Q	1,000	N/A	1,000	N/A	2,000
Missile	Various	Various	0	0	4Q	1,800	1/2Q	1,600	1/2Q	3,400
Subtotal Support Costs			52,239	63,790		43,800		42,600		202,429

Remarks

III. Test and Evaluation Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
System Test & Evaluation										
Test & Eval	MIPR	PMRF/HI	6,700	13,360	1Q	0	N/A	0	N/A	20,060
Test & Eval	MIPR	SMDC/AL	3,400	2,200	1Q	0	N/A	0	N/A	5,600
Test & Eval	MIPR	NSWC/DD/VA	8,200	8,600	1Q	0	N/A	0	N/A	16,800
Test & Eval	SS/CPFF	JHU/APL/MD	13,200	12,700	1Q	0	N/A	0	N/A	25,900
Test & Eval		NAWC/WPNS	3,100	4,500	1Q	0	N/A	0	N/A	7,600
Test & Eval	MIPR	NSWC/PHD/CA	5,100	4,800	1Q	0	N/A	0	N/A	9,900
Test & Eval	MIPR	MIT/LL/MD	1,100	1,100	1Q	0	N/A	0	N/A	2,200

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Test & Eval	MIPR	AIRPAC/HI	1,100	1,400	1Q	0	N/A	0	N/A	2,500
Test & Eval	MIPR	SPAWAR/CA	2,500	2,800	1Q	0	N/A	0	N/A	5,300
Test & Eval	Various	Various	3,800	3,400	1Q	0	N/A	0	N/A	7,200
Test & Eval	MIPR	WSMR/CA	800	700	1Q	0	N/A	0	N/A	1,500
	MIPR	NSWC/Corona/CA	2,900	2,800	1Q	0	N/A	0	N/A	5,700
		Raytheon/AZ	2,800	2,500	1Q	0	N/A	0	N/A	5,300
		Lockheed Martin/NJ	15,700	15,500	1Q	0	N/A	0	N/A	31,200
		MDA/VA	9,000	0	1Q	0	N/A	0	N/A	9,000
Subtotal Test and Evaluation			79,400	76,360		0		0		155,760

Remarks

IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapons System Engineering										
	MIPR	NAVSEA	13,867	13,867	1Q	0	N/A	0	N/A	27,734
	C/CPFF	Anteon/VA	28,266	34,800	1Q	0	N/A	0	N/A	63,066
	C/CPFF	Paradigm/VA	1,638	1,750	1Q	0	N/A	0	N/A	3,388
	SS/CPFF	JHU/APL/MD	1,330	2,519	1Q	0	N/A	0	N/A	3,849
	SS/CPAF	Raytheon/AZ	1,000	1,542	1Q	0	N/A	0	N/A	2,542
	SS/CPAF	Lockheed Martin/NJ	1,000	1,500	1Q	0	N/A	0	N/A	2,500

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
	MIPR	NSWC/DD/VA	1,285	2,851	1Q	0	N/A	0	N/A	4,136
	Various	Various	2,048	2,495	1/2Q	0	N/A	0	N/A	4,543
	CPFF	Gryphon/ MD	0	2,000	1Q	0	N/A	0	N/A	2,000
Subtotal Management Services			50,434	63,324		0		0		113,758
Remarks										
Project Total Cost			462,625	395,283		75,400		42,600		975,908
Remarks										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Manufacturing Processes and Advanced Materials																																
BSP Engineering Development Model (CSEDS)								Δ																								
Development Milestones																																
Block 2006 System Design Review		▲																														
BMD 4.0.1 Engineering Capability Specification				▲																												
BMD 4.0.1 Preliminary Design Review 1								▲																								
BMD 4.0 Critical Design Review												Δ																				
BMD 4.0.1 System Design Review												Δ																				
BMD 4.0E Engineering Assessment																Δ																
Flight Tests																																
FTM-10				▲																												
FTM-11								▲																								
FTM-11 4th Objective												Δ																				
FTM-12												Δ																				

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲	Complete Activity	▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Fielding Deliveries/Ships																																				
Long Range Surveillance & Tracking DDGs (BMD 3.0E)																																				
Engagement Cruisers (BMD 3.0)																																				
Engagement Cruisers (BMD 3.6)																																				
Engagement DDGs (BMD 3.6)																																				
Fielding Deliveries/Missiles																																				
Block IA Missiles																																				

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲	Complete Activity	▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Manufacturing Processes and Advanced Materials								
BSP Engineering Development Model (CSEDS)		3Q						
Development Milestones								
Block 2006 System Design Review	2Q							
BMD 4.0.1 Engineering Capability Specification	4Q							
BMD 4.0.1 Preliminary Design Review 1		1Q						
BMD 4.0 Critical Design Review		3Q						
BMD 4.0.1 System Design Review		3Q						
BMD 4.0E Engineering Assessment			1Q					
Flight Tests								
FTM-10	3Q							
FTM-11		1Q						
FTM-11A		2Q						
FTM-11 4th Objective		3Q						
FTM-12		3Q						
Fielding Deliveries/Ships								
Long Range Surveillance & Tracking DDGs (BMD 3.0E)	2Q-4Q	1Q-4Q	1Q					
Engagement Cruisers (BMD 3.0)	3Q							
Engagement Cruisers (BMD 3.6)	3Q-4Q	1Q						
Engagement DDGs (BMD 3.6)	4Q	1Q-4Q						
Fielding Deliveries/Missiles								
Block IA Missiles	3Q-4Q	1Q-4Q	1Q					

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603892C Ballistic Missile Defense Aegis				

COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0909 AEGIS BMD Block 2008	254,007	575,620	721,133	592,914	166,100	31,400	0	0
RDT&E Articles Qty	0	0	27	24	9	0	0	0

Note: RDT&E Articles: FY08 - Fifteen (15) SM-3 missiles, four (4) ARAVs, two (2) targets, installation of BMD 3.6 on six (6) DDGs, installation of BMD 3.6.1 on one (1) CG. FY09 - Thirteen (13) SM-3 missiles, two (2) ARAVs, three (3) targets, installation of BMD 3.0E on one (1) DDG, installation of BMD 3.6 on two (2) DDGs, delivery of the BMD 4.0 computer program, one (1) BSP EDM, installation of BMD 4.0 on one (1) CG. FY10 - Eight (8) SM-3 missiles, delivery of the BMD 4.0.1 computer program.

A. Mission Description and Budget Item Justification

Aegis BMD Block 2008 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions: provide enhanced, sea-based Long Range Surveillance and Track (LRS&T) and engagement capabilities.
- In all phases of ballistic missile flight: LRS&T capability against missile threats in all flight stages; engagement capability against missile threats in the midcourse flight stage
- Against all ranges:
 - LRS&T capability against Ballistic Missiles threats of all ranges.
 - Enhanced engagement capability (BMD 4.0.1) will provide: battlespace expanded to include Intermediate-Range Ballistic Missile (IRBM)-class threats

Aegis BMD supported LDC by providing Long Range Surveillance and Track (LRS&T) data to other elements of the BMDS. Aegis BMD will further improve both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon data received via the Tactical Digital Information Link (TADIL) network. Through development and fielding of the Aegis BMD Signal Processor and upgrades to the SM-3 Blk IA missile (SM-3 Blk IB) in Block 2008, Aegis BMD will improve discrimination capability and performance against more diverse and longer range threats.

Aegis BMD Block 2008 will build on BSP development in Block 2006 to expand Aegis BMD effectiveness against the threat base. It will provide a full upgrade to the Aegis BMD Weapon System (BMD 4.0/4.0.1) and an upgraded SM-3 missile, SM-3 Blk IB.

Block 2008 includes improvements to the kinetic warhead's seeker and Divert and Attitude Control System (DACS). Seeker improvements will include the introduction of seeker All-Reflective-Optics (ARO) to improve optics performance, and a Kinetic Warhead Advanced Signal Processor (ASP) to mitigate diminished manufacturing source issues in SM-3 Blk IA missiles. Additionally, the increased processing capability of the ASP will

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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support new discrimination algorithms. The optics and processing improvements will enhance the Aegis BMD contribution to the BMDS missions by providing greater sensitivity and seeker discrimination capability. Other missile improvements include the integration of a two-color seeker and development of the Throttleable Divert and Attitude Control System (TDACS). These enhancements will be tested and verified for the SM-3 Block IB configuration in the Block 2008 timeframe.

Aegis BMD Block 2008 will deliver in two spirals:

- Spiral one (BMD 4.0) will deliver an initial testbed system capability with the SM-3 Blk IA missile. It will build on Block 2006 BSP enhancements to the LRS&T mission by adding mission capability for flight missions.
- Spiral two (BMD 4.0.1) will continue through the System Engineering Development and test in process and culminate as an operationally-certified system capable of firing the SM-3 Blk IA or IB missile.

Other Block 2008 capability enhancements include:

- Improvements in BMDS Command and Control, Battle Management, and Communications (C2BMC) to ensure future BMDS sensor enhancements and the resulting discrimination capabilities are able to be communicated, correlated, and acted upon.
- Improved engagement coordination capability with THAAD and PATRIOT to conserve upper tier missiles.
- Analysis for planned upgrades to the SM-3 missile to expand battlespace and improve discrimination, divert, and probability of mission success.

