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Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification	Date February 2008
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542
0709 AEGIS Block 2004 Test Bed	21,600	0	0	0	0	0	0
0809 AEGIS BMD Block 2006	393,471	0	0	0	0	0	0
0909 AEGIS BMD Block 2008	573,874	0	0	0	0	0	0
0009 AEGIS BMD Block 2010	38,243	0	0	0	0	0	0
R109 AEGIS BMD Block 2012	8,220	0	0	0	0	0	0
BX09 AEGIS BMD Block 2.0	0	295,736	202,151	151,255	14,991	12,903	12,903
EX09 AEGIS BMD Block 5.0	0	597,990	644,206	651,171	596,260	498,345	441,785
XX09 AEGIS BMD Sustainment	0	43,800	42,501	45,772	31,166	30,571	29,280
0918 Sea-Based Terminal Block 2008	28,000	0	0	0	0	0	0
BX18 Sea-Based Terminal BMD Block 2.0	0	71,414	19,858	3,098	1,191	0	0
WX18 Far Term Sea Based Terminal Capability Development	0	13,000	38,909	49,645	44,665	163,770	176,669
0402 Japanese Cooperative Program	47,900	0	0	0	0	0	0
WX09 Japanese Cooperative Capability Development	0	89,383	179,742	290,224	359,409	330,121	409,019
0602 Program-Wide Support	14,118	0	0	0	0	0	0
ZX40 Program-Wide Support	0	15,014	30,416	43,055	30,857	31,002	32,886
Amount Included in PE 0904903D				-191,169	-79,823	-29,285	-29,753
Total PE Cost	1,125,426	1,126,337	1,157,783	1,043,051	998,716	1,037,427	1,072,789

Note: The content previously planned in project 0709 for FY 08-13 has been moved to project BX09, in accordance with the Missile Defense Agency revised Block structure.

The content previously planned in project 0809 for FY 08-13 has been moved to projects BX09, EX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

The content previously planned in project 0909 for FY 08-13 has been moved to projects BX09, EX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

The content previously planned in project 0918 for FY 08-13 has been moved to project BX18, in accordance with the Missile Defense Agency revised Block structure.

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The content previously planned in project 0009 for FY 08-13 has been moved to projects EX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

The content previously planned in project R109 for FY 08-13 has been moved to projects EX09, WX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

The content previously planned in project R218 for FY 08-13 has been moved to project WX18, in accordance with the Missile Defense Agency revised Block structure.

The content previously planned in project 0402 for FY 08-13 has been moved to project WX09, in accordance with the Missile Defense Agency revised Block structure.

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).

In support of Block 1.0 objectives to defend the U.S. from limited long-range threats, Aegis BMD provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS against Ballistic Missile threats of all ranges, supporting GMD engagements.

In support of Block 2.0 objectives to defend allies and deployed forces from short- to medium-range threats in one region or theater, Aegis BMD provides initial engagement capability against SRBM to MRBM-class threats. Aegis BMD is fielding the Block 2.0 capability in two spirals: The first spiral provides an initial engagement capability against SRBMs and MRBMs on Aegis BMD cruisers with the BMD 3.0 Weapon System and SM-3 Block I missile that can be used for emergency activation; Spiral two provides an operationally certified LRS&T and engagement capability on

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<p>Aegis BMD cruisers and destroyers configured with the BMD 3.6 Weapon System which is capable of firing SM-3 Block I and IA missiles using organic and external sensors.</p> <p>In response to Real World Events, Aegis BMD is developing and fielding an integrated near-term Sea Based Terminal (SBT) capability against a finite set of Short Range Ballistic Missiles, also as part of BMDS Block 2.0. 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>In support of Block 5.0 objectives to expand defense of allies and deployed forces from short- to intermediate-range threats in two regions or theaters, Aegis BMD is providing several capabilities: BMD 4.0.1 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 include the Aegis BMD Signal Processor (BSP), and integrate an updated variant of the SM-3 (SM-3 Block IB) to improve overall system performance and discrimination capability. The SM-3 Block 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 at a lower per-unit cost. The initial capability (BMD 4.0) will be delivered with the SM-3 Block IA missile. BMD 4.0.1 will be an operationally certified system firing either the SM-3 Block IA or IB missile.</p> <p>Additionally in support of Block 5.0, Aegis BMD 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 new configuration of the Aegis BMD Weapon System (BMD 5.0) 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 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.</p> <p>Future Capabilities: Aegis BMD and the Japan Defense Agency (JDA) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of a spiral</p>		