In collaboration with the MDA Systems Engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD supports an autonomous engagement against Short Range Ballistic Missiles (SRBMs) and Medium Range Ballistic Missiles (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 Missiles (LRBMs) and Intermediate Range Ballistic Missiles (IRBMs) via input for the Ground-based Midcourse Defense (GMD) Sensor Task Plan (STP) and Weapons Task Plan (WTP).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Weapon System	78,158	241,498	263,000	204,366
RDT&E Articles (Quantity)	0	0	6	6

In Block 2008, the Aegis BMD Weapon System Engineering group will develop BMD 4.0 to support testbed flight mission operations; and BMD 4.0.1 to provide an operationally-certified system with either the SM-3 Block IA or IB.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
<p>FY06 Accomplishments:</p> <ul style="list-style-type: none">• Prepared a Specification Change Notice (SCN) to the Block 2006 Element Capability Specification (ECS) to incorporate Block 2008 requirements.• Performed System level trade-off studies based on the updated Block 2006 ECS.• Prepared an SCN to the Block 2008 A-Spec., defining the Aegis Weapon System design requirements to meet Block 2008 system-level requirements.• Conducted a Delta System Requirements Review (SRR).• Commenced studies to improve Lethal Object Designation in a cluttered environment. <p>FY07 Planned Program:</p> <ul style="list-style-type: none">• Support the MDA System Engineering's Update of the Test Bed System Specification (TBSS) to reflect Block 2008 requirements.• Update the Block 2008 Element Capability Specification (ECS) based on the approved TBSS.• Conduct the BMD 4.0.1 System Design Review (SDR), based on the updated ECS, to present Block 2008 requirements.• Conduct the Preliminary Design Review (PDR) to review and gain approval for the contractor's approach to meeting Block 2008 requirements.• Complete work to improve Lethal Object Designation in a cluttered environment.• Conduct critical experiments using Aegis BMD Signal Processor ADM equipment.• Conduct studies on RF/IR sensor fusion for a Block 2008 implementation. <p>FY08 Planned Program:</p> <p>RDT&E Articles: BMD 3.6 Destroyers (6)</p> <ul style="list-style-type: none">• Continue development of BMD 4.0, leading to an Engineering Assessment in FY09.• Conduct the Block 2008 Critical design Review (CDR), to review the contractor's design to meet Block 2008 requirements and approval to proceed with MEIT leading to a BMD 4.0.1 demonstration and certification. <p>FY09 Planned Program:</p> <p>RDT&E Articles: BMD 3.0E DDG (1), BMD 4.0 Computer Program (1), BSP Engineering Development Model (1), BMD 3.6 LRS&T and Engagement Destroyers (2), BMD 4.0 Cruiser (Lake Erie) (1)</p> <ul style="list-style-type: none">• Conduct BMD 4.0 Engineering Assessment• Install BMD 4.0 on an Aegis Cruiser (Lake Erie)		

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Install BSP Engineering Development Model (EDM) on an Aegis Cruiser.
- Support FTM-16, using BMD 4.0 and the BSP EDM.
- Continue development and testing of BMD 4.0.1, leading to an Engineering Assessment in FY10.

	FY 2006	FY 2007	FY 2008	FY 2009
SM-3 Missile	175,849	331,682	272,100	229,600
RDT&E Articles (Quantity)	0	0	15	13

Block 2008 missile improvements include improvements to the kinetic warhead's seeker and Divert and Attitude Control System (DACs). Seeker improvements will include the introduction of seeker All-Reflective-Optics (ARO) to improve optics performance, and a Kinetic Warhead Advanced Signal Processor (ASP). Other missile improvements include the two-color seeker and development of the Throttleable Divert and Attitude Control System (TDACS). Also during this timeframe, Aegis BMD will complete delivery of SM-3 Blk IA missiles for deployment, and begin delivery of SM-3 Blk IB missiles for testing and deployment.

FY06 Accomplishments:

- Continued SM-3 Blk IB IR discrimination risk reduction and algorithm development.
- Continued SM-3 Blk IB All Reflective Optics (ARO) engineering for improved missile discrimination capabilities.
- Continued SM-3 Blk IB Advanced Signal Processor (ASP) design efforts for improved missile discrimination and to mitigate diminished manufacturing source issues.
- Continued the development and began integration of the SM-3 Blk IB two-color seeker.
- Continued SM-3 Blk IB TDACS design efforts.
- Procured Long Lead Material for SM-3 Blk IA Missiles with delivery beginning in FY09.
- Began fabrication of SM-3 Blk IA missiles for delivery beginning in FY08.

FY07 Planned Program:

- Continue SM-3 Blk IB All Reflective Optics (ARO) engineering for improved missile discrimination capabilities.
- Continue SM-3 Blk IB Advanced Signal Processor (ASP) design efforts for improved missile discrimination.
- Continue testing of SM-3 Blk IB two-color seeker upgrade.
- Continue SM-3 Blk IB TDACS development.
- Produce initial SM-3 Blk IB proof-of-design units.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Complete SM-3 Blk IB IR discrimination risk reduction and algorithm development.
- Upgrade SM-3 Blk IA Virtual and Inert Operational Missile to SM-3 Blk IB configuration to validate interface integrity within the missile and across weapon system interfaces.
- Continue fabrication of SM-3 Blk IA missiles for delivery beginning in FY08, and begin fabrication of FY09 deliveries.

FY08 Planned Program:

RDT&E Articles: SM-3 Blk IA Missiles (15)

- Continue material engineering to monitor parts obsolescence.
- Continue assembly and delivery of SM-3 Blk IA missiles.
 - Complete assembly and delivery of fifteen (15) missiles
- Complete SM-3 Blk IB All-Reflective Optics (ARO) engineering for improved missile discrimination capabilities.
- Complete SM-3 Blk IB Advanced Signal Processor (ASP) design efforts for improved missile discrimination.
- Complete testing of SM-3 Blk IB two-color seeker upgrade.
- Complete SM-3 Blk IB TDACS development.

FY09 Planned Program:

RDT&E Articles: SM-3 Blk IA Missiles (12), SM-3 Blk IB Missile (Test Round) (1)

- Continue material engineering to monitor parts obsolescence.
- Continue assembly and delivery of SM-3 Blk IA missiles
 - Complete assembly and deliver twelve (12) SM-3 Blk IA missiles.
- Complete assembly and delivery of one (1) SM-3 Blk IB test round missile.
- Complete element integration of SM-3 Blk IB missile.

	FY 2006	FY 2007	FY 2008	FY 2009
System Test & Evaluation	0	0	105,100	105,500
RDT&E Articles (Quantity)	0	0	0	0

This effort provides funding for Aegis BMD test and evaluation Block 2008 flight test missions, as well as other system-wide BMDS tests to support the development of the BMDS.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
<p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Participate in FTM-13 and FTM-14 <ul style="list-style-type: none"> ○ Complete pre-flight analysis to verify scenarios and performance assessment. ○ Prepare and complete missile delivery package for Mission Control Panel reviews. ○ Perform post-flight analysis to validate high-fidelity simulations. ○ Conduct post-flight analysis to support Mission Data Reviews (MDRs). ○ Perform analysis of SM-3 Blk IA Hardware/Software based on flight results. • Conduct FTM-13 Campaign: <ul style="list-style-type: none"> ○ Complete pre-flight analysis to verify mission scenarios and to predict flight performance. ○ Prepare and complete missile delivery package for the Mission Control Panel reviews. ○ Conduct a simultaneous launch of two (2) ARAV-A targets for BMD 3.6 engagement with two (2) SM-3 Blk IA missiles. ○ Perform post-flight analysis to validate high fidelity models and simulations. ○ Conduct post-flight analysis to support Mission Data Reviews (MDRs). • Conduct FTM-14 Campaign: <ul style="list-style-type: none"> ○ Complete pre-flight analysis to verify mission scenarios and to predict flight performance. ○ Prepare and complete missile delivery package for the Mission Control Panel reviews. ○ Conduct a BMD 3.6 simulated engagement of an ARAV-B MRBM target. ○ Conduct a BMD 3.6 Launch on TADIL engagement and intercept of a Group F IRBM target with a SM-3 Blk IA missile. ○ Test interoperability with other BMDS elements. ○ Perform post-flight analysis to validate high fidelity models and simulations. ○ Conduct post-flight analysis to support Mission Data Reviews (MDRs). • Participate as a sensor element in BMDS tests to include FTG-6, FTG-7, FTT-9, FTT-10, FTT-11, FTT-12, and FTT-13 missions. • Participate in GT-196 target of opportunity • Conduct critical experiments using the MK-99 Doppler Data Collection System or similar equipment as a risk mitigation for Block 2008 implementation. • Begin test planning for FTM-15: prepare target, develop models and simulations, and ready the range for test. • Begin preliminary test planning for FTM-16: develop models and simulations. 		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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FY09 Planned Program:

Conduct FTM-15 Campaign funding and events accounted for in project 0918, Near-Term Sea-Based Terminal.

- Conduct FTM-16 Campaign:
 - Complete pre-flight analysis to verify mission scenarios and to predict flight performance.
 - Prepare and complete missile delivery package for the Mission Control Panel reviews.
 - Conduct a BMD 4.0 simulated engagement of an ARAV-B MRBM target.
 - Conduct a BMD 4.0 engagement and intercept of a Group B MRBM target with an SM-3 Blk IB missile.
 - Conduct a BMD 4.0 simulated engagement of a Group C MRBM target.
 - Test interoperability with other BMDS elements.
 - Perform post-flight analysis to validate high-fidelity models and simulations.
 - Conduct post-flight analysis to support Mission Data Reviews (MDRs).
- Participate in targets of opportunity.
- Begin test planning for FTM-17: prepare target, develop models and simulations, and ready the range for test.

	FY 2006	FY 2007	FY 2008	FY 2009
Block 2008 Targets	0	0	66,933	39,448
RDT&E Articles (Quantity)	0	0	6	5

This effort provides the Missile Defense Agency with ballistic missile target hardware, target range support, logistics support, target integration, and associated launch services to support Aegis BMD flight tests in Block 08, as well as other system wide tests to support the development of the Ballistic Missile Defense System.

FY 2008 Planned Program:

RDT&E Articles: 2 Targets, 4 ARAVs

- Continue design, manufacture and delivery of one (1) MBRV-2 and Payload insert in support of FTM-14.
- Continue design, manufacture and delivery of a LV-2 launch vehicle in support of FTM-14.
- Presentation of LV-2/MBRV-2 Target in support of FTM-14 .
- Two ARAV-B and -C presentations and post flight analysis in support of FTM-14 TX.
- Design, manufacture and delivery of a SRBMs, MBRV-3s and payloads in support of FTM-15 (SBT - project 0918) and FTM-16 SBT.
- Design, manufacturing and delivery of a Group C, MBRV-1, and payload in support of FTM-16 TX.
- Design, manufacture and delivery of a MRT, MBRV-2 and payload in support of FTM-16.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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FY 2009 Planned Program:

RDT&E Articles: 3 Targets, 2 ARAVs

- Presentation of a SRBM/MBRV-3 target in support of FTM-15 SBT (project 0918)
- Presentation of a ARAV-A/NOSE in support of FTM-15 (project 0918)
- Presentation of a GROUP C/MBRV-1 target in support of FTM-16 TX.
- Presentation of a ARAV-B/NOSE in support of FTM-16 TX.
- Presentation of a MRT/MBRV-2 in support of FTM-16.
- Presentation of a SRBM/MBRV-3 in support of FTM-16 SBT.
- Design, manufacturing and delivery of a Group C, MBRV-1, and payload in support of FTM-17.
- Design, manufacture and delivery of a MRT, MBRV-2 and payload in support of FTM-17.

	FY 2006	FY 2007	FY 2008	FY 2009
SE&I and BMDS Integration	0	0	3,500	3,500
RDT&E Articles (Quantity)	0	0	0	0

This effort provides funding to work in collaboration with the BMDS System Engineer to develop requirements flowdown for Aegis BMD Block 2008 and participate in definition of appropriate Engagement Sequence Groups to best utilize Aegis BMD capability in the overall BMDS.

FY08 Planned Program:

- Support system integration efforts with other BMDS elements to reflect the overall BMDS as defined in the Block 2008 TBSS.
- Support the MDA System Engineering's Update of the Test Bed System Specification (TBSS) to reflect Block 2008 requirements.

FY09 Planned Program:

- Support system integration efforts with other BMDS elements to reflect the overall BMDS as defined in the Block 2008 TBSS.
- Support the MDA System Engineering's Update of the Test Bed System Specification (TBSS) to reflect Block 2008 requirements.

	FY 2006	FY 2007	FY 2008	FY 2009
Aegis BMD Fire Control (BMC3)	0	2,440	10,500	10,500
RDT&E Articles (Quantity)	0	0	0	0

This effort provides funding for BMC3 improvements, including establishment of alternate BMD data paths and enhancements, supporting increased interoperability with other BMDS elements.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
<p>FY07 Planned Program:</p> <ul style="list-style-type: none">• Continue incorporation of CDLMS upgrades, including:<ul style="list-style-type: none">○ Interoperability improvements to support Long Range Surveillance and Track○ Enhanced Launch on TADIL support○ Engagement Coordination• Continue definition, planning, and implementation of the Defense Information Infrastructure Common Operating Environment (DIICOE) compliant Aegis BMD multi-ship mission planner.• Continue development of enhanced discrimination algorithms to improve support for Long Range Surveillance and Track and Engagement missions. <p>FY08 Planned Program:</p> <ul style="list-style-type: none">• Continue incorporation of CDLMS upgrades, including:<ul style="list-style-type: none">○ Interoperability improvements to support Long Range Surveillance and Track○ Enhanced Launch on TADIL support○ Engagement Coordination• Continue definition, planning, and implementation of DIICOE compliant Aegis BMD Multi-Ship Mission Planner.• Continue development of enhanced discrimination algorithms and conduct of critical experiments. <p>FY09 Planned Program:</p> <ul style="list-style-type: none">• Complete CDLMS upgrades to incorporate:<ul style="list-style-type: none">○ Interoperability improvements○ Enhanced Launch on TADIL to increase battlespace○ Enhanced Engagement Coordination to conserve upper-tier interceptors• Complete implementation of DIICOE compliant Aegis BMD Multi-Ship Mission Planner.• Complete initial implementation of enhanced discrimination algorithms to improve support to Long Range Surveillance and Track and Engagement missions.		

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
C. Other Program Funding Summary									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	

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 has awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and the Aegis BMD Weapon System, respectively.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
I. Product Development Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System										
	SS/CPAF	Lockheed Martin/NJ	72,510	190,145	1Q	146,350	1Q	134,800	1Q	543,805
	MIPR	NSWC/DD/VA	1,632	5,048	1Q	13,475	1Q	12,700	1Q	32,855
	MIPR	NSWC/PHD/CA	751	5,100	1Q	3,650	1Q	2,750	1Q	12,251
	MIPR	JHU/APL/MD	1,322	7,750	1Q	5,345	1Q	4,500	1Q	18,917
	MIPR	SPAWAR/CA	845	6,100	1Q	2,250	1Q	1,650	1Q	10,845
	MIPR	Va Sites/VA	0	5,555	1Q	4,300	1Q	3,850	1Q	13,705
	Various	Various	0	0	N/A	3,580	1/2Q	2,891	1/2Q	6,471
	MIPR	Aegis Techrep/NJ	0	0	N/A	1,750	1Q	1,225	1Q	2,975
Deployment			0	0	N/A	42,300	N/A	0	N/A	42,300
SM-3 Missile										
		Raytheon/AZ	182,000	273,189	1Q	200,000	N/A	162,600	N/A	817,789
	MIPR	NSWC DD/VA	0	7,061	1Q	7,000	N/A	6,000	N/A	20,061
	MIPR	JHU/APL/MD	0	8,164	1Q	7,000	N/A	6,000	N/A	21,164
	MIPR	NSWC/CR/MD	0	2,184	1Q	2,000	N/A	1,500	N/A	5,684
	MIPR	NSWC/CL/CA	0	2,350	1/2Q	2,000	N/A	1,500	N/A	5,850
	MIPR	NSWC/IH/MD	0	3,576	1Q	3,000	4Q	2,500	N/A	9,076
	MIPR	NSWC Corona/CA	0	3,564	1Q	3,000	N/A	2,500	N/A	9,064
	MIPR	MIT/LL/MA	0	4,204	1Q	4,000	N/A	3,000	N/A	11,204
	MIPR	NSWC/PHD/CA	0	3,534	1Q	2,000	N/A	1,500	N/A	7,034
	Various	Various	0	5,336	1/2Q	2,100	N/A	2,500	N/A	9,936
SE&I and BMDS Integration										
	CPFF	JHU/APL/MD	0	0	4Q	235	1Q	235	1Q	470

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
	MIPR	NSWC Corona/ CA	0	0	4Q	280	1Q	280	1Q	560
	MIPR	NSWC DD/VA	0	0	4Q	2,065	1Q	2,065	1Q	4,130
	MIPR	NSWC PHD/CA	0	0	4Q	490	1Q	490	1Q	980
	Various	Various	0	0	4Q	430	1/2Q	430	1/2Q	860
Aegis BMD Fire Control (BMC3)										
	CPFF	JHU/APL/MD	0	457	1Q	1,650	1Q	1,650	1Q	3,757
	FPI	MIT/MA	0	490	1Q	845	1Q	845	1Q	2,180
		MITRE	0	330	1Q	672	1Q	672	1Q	1,674
	MIPR	NSWC PHD/CA	0	483	1Q	834	1Q	834	1Q	2,151
	MIPR	SPAWAR/CA	0	329	1Q	5,742	1Q	5,742	1Q	11,813
	Various	Various	0	351	1/2Q	757	1/2Q	757	1/2Q	1,865
Subtotal Product Development			259,060	535,300		469,100		367,966		1,631,426

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System										
	MIPR	ATRC/VA	0	650	1Q	0	N/A	0	N/A	650
	CPFF	SEG/MD	1,625	1,950	1Q	0	N/A	0	N/A	3,575
	FFRDC	MIT/LL/MA	1,755	3,250	1Q	0	N/A	0	N/A	5,005
	FFRDC	MITRE/VA	0	325	1Q	0	N/A	0	N/A	325
	MIPR	NSWC/Corona/ CA	0	163	1Q	0	N/A	0	N/A	163