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<p>upgrade to the SM-3 Block IB missile - a 21-inch diameter SM-3 missile (SM-3 Block IIA). Missile development will be covered under the SCD project prior to the SM-3 Block IIA incorporation into the BMD 5.1 upgrade to the Aegis Ballistic Missile Defense system. BMD 5.1 will integrate and test the SM-3 Block 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.</p> <p>Additionally, Aegis BMD will provide for a more robust, long-term 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 2.0, Aegis BMD also provided an engagement capability against short to medium range threats (BMD 3.6 and the SM-3 Block IA missile). In Block 5.0, a new fielded configuration will expand both LRS&T and engagement capability to include more complex threats including limited IRBM threats (BMD 4.0.1 and the SM-3 Block IB missile). Block 5.0 will further broaden program application for U.S. and international Aegis ship populations by implementing Open Architecture (BMD 5.0). Aegis BMD will also introduce a near-term Sea-Based Terminal capability (BMD 3.6.1) to engage limited short range threats in the terminal phase of flight. Future capability developments such as the 21-inch diameter currently under development in the SM-3 Cooperative Development (SCD) program with Japan will be integrated with the Aegis BMD Weapon System in Open Architecture in BMD 5.1. This will further expand engagement capability against long-range threats, to include some ICBM-class threats. Another future capability development will introduce a more robust Sea Based Terminal capability.</p> <p>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: 		

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<ul style="list-style-type: none"> ○ Eleven (11) SM-3 Block I missiles ○ One (1) "Pathfinder" SM-3 Block IA Flight Test Round (FTR) ○ One (1) "Pathfinder" SM-3 Block IB Flight Test Round (FTR) ○ Eighty two (82) SM-3 Block IA missiles ○ Fifty two (52) SM-3 Block IB missiles <p><u>A.3 Major System Element Goals</u></p> <ul style="list-style-type: none"> ● Block 2.0: <ul style="list-style-type: none"> ○ BMD 3.6 - Deliver an LRS&T capability against ballistic missile threats of all ranges. Deliver an engagement capability against SRBM to MRBM-class threats. ○ SM-3 Block IA missile. ○ BMD 3.6.1: Introduce a Near-Term Sea Based Terminal capability against SRBMs (with OPNAV-modified SM-2 Block IV missile). ● Block 5.0: <ul style="list-style-type: none"> ○ BMD 4.0.1 - Improve the Weapon System capability to identify and classify Ballistic Missile threat objects from debris and other components: Aegis BSP. 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. ○ SM-3 Block IB - 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). ○ BMD 5.0 - 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. ● Future Capability Developments: <ul style="list-style-type: none"> ○ SCD - Initiate U.S./Japan SM-3 Cooperative Development (SCD) of the SM-3 Block IIA Missile (21-inch diameter SM-3 missile). ○ BMD 5.1 - Increase battlespace: SM-3 Block IIA integration into the Aegis BMD Weapon System, Engage on Remote, improved feature-aided track correlation, and improved BMDS sensor data fusion. ○ BMD 5.X - Introduce a more robust Sea Based Terminal capability. 		

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A.4 Major Events Schedule and Description			
Major Event	Project	Timeframe	Description
Flight Tests			
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 Block IA missile, and a BQM-74 aerial target using an SM-2 Block 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 Block IA missile, and a BQM-74 aerial target using an SM-2 Block 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 Block IA missile.
FTM-13	BX09	1Q FY 2008	<ul style="list-style-type: none"> Detection, track and engagement of two simultaneous SRBMs.
FTM-14	BX09	3Q FY 2008	<ul style="list-style-type: none"> Launch on TADIL (LOT) engagement of group F Intermediate Range Ballistic Missile target.
FTM-15	BX09	2Q FY 2009	<ul style="list-style-type: none"> Conduct a Launch on TADIL (Aegis to Aegis) flight test against a Group F target.
FTM-14	BX18	3Q FY 2008	<ul style="list-style-type: none"> Flight testing of the BMD 3.6.1 (Near term SBT) computer program with a Navy-developed SM-2 Block IV fuze-modified missile againsta Foreign Military Acquisition (FMA) target).
FTM-16	EX09	4Q FY 2010	<ul style="list-style-type: none"> 1st flight test of SM-3 Block IB missile against a group B Medium range Ballistic Missile target.
FTM-17	EX09	3Q FY 2011	<ul style="list-style-type: none"> BMD 4.0.1 engagement with SM-3 Block IB against a group c target.
FTM-18	EX09	3Q FY 2012	<ul style="list-style-type: none"> BMD 4.0.1 engagement against a group C target with an SM-3 Block IB missile.
FTM-19	EX09	3Q FY 2013	<ul style="list-style-type: none"> BMD 5.0 engagement against a group C target with an SM-3 Block IB missile.
Critical Design Review			
Development Milestones			
BMD 3.6.1 Engineering Assessment (EA)	BX18	2Q FY 2008	<ul style="list-style-type: none"> Conduct Engineering Assessment for the BMD 3.6.1 computer program update, to include a Near Term Sea-Based Terminal capability.
BMD 3.6.1 Certification	BX18	1Q FY 2009	<ul style="list-style-type: none"> Certification of BMD 3.6.1 computer program.
BMD 5.0 System Design Review	EX09	1Q FY 2008	<ul style="list-style-type: none"> Conduct System Design Review for the BMD 5.0 computer program with Open Architecture.
BMD 4.0.1 Critical Design Review (CDR)	EX09	4Q FY 2008	<ul style="list-style-type: none"> Conduct a Critical Design Review of the BMD 4.0.1 computer program.
BMD 4.0.1 Engineering Assessment	EX09	1Q FY 2009	<ul style="list-style-type: none"> Perform an EA of BMD 4.0.1 program to support At-Sea Testing..
BMD 5.0 Preliminary Design Review	EX09	1Q FY 2009	<ul style="list-style-type: none"> Conduct a PDR of BMD 5.0 with Open Architecture.
BMD 5.0 Critical Design Review	EX09	1Q FY 2010	<ul style="list-style-type: none"> Conduct a CDR of BMD 5.0 with Open Architecture.
BMD 4.0.1 Certification	EX09	2Q FY 2011	<ul style="list-style-type: none"> Certification of BMD 4.0.1 engagement capability with the SM-3 Block IB missile.
BMC 5.0 Demo	EX09	4Q FY 2011	<ul style="list-style-type: none"> Conduct a Demonstration of BMD 5.0 with Open Architecture.
BMD 5.0 Cert	EX09	2Q FY 2012	<ul style="list-style-type: none"> Certification of the BMD 5.0 computer program with Open Architecture.
BMD 5.1 / 5.X System Requirements Review	WX09	1Q FY 2009	<ul style="list-style-type: none"> Conduct an SRR for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X System Design Review	WX09	1Q FY 2010	<ul style="list-style-type: none"> Conduct an SDR for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).

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BMD 4.0.1 ENG REL SDD	WX09	2Q FY 2010	• Condust System Design review of BMD 4.0.1 ENG REL.
BMD 5.1 / 5.X Preliminary Design Review-1	WX09	1Q FY 2011	• Conduct a PDR for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far term SBT).
BMD 4.0.1 ENG REL Engineering Assessment	WX09	1Q FY 2012	• Conduct an Engineering Assessment (EA) of BMD 4.0.1 ENG REL to support flight testing of the SM-3 Block IIA missile.
BMD 5.1 / 5.X Preliminary Design Review-2	WX09	1Q FY 2012	• Conduct a 2nd PDR for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X Critical Design Review	WX09	3Q FY 2013	• Conduct Critical Design Review for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X System Requirements Review	WX18	1Q FY 2009	• Conduct a System Requirements Review (SRR) for BMD 5.1 (SM03 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X System Design Review	WX18	1Q FY 2010	• Conduct a System Design Review (SDR) for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X Preliminary Design Review-1	WX18	1Q FY 2011	• Conduct a Preliminary Design Review (PDR) for BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X Preliminary Design Review-2	WX18	1Q FY 2012	• Conduct a second PDR of BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
BMD 5.1 / 5.X Critical Design Review	WX18	3Q FY 2013	• Conduct a Critical Design Review of BMD 5.1 (SM-3 Block IIA) and BMD 5.X (Far Term SBT).
SM-3 Block IIA Development Milestones			
SM-3 Block IIA System Requirements Review (SRR)	WX09	1Q FY 2008	• Conduct SM-3 Block IIA SRR.
SM-3 Block IIA SRR-2	WX09	3Q FY 2008	• Conduct a second SRR for the SM-3 Block IIA missile configuration.
SM-3 Block IIA System Design Review (SDR)	WX09	1Q FY 2009	• Conduct an SDR for the SM-3 Block IIA missile configuration.
SM-3 Block II Preliminary Design Review	WX09	3Q FY 2010	• Conduct a PDR for the SM-3 Block IIA missile.
SM-3 Block IIA Critical Design Review	WX09	4Q FY 2011	• Conduct a CDR for the SM-3 Block IIA missile configuration.
Other			
Milestones			
Requirements Analysis	WX18	1Q FY 2008 - 2Q FY 2009	
Missile Down Select	WX18	3Q FY 2009 - 2Q FY 2010	