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
		Various	1,718	162	1Q	0	N/A	0	N/A	1,880
	CPFF	General Dynamics/NJ	0	0	N/A	21,050	1Q	14,650	1Q	35,700
	CPFF	Paradigm/VA	0	0	N/A	1,000	1Q	1,000	1Q	2,000
	CPFF	Gryphon/MD	0	0	N/A	1,000	1Q	1,000	1Q	2,000
	CPAF	Lockheed Martin/NJ	0	0	N/A	500	1Q	500	1Q	1,000
	CPAF	Raytheon/AZ	0	0	N/A	500	1Q	500	1Q	1,000
	MIPR	NAVSEA/DC	0	0	N/A	4,500	1Q	4,500	1Q	9,000
	MIPR	MDA/VA	0	15,300	1Q	11,450	1Q	17,850	1Q	44,600
SM-3 Missile										
	MIPR	NSWC DD/VA	1,000	500	1Q	0	N/A	0	N/A	1,500
	MIPR	JHU/APL/MD	1,000	1,000	1Q	0	N/A	0	N/A	2,000
	FPI	MIT/LL/MA	0	100	1/2Q	0	N/A	0	N/A	100
	MIPR	NSWC/CD/MD	0	471	1Q	0	N/A	0	N/A	471
	MIPR	NAVSEA/VA	0	838	1Q	0	N/A	0	N/A	838
	Various	Various	0	129	1Q	0	4Q	0	4Q	129
	CPFF	General Dynamics/NJ	0	0	4Q	21,050	1Q	14,650	1Q	35,700
	CPFF	Paradigm/VA	0	0	4Q	1,000	1Q	1,000	1Q	2,000
	CPFF	Gryphon/MD	0	0	4Q	1,000	1Q	1,000	1Q	2,000
	CPAF	Lockheed Martin/NJ	0	0	4Q	500	1Q	500	1Q	1,000
	CPAF	Raytheon/AZ	0	0	4Q	500	1Q	500	1Q	1,000
	MIPR	NAVSEA/DC	0	0	4Q	4,500	1Q	4,500	1Q	9,000
	MIPR	MDA/VA	0	15,482	4Q	11,450	1Q	17,850	1Q	44,782
Subtotal Support Costs			7,098	40,320		80,000		80,000		207,418
Remarks										

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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III. Test and Evaluation Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
System Test & Evaluation										
	MIPR	PMRF/HI	0	0	4Q	8,000	N/A	8,000	N/A	16,000
	MIPR	SMDC/AL	0	0	4Q	3,000	N/A	3,000	N/A	6,000
	MIPR	NSWC DD/VA	0	0	4Q	10,000	N/A	10,000	N/A	20,000
	CPFF	JHU/APL/MD	0	0	4Q	17,000	N/A	17,000	N/A	34,000
	CPAF	Lockheed Martin/NJ	0	0	4Q	20,000	N/A	20,000	N/A	40,000
	MIPR	NSWC PHD/CA	0	0	4Q	7,000	N/A	7,000	N/A	14,000
	CPFF	MIT/LL/MA	0	0	4Q	5,000	N/A	5,000	N/A	10,000
	MIPR	AIRPAC/HI	0	0	4Q	3,000	N/A	3,000	N/A	6,000
	MIPR	SPAWAR/CA	0	0	4Q	5,000	N/A	5,000	N/A	10,000
	Various	Various	0	0	4Q	27,100	N/A	27,500	N/A	54,600
Block 2008 Targets										
		MDA/VA	0	0	N/A	66,933	N/A	39,448	N/A	106,381
Subtotal Test and Evaluation			0	0		172,033		144,948		316,981

Remarks

IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

Remarks

Project Total Cost			266,158	575,620		721,133		592,914		2,155,825
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Development Milestones																																				
BMD 4.0/4.0.1 Development	▲				▲				▲				▲				▲				▲				▲				▲				▲			
Block 2008 Preliminary Design Review					▲																															
Block 2008 Critical Design Review								Δ																												
BMD 4.0.1 Preliminary Design Review 2												Δ																								
BMD 4.0.1 Critical Design Review																Δ																				
BMD 4.0 Engineering Assessment																Δ																				
BMD 4.0.1 Engineering Assessment																																				
Manufacturing Processes and Advanced Materials																																				
BSP Engineering Development Model (cruiser)																Δ																				
Testing Milestones																																				
RIMPAC 08																Δ																				
Flight Tests																																				

Legend	
▲	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

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flight Tests																																
FTM-13									Δ																							
FTM-14											Δ																					
FTM-16															Δ																	
Fielding Deliveries/Ships																																
LRS&T destroyers											Δ																					
Engagement DDGs (BMD 3.6)									Δ	—	—	—	—	—	—	—	—															
BMD 4.0 Cruiser															Δ																	
Fielding Deliveries/Missiles																																
Block 1A Missiles									Δ	—	—	—	—	—	—	—																

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲—▲	Complete Activity	▲—▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones								
BMD 4.0/4.0.1 Development	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q			
Block 2008 Preliminary Design Review		1Q						
Block 2008 Critical Design Review		3Q						
BMD 4.0.1 Preliminary Design Review 2			1Q					
BMD 4.0.1 Critical Design Review			4Q					
BMD 4.0 Engineering Assessment				1Q				
BMD 4.0.1 Engineering Assessment					1Q			
Manufacturing Processes and Advanced Materials								
BSP Engineering Development Model (cruiser)				2Q				
Testing Milestones								
RIMPAC 08			4Q					
Flight Tests								
FTM-13			1Q					
FTM-14			3Q					
FTM-16				3Q				
Fielding Deliveries/Ships								
LRS&T destroyers			2Q					
Engagement DDGs (BMD 3.6)			2Q-4Q	1Q-3Q				
BMD 4.0 Cruiser				2Q				
Fielding Deliveries/Missiles								
Block 1A Missiles			2Q-4Q	1Q-4Q				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0009 AEGIS BMD Block 2010	0	40,404	71,456	162,819	450,586	324,929	32,006	29,493
RDT&E Articles Qty	0	0	0	0	27	40	7	0

Note: RDT&E Articles: FY10 - Eighteen (18) SM-3 missiles, one (1) ARAV, two (2) targets, installation of BMD 4.0.1 on one (1) CG, installation of BMD 3.6.1 on five (5) DDGs. FY11 - Twenty-nine (29) SM-3 missiles, one (1) ARAV, one (1) target, installation of BMD 3.6.1 on six (6) DDGs, installation of BMD 4.0.1 on one (1) CG, installation of BMD 4.0.1 on two (2) DDGs. FY12 - Six (6) SM-3 missiles, installation of BMD 4.0.1 on DDG (1).

A. Mission Description and Budget Item Justification

Aegis BMD Block 2010 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions: provide sea-based surveillance, tracking, and engagement capabilities.
- In all phases of ballistic missile flight: Long Range Surveillance and Track (LRS&T) capability against missile threats in all flight stages; engagement capability against missile threats in the midcourse flight stage
- Against all ranges:
 - LRS&T capability against Ballistic Missile threats of all ranges
 - Engagement capability against SRBM to IRBM-class threats

Aegis BMD supported LDC by providing Long Range Surveillance and Track (LRS&T) data to other elements of the BMDS. Aegis BMD will further improve both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon autonomous data and upon data received via the Tactical Digital Information Link (TADIL) network. Through development and fielding of the Aegis BMD Signal Processor and upgrades to the SM-3 Blk IA missile in Block 2006/2008, Aegis BMD will significantly improve discrimination capability and performance against more diverse and longer range threats.

The Aegis BMD Block 2010 program will integrate Aegis BMD Block 2008 and the BMD mission with the Navy-developed Open Architecture system. This effort will transition Aegis BMD from older, MIL-standard computers to newer Commercial Off The Shelf (COTS) computing plants. This change is necessary for Aegis BMD to remain compatible with Navy assets 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 as the threat projection changes. Open architecture will be included in future fielded BMD system improvements.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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In collaboration with the MDA Systems Engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD Block 2010 will support an autonomous engagement against Short Range Ballistic Missiles (SRBMs), Medium Range Ballistic Missiles (MRBMs) and Intermediate-Range Ballistic Missiles (IRBMs) without external cueing. It will support an engagement against SRBM to IRBM- class targets 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 Missiles (LRBMs) and Intermediate Range Ballistic Missiles (IRBMs) via input for the Ground-based Midcourse Defense (GMD) Sensor Task Plan (STP) and Weapons Task Plan (WTP).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Weapon System Engineering	0	14,243	40,656	124,519
RDT&E Articles (Quantity)	0	0	0	0

For Block 2010, Aegis BMD will begin performance and threat analysis in FY07.

FY07 Planned Program:

- Perform preliminary analysis in support of Engineering Capability Specification (ECS) development.
 - Evaluate U.S. Navy Open Architecture computer program code.
 - Review U.S. Navy cruiser modernization and destroyer modernization hardware suites for future incorporation of Aegis BMD Block 2010 computer programs.
 - Begin drafting Block 2010 ECS.

FY08 Planned Program:

- Complete Block 2010 ECS
- Conduct Block 2010 System Requirements Review (SRR)
- Draft Block 2010 A-Spec, System B-1 & B-2 Specs
- Conduct Block 2010 System Design Review (SDR)

FY09 Planned Program:

- Draft System B-5 Specs (some in Unified Modeling Language), update A-Spec & B-1s from SDR

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Conduct Block 2010 Preliminary Design Review (PDR), to review and gain approval for the contractor's approach to meeting the Block 2010 requirements.

	FY 2006	FY 2007	FY 2008	FY 2009
SM-3 Missile	0	26,161	30,800	38,300
RDT&E Articles (Quantity)	0	0	0	0

Aegis BMD Block 2010 will continue the procurement of SM-3 Block IB missiles.

FY07 Planned Program:

- Procure Long Lead Material for SM-3 Blk IB missiles with delivery in FY10.

FY08 Planned Program:

- Procure Long Lead material for SM-3 Blk IB missiles with delivery in FY11.
- Begin assembly of SM-3 Blk IB missiles with delivery in FY10.

FY09 Planned Program:

- Continue assembly of SM-3 Blk IB missiles with delivery in FY10.
- Begin assembly of SM-3 Blk IB missiles with delivery in FY11.