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B. Program Change Summary	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008 PB)	1,122,669	1,059,103	1,129,425
Current President's Budget (FY 2009 PB)	1,125,426	1,126,337	1,157,783
Total Adjustments	2,757	67,234	28,358
Congressional Specific Program Adjustments	0	75,000	0
Congressional Undistributed Adjustments	0	-7,766	0
Reprogrammings	20,175	0	0
SBIR/STTR Transfer	-17,418	0	0
Adjustments to Budget Years	0	0	28,358

FY07 increase of \$2.757 million includes SBIR/STTR transfer and MDA reprogrammings.

FY08 increase of \$67.234 million includes a Congressionally specific program increase of \$75 million and a portion of the MDA Congressional undistributed reduction.

FY09 increase of \$28.358 million reflects MDA programmatic changes to support program requirements.

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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0709 AEGIS Block 2004 Test Bed	21,600	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content previously planned in project 0709 for FY 08-13 has been moved to project BX09, in accordance with the Missile Defense Agency revised Block structure.

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 Block 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;

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<ul style="list-style-type: none"> • A preliminary engagement capability (BMD 3.0 with SM-3 Block I) for test bed operations and for emergency use, if required; and • An operationally certified BMD capability that combines the engagement capability with the LRS&T capability (BMD 3.6 with SM-3 Block I and IA). The final Block 2004 is fully compliant with the Element Capability Specification. <p>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.</p> <p><u>B. Accomplishments/Planned Program</u></p> <table border="1"> <thead> <tr> <th></th> <th align="center">FY 2007</th> <th align="center">FY 2008</th> <th align="center">FY 2009</th> </tr> </thead> <tbody> <tr> <td>Weapon System Engineering</td> <td align="right">7,900</td> <td align="right">0</td> <td align="right">0</td> </tr> <tr> <td>RDT&E Articles (Quantity)</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> </tr> </tbody> </table> <p>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.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Performed post-flight test analyses for FTM-10 and FTM-11. • Performed pre-mission analysis and work-up support for FTM-11 fourth objective. <table border="1"> <thead> <tr> <th></th> <th align="center">FY 2007</th> <th align="center">FY 2008</th> <th align="center">FY 2009</th> </tr> </thead> <tbody> <tr> <td>SM-3 Missile</td> <td align="right">13,700</td> <td align="right">0</td> <td align="right">0</td> </tr> <tr> <td>RDT&E Articles (Quantity)</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> </tr> </tbody> </table> <p>Aegis BMD Block 2004 provides the SM-3 Block I missile that can be used for emergency activation; completed the design efforts of the SM-3 Block IA, and completes component and section level testing of the SM-3 Block IA, and completed initial non-recurring engineering preparation for rate manufacturing of SM-3 components at various manufacturing facilities.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Continued to monitor performance of SM-3 Block IA. • Monitored obsolete material replacement effort. 					FY 2007	FY 2008	FY 2009	Weapon System Engineering	7,900	0	0	RDT&E Articles (Quantity)	0	0	0		FY 2007	FY 2008	FY 2009	SM-3 Missile	13,700	0	0	RDT&E Articles (Quantity)	0	0	0
	FY 2007	FY 2008	FY 2009																								
Weapon System Engineering	7,900	0	0																								
RDT&E Articles (Quantity)	0	0	0																								
	FY 2007	FY 2008	FY 2009																								
SM-3 Missile	13,700	0	0																								
RDT&E Articles (Quantity)	0	0	0																								

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- Development activities for the next spiral upgrade were identified in Block 2006.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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.

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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				
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Engineering								
AWS	SS/CPIF	Lock Martin/NJ	394,005	0	N/A	0	N/A	394,005
AWS	FFRDC	MIT/LL/MA	5,725	0	N/A	0	N/A	5,725
AWS	SS/CPFF	JHU/APL/MD	8,424	0	N/A	0	N/A	8,424
AWS	MIPR	NSWC/DD/VA	38,686	0	N/A	0	N/A	38,686
AWS	MIPR	MITRE/VA	1,400	0	N/A	0	N/A	1,400
AWS	MIPR	NSWC/PHD/CA	13,824	0	N/A	0	N/A	13,824
AWS		MDA	16,763	0	N/A	0	N/A	16,763
AWS	Various	VARIOUS	21,291	0	N/A	0	N/A	21,291
AWS	MIPR	NAVSEA/VA	2,000	0	N/A	0	N/A	2,000
SM-3 Missile								
MISSILE	SS/CPIF	RAYTHEON/AZ/	745,169	0	N/A	0	N/A	745,169
MISSILE	SS/CPIF	JHU/APL/MD/	26,893	0	N/A	0	N/A	26,893
MISSILE	FFRDC	MIT/LL/MA	1,805	0	N/A	0	N/A	1,805
MISSILE	MIPR	NSWC/DD/VA	20,626	0	N/A	0	N/A	20,626
MISSILE	MIPR	NSWC/PHD/CA/	12,871	0	N/A	0	N/A	12,871
MISSILE	MIPR	WSMR/NM/NM	2,407	0	N/A	0	N/A	2,407
MISSILE	MIPR	NSWC/CD/CA/ MD	6,053	0	N/A	0	N/A	6,053
MISSILE	MIPR	NSWC/IH/MD	5,179	0	N/A	0	N/A	5,179
MISSILE	MIPR	NAWC/CL/CA	2,644	0	N/A	0	N/A	2,644
MISSILE		MDA/VA	25,908	0	N/A	0	N/A	25,908
MISSILE	Various	VARIOUS/ VA/CA/NJ	9,915	0	N/A	0	N/A	9,915
MISSILE	MIPR	NAVSEA	931	0	N/A	0	N/A	931
MISSILE	MIPR	NSWC Corona	627	0	N/A	0	N/A	627
Subtotal Product Development			1,363,146	0		0		1363146

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Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	8,326
	SS/CPAF	Lockheed Martin/ NJ	10,500	0	N/A	0	N/A	10,500
	MIPR	NSWC/DD/VA	15,346	0	N/A	0	N/A	15,346
	MIPR	NSWC/PHD/CA	6,807	0	N/A	0	N/A	6,807
	MIPR	SPAWAR/CA	4,734	0	N/A	0	N/A	4,734
		MDA	2,489	0	N/A	0	N/A	2,489
	MIPR	NAVSEA/DC	3,933	0	N/A	0	N/A	3,933
	MIPR	SupShip Pascagoula/MS	4,635	0	N/A	0	N/A	4,635
	MIPR	SupShip Bath/ME	1,965	0	N/A	0	N/A	1,965
	MIPR	VARIOUS/SSES Philadelphia/ VARIOUS	457	0	N/A	0	N/A	457
Subtotal Support Costs			59,192	0		0		59192

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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 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	26,435
	SS/CPFF	JHU/API/MD	2,834	0	N/A	0	N/A	2,834
	MIPR	NSWC/DD/VA	2,398	0	N/A	0	N/A	2,398
	C/CPFF	Anteon/VA	46,749	0	N/A	0	N/A	46,749
	SS/CPFF	Paradigm/VA	4,175	0	N/A	0	N/A	4,175
	SS/CPAF	Lockheed Martin/ NJ	1,700	0	N/A	0	N/A	1,700
	SS/CPAF	Raytheon/AZ	2,000	0	N/A	0	N/A	2,000
		MDA	14,922	0	N/A	0	N/A	14,922
	Various	Various/Various	8,517	0	N/A	0	N/A	8,517
		MDA (Salaries)	1,763	0	N/A	0	N/A	1,763
Subtotal Management Services			111,493	0		0		111,493

Remarks

Project Total Cost			1,533,831	0		0		1,533,831
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Remarks

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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0809 AEGIS BMD Block 2006	393,471	0	0	0	0	0	0
RDT&E Articles Qty	27	0	0	0	0	0	0

Note: The content previously planned in project 0809 for FY 08-13 has been moved to projects BX09, EX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

RDT&E Articles: FY07 - Twelve (12) SM-3 missiles, five (5) ARAVs, two (2) targets, installation of BMD 3.0E on two (2) DDGs, installation of BMD 3.6 on five (5) DDGs, installation of BMD 3.6 on one (1) CG.