C. Other Program Funding Summary

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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 has awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and the Aegis BMD Weapon System, respectively.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Engineering										
	CPAF	Lockheed Martin/ NJ	0	12,070	1Q	32,106	1Q	37,419	1Q	81,595
	MIPR	NSWC DD/VA	0	800	N/A	2,500	1Q	2,550	1Q	5,850
	CPFF	JHU/APL/MD	0	750	N/A	2,475	1Q	2,500	1Q	5,725
	CPFF	MIT/MA	0	400	N/A	1,390	1Q	1,275	1Q	3,065
	CPAF	VA Sites/VA	0	100	N/A	1,075	1Q	1,000	1Q	2,175
	Various	Various	0	123	N/A	360	1/2Q	575	1/2Q	1,058
	MIPR	Aegis Techrep/ NJ	0	0	N/A	750	1Q	900	1Q	1,650
Deployment			0	0	N/A	0	N/A	78,300	1Q	78,300
SM-3 Missile										
	CPAF	Raytheon/AZ	0	24,000	4Q	26,180	N/A	32,555	N/A	82,735
	MIPR	NSWC IH/MD	0	0	4Q	1,100	1Q	1,500	N/A	2,600
	MIPR	NSWC DD/ VA	0	0	4Q	1,220	1Q	1,420	N/A	2,640
	MIPR	NSWC PHD/CA	0	0	4Q	1,000	1Q	1,325	N/A	2,325
	Various	Various	0	0	4Q	1,300	1/2Q	1,500	N/A	2,800
Subtotal Product Development			0	38,243		71,456		162,819		272,518

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
II. Support Costs Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
SM-3 Missile										
	MIPR	MDA/VA	0	2,161	1Q	0	N/A	0	N/A	2,161
Subtotal Support Costs			0	2,161		0		0		2,161
Remarks										
III. Test and Evaluation Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										
Remarks										
IV. Management Services Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										
Remarks										
Project Total Cost			0	40,404		71,456		162,819		274,679
Remarks										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Development Milestones																																
Block 2010 System Requirements Review											Δ																					
Block 2010 System Design Review											Δ																					
Block 2010 Preliminary Design Review															Δ																	
Block 2010 Critical Design Review																			Δ													
Block 2010 Engineering Assessment																															Δ	
Flight Tests																																
FTM-17																			Δ													
FTM-18																															Δ	
Fielding Deliveries/Ships																																
BMD 4.0.1 Cruiser																																
BMD 4.0.1 Destroyers																																

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲—▲	Complete Activity	▲—▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones								
Block 2010 System Requirements Review			1Q					
Block 2010 System Design Review			3Q					
Block 2010 Preliminary Design Review				2Q				
Block 2010 Critical Design Review					2Q			
Block 2010 Engineering Assessment						4Q		
Flight Tests								
FTM-17					3Q			
FTM-18						3Q		
Fielding Deliveries/Ships								
BMD 4.0.1 Cruiser						1Q-4Q		
BMD 4.0.1 Destroyers						1Q-4Q		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
R109 AEGIS BMD Block 2012	0	8,684	26,700	130,300	316,800	412,700	687,781	758,219
RDT&E Articles Qty	0	0	0	0	0	0	22	13

Note: RDT&E Articles: FY12 - Nineteen (19) SM-3 missiles, BMD 4.0.1 CG (1) and DDGs (2). FY13 - Nine (9) SM-3 missiles, BMD 4.0.1 DDGs (4).

A. Mission Description and Budget Item Justification

Aegis BMD Block 2012 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions: provide sea-based surveillance, tracking, and engagement capabilities. Japan, and possibly other countries, will deploy Aegis BMD.
- In all phases of ballistic missile flight: boost, midcourse, and terminal.
- Against all ranges:
 - Against long-range ballistic missiles by providing surveillance and tracking support as part of the Block 04 Limited Defensive Capability (LDC).
 - Against short and medium range ballistic missiles by providing engagement support as part of Block 2004.
 - Against limited intermediate range ballistic missiles by providing engagement support as part of Block 2008.
 - Against long-range ballistic missiles, to include some Intercontinental Ballistic Missile (ICBM) threats, using the upgrade SM-3 Blk IIA missile.

Aegis BMD supported LDC by providing Long Range Surveillance and Track (LRS&T) data to other elements of the BMDS. Aegis BMD will further improve both national and international security with its ability to launch Standard Missile 3 (SM-3) missiles based upon autonomous data and upon data received via the Tactical Digital Information Link (TADIL) network. Through development and fielding of the Aegis BMD Signal Processor and upgrades to the SM-3 Blk IA missile in Block 2006/2008, Aegis BMD will significantly improve discrimination capability and performance against more diverse and longer range threats.

The Aegis BMD Block 2012 program will integrate Aegis BMD Weapon System improvements, including Engage on Remote, and the SM-3 Blk IIA missile. Other Aegis BMD Block 2012 improvements include:

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Defeat a wide variety of ballistic missiles in the presence of counter countermeasures (Short Range Ballistic Missiles (SRBMs), Medium Range Ballistic Missiles (MRBMs), Intermediate Range Ballistic Missiles (IRBMs), Long Range Ballistic Missiles (LRBMs), including limited Inter-Continental Ballistic Missiles (ICBMs).
- Feature Aided Track Correlation (FATC)
- Forcenet/GIG Compliance
- Improvements to BMDS Multi-Element Sensor Data Fusion.
- Engage on Remote (EoR)

Missile development efforts for the SM-3 Blk IIA configuration are captured under project 0402, Japanese Cooperative Program. This project includes incorporation of the SM-3 Blk IIA with the Aegis BMD Weapon System with Open Architecture.

In collaboration with the MDA systems engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD Block 2012 will support an autonomous engagement against SRBMs, MRBMs, IRBMs, LRBMs and some ICBMs without requiring external cueing. It will also support an engagement against SRBMs, MRBMs, IRBMs and LRBMs 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 IRBMs and ICBMs via input for the Ground-based Midcourse Defense (GMD) Sensor Task Plan (STP) and Weapons Task Plan (WTP).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Weapon System Engineering	0	8,684	26,700	43,900
RDT&E Articles (Quantity)	0	0	0	0

Block 2012 will integrate SM-3 Blk IIA missile improvements (developed under project 0402) with the Aegis BMD Weapon System, leveraging on improvements achieved under Block 2010, to include Open Architecture.

FY07 Planned Program:

- Perform preliminary analysis in support of Block 2012 Element Capability Specification (ECS) development.
- Perform initial Block 2012 requirements development in support of SM-3 Blk IIA top-level requirement generation.

FY08 Planned Program:

- Begin modification of Block 2008 simulation programs to model Block 2012 performance.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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- Conduct analyses of Block 2012 threat set.
- Draft Block 2012 ECS

FY09 Planned Program:

- Conduct System Requirements Review (SRR), Review ECS and provide requirements to the contractor for Block 2012.
- Draft A-Spec based on requirements from ECS and guidance from SRR.

	FY 2006	FY 2007	FY 2008	FY 2009
Missile	0	0	0	86,400
RDT&E Articles (Quantity)	0	0	0	0

During Block 2012, additional SM-3 Blk IB missiles will be deployed, and flight test support will be provided.

FY09 Planned Program:

- Procure long lead material for SM-3 missiles for Blk 1B delivery in FY 2011.

C. Other Program Funding Summary

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
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PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY					R-1 NOMENCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					0603892C Ballistic Missile Defense Aegis				

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

D. Acquisition Strategy

The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall BMDS capability. Considering all the technical and management aspects of the program and the requirements presented by an evolving ballistic missile threat, the Aegis BMD program's preferred strategy would be to award sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and the Aegis BMD Weapon System, respectively.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
I. Product Development Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Engineering										
	CPAF	Lockheed Martin/NJ	0	6,000	1/2Q	20,825	1Q	36,000	1Q	62,825
	CPAF	JHU/APL/MD	0	500	1/2Q	1,775	1Q	2,500	1Q	4,775
	MIPR	NSWCDD/VA	0	500	1/2Q	1,350	1Q	2,400	1Q	4,250
	MIPR	SPAWAR/CA	0	500	1/2Q	500	1Q	500	1Q	1,500
	MIPR	VA Sites/VA	0	400	1/2Q	775	1Q	1,000	1Q	2,175
	Various	Various	0	784	1/3Q	725	1/3Q	600	1/2Q	2,109
	MIPR	Aegis Techrep/ NJ	0	0	N/A	750	1Q	900	1Q	1,650
Missile										
	CPAF	Raytheon/AZ	0	0	4Q	0	4Q	76,400	N/A	76,400
	MIPR	NSWC DD/VA	0	0	4Q	0	4Q	1,500	N/A	1,500
	CPAF	JHU/APL/MD	0	0	4Q	0	4Q	1,500	N/A	1,500
	MIPR	NSWC PHD/CA	0	0	4Q	0	4Q	1,325	N/A	1,325
	MIPR	NSWC IH/MD	0	0	4Q	0	4Q	250	N/A	250
	MIPR	NSWC Corona/ CA	0	0	4Q	0	4Q	250	N/A	250
	MIPR	MDA/VA	0	0	4Q	0	4Q	5,175	1Q	5,175
	Various	Various	0	0	4Q	0	4Q	0	N/A	
Subtotal Product Development			0	8,684		26,700		130,300		165,684
Remarks										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis								Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
II. Support Costs Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs										
Remarks										
III. Test and Evaluation Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										
Remarks										
IV. Management Services Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										
Remarks										
Project Total Cost			0	8,684		26,700		130,300		165,684
Remarks										