A. Mission Description and Budget Item Justification

Aegis BMD Block 2006 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 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:
 - Enhanced LRS&T capability against Ballistic Missile threats of all ranges through Aegis BMD Signal Processor (BSP) improvements.

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.

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.

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<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> <p>Block 2006 missile efforts focus on testing of the SM-3 Block IA missile with the BMD 3.6 Weapon System and the continued deployment of SM-3 Block IA missiles. Ongoing missile development is listed and described under Block 2008, project 0909.</p> <p>Aegis BMD Block 2006 will:</p> <ul style="list-style-type: none">• Defeat unitary and more complex SRBM and MRBM threats with Aegis BMD configured cruisers, destroyers and Standard Missile-3 (SM-3) Block 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 Block IA missiles. <p>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.</p> <p>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.</p>		

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<u>B. Accomplishments/Planned Program</u>			
	FY 2007	FY 2008	FY 2009
Weapons System Engineering	108,165	0	0
RDT&E Articles (Quantity)	8	0	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.

FY07 Accomplishments:

RDT&E Articles: BMD 3.0E Aegis LRS&T Destroyers (2), BMD 3.6 Aegis Cruiser (1), BMD 3.6 Aegis Engagement Destroyers (5)

- Installed 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).
- Installed BMD 3.6 on one (1) Aegis Cruiser.
- Installed BMD 3.6 (engagement capability) on five (5) Aegis destroyers.
- Continued improvements to ballistic missile tracking, characterization, discrimination, feature extraction, object classification, and kill assessment as a part of the Weapon System development, to include:
 - 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)
- Installed BSP EDM at CSEDS.
- Completed development and testing of the computer program upgrade culminating with an Engineering Evaluation (EE) in CY 2007.
- Continued studies to improve Lethal Object Designation in a cluttered environment.
- Continued At-Sea Testing of BMD 3.6.

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	FY 2007	FY 2008	FY 2009
System Test & Evaluation	76,360	0	0
RDT&E Articles (Quantity)	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>FY07 Accomplishments:</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"> ○ 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. ○ Conducted an ARAV-B simulated engagement to verify BMD 3.6 capability. ○ FTM-11 Event 4 was a no-test, resulting in a re-schedule. • Successfully conducted FTM-11 Event 4 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 Block IA missile, and a BQM-74 aerial target using an SM-2 Block IIIA missile. • Conducted campaign consisting of a Ballistic Missile Tracking Exercise and FTM-12: <ul style="list-style-type: none"> ○ 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. ○ Conducted a BMD 3.6 simulated engagement and intercept of two (2) near simultaneous ARAV-A SRBM targets with two (2) simulated SM-3 Block IA missiles. ○ Conducted 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 Block IA missile. • Continued to test interoperability with other BMDS elements. • Participated in BMDS test to include FTX-02, FTX-03, GT-195, GT-198, FTG-4, FTG-5, FTT-7, and FTT-8 missions. • Began test planning for FTM-13: prepare target, develop models and simulations, and ready the range for a test. • Began test planning for FTM-14; prepare target, develop models and simulations, and ready the range for test. • Conducted critical experiments using the MK-99 Doppler Data Collection System or similar equipment as a risk mitigation for Block 2008 implementation. 			

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	FY 2007	FY 2008	FY 2009
SM-3 Missile	133,596	0	0
RDT&E Articles (Quantity)	12	0	0
<p>During Block 2006 the SM-3 Block IA missiles will be tested, monitored for improvements, and delivered for deployment.</p> <p>FY07 Accomplishments: RDT&E Articles: SM-3 Block IA Missiles (12)</p> <ul style="list-style-type: none"> • Continued assembly and delivery of SM-3 Block IA missiles. <ul style="list-style-type: none"> ○ Delivered twelve (12) SM-3 Block IA missiles • Continued material engineering to monitor parts obsolescence. • Participated in FTM-11 and FTM-12 <ul style="list-style-type: none"> ○ Completed pre-flight analysis to verify scenarios and performance assessment. ○ Prepared and complete 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 Block IA Hardware/Software based on flight results. ○ Expended SM-3 Block IA 2nd Pathfinder in ground test support for TSRM nozzle redesign and SDACs pulse insertion ground test. 			
	FY 2007	FY 2008	FY 2009
SE&I and BMDS Integration	5,000	0	0
RDT&E Articles (Quantity)	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>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Conducted Block 2006 capability integration studies. • Participated in BMDS ESG planning and monitoring. 			