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013												
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4									
Development Milestones																																									
Block 2012 System Requirements Review															Δ																										
Block 2012 System Design Review																			Δ																						
Block 2012 Preliminary Design Review																																									
Block 2012 Preliminary Design Review 2																																									
Block 2012 Critical Design Review																																									
Flight Tests																																									
FTM-19																																									
FTM-20																																									

Legend			
	Significant Event (complete)		Significant Event (planned)
	Milestone Decision (complete)		Milestone Decision (planned)
	Element Test (complete)		Element Test (planned)
	System Level Test (complete)		System Level Test (planned)
	Complete Activity		Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones								
Block 2012 System Requirements Review				1Q				
Block 2012 System Design Review					1Q			
Block 2012 Preliminary Design Review					3Q			
Block 2012 Preliminary Design Review 2						3Q		
Block 2012 Critical Design Review								3Q
Flight Tests								
FTM-19							3Q	
FTM-20								2Q

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0918 Sea-Based Terminal Block 2008	0	15,000	62,000	10,000	0	0	0	0
RDT&E Articles Qty	0	0	2	5	0	0	0	0
<i>Note: FY08 - Delivery of the BMD 3.6.1 SBT computer program (1), installation of BMD 3.6.1 SBT on one (1) DDG. FY09 - Installation of BMD 3.6.1 SBT on three (3) DDGs and two (2) CGs.</i>								
<u>A. Mission Description and Budget Item Justification</u>								
The Near-Term Sea-Based Terminal (SBT) project in Block 2008 supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:								
<ul style="list-style-type: none"> • In all regions: provide enhanced engagement capability. • In all phases of ballistic missile flight: engagement capability against missile threats in the terminal flight stage. • All ranges: Near-Term SBT provides capability against SRBM and limited PRBM targets. 								
Aegis BMD supported LDC by providing Long Range Surveillance and Track (LRS&T) data to other elements of the BMDS. Aegis BMD further improved both national and international security with its ability to launch Standard Missile 3 Block IA (SM-3 Blk IA) missiles based upon data received via the Tactical Digital Information Link (TADIL) network in the final Block 2006 configuration, BMD 3.6.								
In Block 2008, Aegis BMD will provide a follow-on capability to BMD 3.6, in response to recent Real World Events. Near-Term SBT (BMD 3.6.1) will provide for an integrated Sea Based Terminal capability against a finite set of Short Range Ballistic Missiles. BMD 3.6.1 will incorporate a fuze modified SM-2 Block IV missile provided by a separate OPNAV sponsored effort and will build on BMD 3.6 to provide a terminal phase capability. The BMD 3.6.1 will continue efforts to refine Aegis Launch on AN/TPY-2 and will bridge the gap between the operational deployment of BMD 3.6 and BMD 4.0.1.								
Aegis BMD will field a near-term Sea-Based Terminal capability beginning in FY 2009. In addition to the near-term SBT capability, Aegis BMD will perform various upgrades to BMD 3.6 in BMD 3.6.1; updates will include early integration efforts for Aegis BMD launch on AN/TPY-2 capability. Funding for this BMD 3.6.1 upgrade comes from a Congressional plus up and sponsorship from the U.S. Navy.								

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis		
<u>B. Accomplishments/Planned Program</u>				
	FY 2006	FY 2007	FY 2008	FY 2009
Weapon System	0	15,000	19,500	2,500
RDT&E Articles (Quantity)	0	0	2	5
<p>In this project, Weapon System funding will focus on the development and deployment of the BMD 3.6.1 computer program</p> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Conduct System Readiness Review and In Process reviews to provide direction to the prime contractor for key decision points. • Complete threat analyses and threat database modifications for the selected threat set. • Complete memory and timing studies for the additional processing requirements. • Begin Element Test and Evaluation (ETE) and Multi-Element Integration Testing (MEIT). <p>FY08 Planned Program:</p> <p>RDT&E Articles: BMD 3.6.1 Computer Program (1), BMD 3.6.1 cruiser (1)</p> <ul style="list-style-type: none"> • Conduct the Test Readiness Review (TRR) for BMD 3.6.1, to ensure modifications meet the Sea-Based Terminal requirements. • Complete ETE and MEIT. • Conduct Engineering Assessment for BMD 3.6.1 upgrades. • Participate in At Sea Flight Test Mission leading to certification in FY 2009. <p>FY09 Planned Program:</p> <p>RDT&E Articles: BMD 3.6.1 DDGs (3) and CGs (2)</p> <ul style="list-style-type: none"> • Certify BMD 3.6.1 for installation and operational use on Aegis BMD cruisers and destroyers. • Begin installations of BMD 3.6.1 on Aegis BMD cruisers and destroyers. • Participate in flight missions, verifying BMD 3.6.1 performance. 				
	FY 2006	FY 2007	FY 2008	FY 2009
Test & Evaluation	0	0	42,500	7,500
RDT&E Articles (Quantity)	0	0	0	0
<p>Test and Evaluation funding supports the analysis and execution of the FTM-15 campaign.</p>				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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FY09 Planned Program:

- Conduct FTM-15 Campaign:
 - Complete pre-flight analysis to verify mission scenarios and to predict flight performance.
 - Prepare and complete missile delivery package for the Mission Control Panel reviews.
 - Conduct a BMD 3.6 engagement and intercept of a Group A SRBM target using the zero pulse TSRM operation in an SM-3 Blk IA missile.
 - Conduct a BMD 3.6.1 engagement and intercept of a FMA SRBM using the near-term SBT functionality with the fuze- modified SM-3 Blk IV missile.
 - Conduct BMD 3.6 multi-warfare environment.
 - Perform post-flight analysis to validate high fidelity models and simulations.
 - Conduct post-flight analysis to support Mission Data Reviews (MDRs). Participate as a sensor element in BMDS missions.

C. Other Program Funding Summary

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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 has awarded sole source contract to Lockheed Martin to continue development of the Aegis BMD Weapon System. The U.S. Navy performing modifications to the 100 SM-2 Blk IV missiles.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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I. Product Development Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System										
	CPAF	Lockheed Martin/NJ	0	13,500	1/2Q	12,650	1Q	1,250	N/A	27,400
	MIPR	NSWCDD/VA	0	500	1Q	3,650	1Q	0	N/A	4,150
	CPFF	JHU/APL/MD	0	500	1Q	930	1Q	1,250	N/A	2,680
	Various	Various	0	500	1/2Q	400	1/2Q	0	4Q	900
	FPI	MDA/VA	0	0	N/A	1,170	1Q	0	N/A	1,170
	MIPR	Aegis Techrep/ NJ	0	0	N/A	700	1Q	0	N/A	700
Subtotal Product Development			0	15,000		19,500		2,500		37,000

Remarks

II. Support Costs Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs										

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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III. Test and Evaluation Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Test & Evaluation										
	MIPR	PMRF/HI	0	0	4Q	4,500	1Q	500	N/A	5,000
	MIPR	NSWC DD/VA	0	0	4Q	6,500	1Q	1,000	N/A	7,500
	CPFF	JHU/APL/MD	0	0	4Q	11,000	1Q	1,500	1Q	12,500
	MIPR	NSWC PHD/CA	0	0	4Q	5,000	1Q	1,000	1Q	6,000
	CPAF	Lockheed Martin/NJ	0	0	4Q	12,000	1Q	2,500	1Q	14,500
	Various	Various	0	0	4Q	950	1Q	400	1Q	1,350
	MIPR	MDA/VA	0	0	4Q	2,550	1Q	600	1Q	3,150
Subtotal Test and Evaluation			0	0		42,500		7,500		50,000

Remarks

IV. Management Services Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

Remarks

Project Total Cost			0	15,000		62,000		10,000		87,000
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDTE&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
BLOCK 2008								
FTM-15				2Q				
BMDS Certification								
3.6.1 Certification				3Q				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
R218 Sea-Based Terminal Block 2014	0	0	13,000	39,000	60,000	65,000	130,000	163,000
RDT&E Articles Qty	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

Block 2014 will provide for an integrated, Far-Term Sea-Based Terminal (SBT) capability, BMD 5.X. Far-Term SBT will expand the near-term Sea Based Terminal capability developed and delivered as a part of Aegis BMD 3.6.1 (Block 2008 - project 0918) to provide a more capable and robust SBT missile defense capability and expand battlespace to enable the system against a greater range of targets. BMD 5.X will be built with the Aegis BMD Weapon System in Open Architecture. Current planning certifies tactical capability in FY14, for inclusion with the U.S. Navy's spiral 6 upgrades.

The weapon system development and deployment effort will be sole source to Lockheed Martin. The missile development work will likely be competed among multiple vendors.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Weapon System	0	0	13,000	29,000
RDT&E Articles (Quantity)	0	0	0	0

This project provides funding for the development of the Far Term Sea Based Terminal effort within Aegis BMD.

FY08 Planned Program:

- Begin SBT weapon system requirements definition - specifications analysis.

FY09 Planned Program:

- Continue SBT weapon system requirements definition - specifications analysis .
- Begin systems engineering of weapon system functionality.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007	
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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	FY 2006	FY 2007	FY 2008	FY 2009
Missiles	0	0	0	10,000
RDT&E Articles (Quantity)	0	0	0	0

This project funds missile development efforts to support Far Term Sea Based Terminal efforts.

FY09 Planned Program:

- Begin missile downselect process.

C. Other Program Funding Summary

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY					R-1 NOMENCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					0603892C Ballistic Missile Defense Aegis				

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

D. Acquisition Strategy

MDA/D recently directed that Aegis BMD initiate the acquisition planning for the Far-Term Sea Based Terminal program. The AWS development and deployment effort will be sole source to Lockheed Martin. The missile development work will likely be competed among multiple vendors.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System										
Weapon System	C/CPAF	Lockheed Martin/NJ	0	0	4Q	10,220	1Q	24,000	1Q	34,220
Weapon System	C/CPFF	JHU/APL/MD	0	0	4Q	1,000	1Q	2,000	1Q	3,000
Weapon System	MIPR	NSWC/DD/VA	0	0	4Q	1,000	1Q	1,260	1Q	2,260
Weapon System	MIPR	MDA/VA	0	0	4Q	780	1Q	1,740	1/2Q	2,520
Missiles										
Missile	C/CPAF	Raytheon/ Various	0	0	N/A	0	N/A	7,000	1Q	7,000
Missile	MIPR	NSWC/DD/VA	0	0	N/A	0	N/A	1,000	1/2Q	1,000
Missile	C/CPAF	JHU/APL/MD	0	0	N/A	0	N/A	1,400	1/2Q	1,400
Missile	MIPR	MDA/VA	0	0	N/A	0	N/A	600	1Q	600
Subtotal Product Development			0	0		13,000		39,000		52,000

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs										

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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III. Test and Evaluation Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										

Remarks

IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

Remarks

Project Total Cost			0	0		13,000		39,000		52,000
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Milestones																																				
Requirements Analysis									△	—	—	—	△																							
Missile Down Select													△	—	—	△																				
Flight Tests																																				
Far-Term SBT Campaign 1																																				
Far-Term SBT Campaign 2																																				

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲—▲	Complete Activity	▲—▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestones								
Requirements Analysis			1Q-4Q	1Q-2Q				
Missile Down Select				3Q-4Q	1Q-2Q			
Flight Tests								
Far-Term SBT Campaign 1							4Q	
Far-Term SBT Campaign 2								3Q

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2007		
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APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603892C Ballistic Missile Defense Aegis				

COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0402 Japanese Cooperative Program	34,792	50,606	74,400	134,900	206,200	221,500	193,700	127,000
RDT&E Articles Qty	1	0	0	0	2	2	2	2

Note: RDT&E Article for FY06: One (1) SM-3 missile. FY10: SM-3 Blk IIA propulsion test vehicles (2). FY11: SM-3 Blk IIA propulsion test vehicles (2). FY12: SM-3 Blk IIA control test vehicle (1), SM-3 Blk IIA guided test vehicle (1). FY13: SM-3 Blk IIA guided test vehicle (1), SM-3 Blk IIA missile (1).

A. Mission Description and Budget Item Justification

The U.S./Japan Joint Cooperative Research (JCR) program conducted cooperative research in Ballistic Missile Defense. The research focused on the development of advanced missile technologies in four components of the SM-3 guided missile: sensor, advanced kinetic warhead, second stage propulsion and lightweight nosecone. In FY06, the JCR project concluded with the flight testing of the lightweight nosecone in Joint Control Test Vehicle-1 (JCTV-1).

In addition, the U.S. and Japan have a mutual interest in the evolutionary development of improvements to the Standard Missile-3 (SM-3). In FY06 the two countries signed a Memorandum of Understanding (MOU) for the co-development of an upgraded, 21-inch diameter SM-3 missile (SM-3 Blk IIA). The objective of the SM-3 Cooperative Development (SCD) project is the development and initial at-sea flight test of the SM-3 Blk IIA missile. The SM-3 Blk IIA missile development will build upon established joint research investments by both the U.S. and Japan. The analysis approaches, system trade methodologies, and BMD system performance established in the U.S./Japan BMD Joint Analysis (JAWS) completed in March 2005 are the foundation for developing the SM-3 Blk IIA missile. Key technology improvements over the current SM-3 Blk IA missile planned for the SM-3 Blk IIA missile include a significant increase in velocity and range provided by a 21-inch diameter rocket motor propulsion stack, and increased seeker sensitivity and divert capability incorporated in an advanced kinetic warhead. 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 U.S. and Japan will equitably share both work and cost.

The Scope of Work of the SCD project will be conducted through a three-phased engineering approach, which completes by 2014. Phase I consists of requirements definition for the SM-3 Blk IIA missile configuration, concurrent with initial risk reduction efforts related to the 21-inch propulsion components, lightweight nosecone, advanced seeker, larger Divert and Attitude Control System (DACS), and preliminary test plans. Also in Phase I,

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
<p>information exchange related to production and maintenance of the SM-3 Blk IIA missile will be initiated. Upon completion of requirements definition, a schedule for development and testing, and work share and cost share for development and testing will be refined. Phase II will define the performance allocation and component configuration for the development and testing of the SM-3 Blk II missile; Phase III will define the performance allocation and component configuration for the development and testing of the SM-3 Blk IIA missile.</p> <p>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.</p> <p>The SCD project will:</p> <ul style="list-style-type: none">• Develop components for the SM-3 Blk IIA missile and integrate them into an All Up Round (AUR)<ul style="list-style-type: none">○ 21`` 2nd and 3rd stage components:<ul style="list-style-type: none">▪ 21`` nosecone▪ Advanced kinetic warhead▪ Advanced Seeker▪ Improved Large Diameter Divert and Attitude Control System• Modify the Aegis Weapon System to exploit the capability of the SM-3 Blk II/IIA missile and use of threat track data from BMDS sensors.• Integrate the SM-3 Blk IIA missile and VLS with Aegis ship systems<ul style="list-style-type: none">○ Includes development of a light weight VLS canister• Conduct test and evaluation using ground and flight tests<ul style="list-style-type: none">○ SM-3 Blk IIA missile○ Aegis BMD ship systems○ Aegis BMD weapon systems		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis		
B. Accomplishments/Planned Program				
	FY 2006	FY 2007	FY 2008	FY 2009
Japanese Cooperative Research	22,792	0	0	0
RDT&E Articles (Quantity)	1	0	0	0
<p>FY06 Accomplishments: RDT&E Articles: SM-3 Missile (1)</p> <ul style="list-style-type: none"> • Conducted a Critical Design review (CDR) of the SM-3 missile for use in JCTV-1 PoP flight test. • Delivered one (1) SM-3 missile for use in JCTV-1 flight test. • Conducted JCTV-1 Proof-of-Principle (PoP) flight test. • Conducted analysis of JCTV-1 PoP flight test. • Completed hazard assessment and insensitive munitions testing of JDA rocket motors. • Completed system engineering support for JDA design and development of second stage propulsion, QWIP seeker, lightweight nosecone and SDACS valve and thruster components. 				
	FY 2006	FY 2007	FY 2008	FY 2009
SM-3 Blk IIA Development (SCD) - Weapon System	0	0	14,300	38,100
RDT&E Articles (Quantity)	0	0	0	0
<p>Weapon System efforts within this project are centered on AWS modifications necessary to test the SM-3 Blk IIA missile.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Conduct a System Design Review (SDR) for the SCD effort. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Conduct a Preliminary Design Review (PDR) for the SCD effort. • Begin test planning for Propulsion Test Vehicle (PTV)-1 and PTV-2. 				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification			Date February 2007	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLATURE		
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		0603892C Ballistic Missile Defense Aegis		
	FY 2006	FY 2007	FY 2008	FY 2009
SM-3 Blk IIA Development - Missile	12,000	50,606	60,100	96,800
RDT&E Articles (Quantity)	0	0	0	0
<p>This project funds the development of the SM-3 Blk IIA missile. The SM-3 Blk IIA is a 21-inch diameter missile.</p> <p>FY06 Accomplishments:</p> <ul style="list-style-type: none"> • Initiated requirements definition for the SM-3 Blk IIA missile configurations. • Performed risk reduction efforts related to the 21-inch missile components, advanced seeker, and DACS. <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Initiate Phase I of the SM-3 Cooperative Development project. • Conduct a System Concept Review for the SM-3 Blk IIA missile. • Conduct a System Requirements Review for the SM-3 Blk IIA missile. • Continue risk reduction efforts related to the 21-inch missile components, seeker, and DACS. • Continue risk reduction efforts related to the 21-inch missile components, seeker, and DACS. • Prepare preliminary test plans for the SM-3 Blk IIA missile. • Initiate information exchange with Japan related to the production and maintenance of the SM-3 Blk IIA missile. • Initiate Aegis Weapon System design studies for the SM-3 Blk IIA missile effort. <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Participate in the System Design Review (SDR) for the SCD effort. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Participate in the Preliminary Design Review (PDR) for the SCD effort. • Begin test planning for Propulsion Test Vehicle (PTV)-1: prepare target, develop models and simulations, and ready the range for test. • Begin test planning for PTV-2: prepare target, develop models and simulations, and ready the range for test. 				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
C. Other Program Funding Summary									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	

D. Acquisition Strategy

The SM-3 Cooperative 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 Control Test Vehicle (CTV) and Guidance Test Vehicle (GTV) flight test article performance. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts for U. S. Navy work and events.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis							Date February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis					
I. Product Development Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Japanese Cooperative Research										
JCR	SS/CPAF	Raytheon/AZ	88,351	0	N/A	0	N/A	0	N/A	88,351
JCR	SS/CPAF	Lockheed Martin/NJ	21,073	0	N/A	0	N/A	0	N/A	21,073
JCR		Various	353	0	N/A	0	N/A	0	N/A	353
SM-3 Blk IIA Development (SCD) - Weapon System										
SCD	CPAF	Lockheed Martin/NJ	2,000	0	N/A	11,150	1Q	30,860	1Q	44,010
SCD	CPFF	JHU/APL/MD	2,000	0	N/A	1,130	1Q	2,350	1Q	5,480
SCD	MIPR	NSCW/DD/VA	2,000	0	N/A	350	1Q	1,220	1Q	3,570
SCD		MIT/MA	1,000	0	N/A	1,550	1Q	2,700	1Q	5,250
SCD	Various	Various	1,500	0	N/A	120	1/2Q	420	1/2Q	2,040
	MIPR	Techrep/NJ	0	0	N/A	0	N/A	550	1Q	550
SM-3 Blk IIA Development - Missile										
	SS/CPAF	Raytheon/AZ	2,000	47,900	1Q	51,085	1Q	82,280	1Q	183,265
	MIPR	NSWC DD/VA	0	0	N/A	2,000	1Q	3,500	1Q	5,500
	CPFF	JHU/APL/MD	0	0	N/A	2,500	1Q	4,000	1Q	6,500
		MIT/MA	0	0	N/A	1,000	1Q	1,500	1Q	2,500
	MIPR	NSWC PHD/CA	0	0	N/A	2,500	1Q	3,500	1Q	6,000
	MIPR	NSWC IH/MD	0	0	N/A	1,015	1Q	2,020	1Q	3,035
	MIPR	MDA/VA	0	2,706	1Q	0	N/A	0	N/A	2,706
Subtotal Product Development			120,277	50,606		74,400		134,900		380,183
Remarks										

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Japanese Cooperative Research										
	SS/CPFF	NSWC/DD/VA	4,812	0	N/A	0	N/A	0	N/A	4,812
	SS/CPFF	NSWC/PHD/CA	895	0	N/A	0	N/A	0	N/A	895
	SS/CPFF	JHU/APL/MD	5,493	0	N/A	0	N/A	0	N/A	5,493
	Various	Various/Various	2,617	0	N/A	0	N/A	0	N/A	2,617
	SS/MIPR	NAWC/CL/CA	725	0	N/A	0	N/A	0	N/A	725
	SS/MIPR	ANTEON/VA	5,307	0	N/A	0	N/A	0	N/A	5,307
	SS/CPFF	PARADIGM/VA	528	0	N/A	0	N/A	0	N/A	528
		MDA/VA	5,128	0	N/A	0	N/A	0	N/A	5,128
	SS	NAVSEA/DC	1,756	0	N/A	0	N/A	0	N/A	1,756
	SS/CPAF	Lockheed Martin/NJ	3,532	0	N/A	0	N/A	0	N/A	3,532
SM-3 Blk IIA Development (SCD) - Weapon System										
SCD	MIPR	NSWC/DD/VA	250	0	4Q	0	N/A	0	N/A	250
SCD	MIPR	JHU/APL/MD	250	0	4Q	0	N/A	0	N/A	250
SCD		Anteon/VA	500	0	4Q	0	N/A	0	N/A	500
SCD	Various	Various	500	0	4Q	0	N/A	0	N/A	500
Subtotal Support Costs			32,293	0		0		0		32,293

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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III. Test and Evaluation Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Japanese Cooperative Research										
Test & Evaluation	MIPR	PMRF/HI	190	0	N/A	0	N/A	0	N/A	190
	MIPR	NSWC/PHD/CA	1,159	0	N/A	0	N/A	0	N/A	1,159
	MIPR	NAWC/PM/CA	610	0	N/A	0	N/A	0	N/A	610
	MIPR	NSWC/Corona/CA	735	0	N/A	0	N/A	0	N/A	735
	MIPR	NSWC/DD/VA	368	0	N/A	0	N/A	0	N/A	368
	SS/CPFF	JHU/APL/MD	260	0	N/A	0	N/A	0	N/A	260
	Various	Various	401	0	N/A	0	N/A	0	N/A	401
	MIPR	NAWC/CL	750	0	N/A	0	N/A	0	N/A	750
	MIPR	Kirtland AFB	2,249	0	N/A	0	N/A	0	N/A	2,249
Subtotal Test and Evaluation			6,722	0		0		0		6,722

Remarks

IV. Management Services Cost (\$ in Thousands)										
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award/ Oblg Date	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services										

Remarks

Project Total Cost			159,292	50,606		74,400		134,900		419,198
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Japan Cooperative Research Project																																
Proof of Principle System CDR	▲																															
JCTV-1		▲																														
JCTV-1 Mission Data Review			▲																													
Flight Tests																																
PTV-1															Δ																	
PTV-2																	Δ															
PTV-3																			Δ													
PTV-4																					Δ											
SM-3 Blk IIA Development Milestones																																
SM-3 Blk IIA System Concept Review				▲																												
SM-3 Blk IIA System Requirements Review								Δ																								
SM-3 Blk IIA System Design Review										Δ																						
SM-3 Blk II Preliminary Design Review															Δ																	

Legend			
▲	Significant Event (complete)	▲	Significant Event (planned)
★	Milestone Decision (complete)	★	Milestone Decision (planned)
◆	Element Test (complete)	◆	Element Test (planned)
▼	System Level Test (complete)	▼	System Level Test (planned)
▲	Complete Activity	▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Japan Cooperative Research Project								
Proof of Principle System CDR	1Q							
JCTV-1	2Q							
JCTV-1 Mission Data Review	3Q							
Flight Tests								
PTV-1				4Q				
PTV-2					4Q			
PTV-3						2Q		
PTV-4						4Q		
SM-3 Blk IIA Development Milestones								
SM-3 Blk IIA System Concept Review	4Q							
SM-3 Blk IIA System Requirements Review		4Q						
SM-3 Blk IIA System Design Review			3Q					
SM-3 Blk II Preliminary Design Review				3Q				
SM-3 Blk IIA System Design Review 2					2Q			
SM-3 Blk IIA Critical Design Review					3Q			
SM-3 Blk IIA Preliminary Design Review						3Q		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis
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COST (\$ in Thousands)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0602 Program-Wide Support	19,108	14,029	15,014	16,892	21,964	12,058	11,266	11,366
RDT&E Articles Qty	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program such as strategic planning, program integration, business management, cost estimating, contracting, and financial management, to include preparation of financial statements, reimbursement of financial services provided by DFAS, internal review and audit, earned-value management, and program assessment. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Many of these costs reside within the Missile Defense Agency Executing Agents in the Services: Army Space and Missile Defense Command, Army PEO Space and Missile Defense, Office of Naval Research, and various Air Force laboratory and acquisition activities, although some functions and costs within this program element are performed by MDA employees assigned within the National Capital Region (NCR). Other costs included herein provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuation on a limited number of foreign contracts.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Civilian Salaries and Support	19,108	14,029	15,014	16,892
RDT&E Articles (Quantity)	0	0	0	0

See Section A: Mission Description and Budget Item Justification

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis				
C. Other Program Funding Summary									
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603175C Ballistic Missile Defense Technology	147,270	193,307	118,569	109,540	116,014	121,008	127,917	131,291	1,064,916
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,120,879	1,092,076	962,585	1,004,282	924,101	851,213	678,694	501,147	7,134,977
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,391,246	3,043,058	2,520,064	2,359,665	2,179,602	1,699,963	1,153,082	1,183,003	16,529,683
PE 0603883C Ballistic Missile Defense Boost Defense Segment	455,572	628,958	548,759	432,432	448,375	678,913	829,683	1,026,239	5,048,931
PE 0603884C Ballistic Missile Defense Sensors	284,297	514,129	778,163	984,963	939,417	791,701	723,843	603,585	5,620,098
PE 0603886C Ballistic Missile Defense System Interceptors	200,446	356,004	227,499	393,317	522,388	730,236	836,029	570,206	3,836,125
PE 0603888C Ballistic Missile Defense Test and Targets	610,619	601,782	586,150	628,364	662,984	681,511	696,037	705,210	5,172,657
PE 0603889C Ballistic Missile Defense Products	387,402	0	0	0	0	0	0	0	387,402
PE 0603890C Ballistic Missile Defense System Core	409,993	429,420	482,016	511,147	558,746	579,571	579,316	588,481	4,138,690
PE 0603891C Special Programs - MDA	271,021	353,031	323,250	305,409	369,073	526,966	789,017	792,271	3,730,038
PE 0603893C Space Tracking & Surveillance System	220,048	322,220	331,525	347,811	412,623	501,197	778,067	981,424	3,894,915
PE 0603894C Multiple Kill Vehicle	48,370	144,362	271,151	352,741	461,179	618,263	673,477	842,905	3,412,448
PE 0603895C BMD System Space Program	0	0	27,666	35,093	46,849	56,183	133,617	157,117	456,525
PE 0603896C BMD C2BMC	0	246,852	258,913	294,627	300,847	282,615	267,275	269,420	1,920,549
PE 0603897C BMD Hercules	0	49,674	53,658	54,264	54,405	55,142	53,355	54,198	374,696
PE 0603898C BMD Joint Warfighter Support	0	54,935	48,787	50,428	54,086	56,603	58,890	60,206	383,935
PE 0603904C BMD Joint National Integration Center (JNIC)	0	110,629	104,012	106,985	111,542	111,947	113,592	115,287	773,994
PE 0603905C BMD Concurrent Test and Operations	0	23,159	0	0	0	0	0	0	23,159
PE 0603906C Regarding Trench	0	0	2,000	3,000	5,000	5,000	9,000	9,000	33,000
PE 0605502C Small Business Innovative Research - MDA	133,105	0	0	0	0	0	0	0	133,105
PE 0901585C Pentagon Reservation	14,874	15,527	6,058	6,376	4,490	4,725	4,801	4,877	61,728
PE 0901598C Management Headquarters - MDA	98,609	87,059	85,906	86,453	70,355	69,855	69,855	69,855	637,947

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	

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