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	FY 2007	FY 2008	FY 2009
Operations & Support/ Fleet Introduction	20,000	0	0
RDT&E Articles (Quantity)	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 Accomplishments:</p> <ul style="list-style-type: none"> • 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. • Provided leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. • Responded to Fleet issues related to Aegis BMD installations, BMD operations and BMD events. 			
	FY 2007	FY 2008	FY 2009
Aegis BMD Fire Control (BMC3)	10,553	0	0
RDT&E Articles (Quantity)	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> <p>FY07 Planned Program:</p> <ul style="list-style-type: none"> • Completed CDLMS upgrades to incorporate: <ul style="list-style-type: none"> ○ Enhanced Launch on TADIL-J design and development to increase the battle space. • Completed implementation of Aegis BMD planning exchange with Joint Defense Planner via Global Command and Control System - Maritime. • Completed definition, planning, and initial implementation of Aegis BMD Link certification requirements. • Continued analyses supporting the migration of Aegis BMD Fire Control (BMC3) architecture into future BMDS networks. 			

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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 2007	FY 2008	FY 2009
Block 2006 Targets	39,797	0	0
RDT&E Articles (Quantity)	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 2007 Planned Program: RDT&E Articles: 2 Targets, 5 ARAVS

- 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

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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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 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	45,865	0	N/A	0	N/A	45,865
	CPFF	JHU/APL/MD	712	0	N/A	0	N/A	712
	MIPR	NSWC/DD/VA	878	0	N/A	0	N/A	878
	MIPR	NSWC/PHD/CA	405	0	N/A	0	N/A	405
	MIPR	SPAWAR/CA	455	0	N/A	0	N/A	455
	FPI	VA Sites/VA	0	0	N/A	0	N/A	
SBAR	SS/CPAF	Lockheed Martin/ NJ	5,150	0	N/A	0	N/A	5,150
Deployment	SS/CPAF	Lockheed Martin/ NJ	37,358	0	N/A	0	N/A	37,358
Deployment	MIPR	NAVSEA/VA	6,330	0	N/A	0	N/A	6,330
Deployment	MIPR	NSWC/DD/VA	6,388	0	N/A	0	N/A	6,388
Deployment	MIPR	NSWC/PHD/CA	10,331	0	N/A	0	N/A	10,331
Deployment	MIPR	SPAWAR/CA	2,800	0	N/A	0	N/A	2,800
Deployment	MIPR	SUPSHIP/BATH/ ME	3,178	0	N/A	0	N/A	3,178
Deployment	FPI	SUPSHIP/PASC/ MS	4,700	0	N/A	0	N/A	4,700
Deployment	Various	Various	4,073	0	N/A	0	N/A	4,073
SBAR	Various	Various	500	0	N/A	0	N/A	500
SM-3 Missile								
Missile	SS/CPIF	Raytheon/AZ	265,799	0	N/A	0	N/A	265,799
Missile	SS/CPIF	JHU/APL/MD	7,091	0	N/A	0	N/A	7,091
Missile	FFRDC	MIT/LL/MA	521	0	N/A	0	N/A	521
Missile	MIPR	NSWC/DD/VA	6,432	0	N/A	0	N/A	6,432

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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Missile	MIPR	NSWC/PHD/CA	2,717	0	N/A	0	N/A	2,717
Missile	MIPR	NAWC/CL/CA	621	0	N/A	0	N/A	621
Missile	MIPR	NSWC/IH/MD	1,021	0	N/A	0	N/A	1,021
Missile	Various	Various/ MD, CA, VA	1,866	0	N/A	0	N/A	1,866
	MIPR	NSWC Corona/CA	549	0	N/A	0	N/A	549
Block 2006 Targets								
	MIPR	MDA/VA	57,821	0	N/A	0	N/A	57,821
Subtotal Product Development			473,561	0		0		473,561

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	5,265	0	N/A	0	N/A	5,265
	SS/MIPR	NSWC/Coronaron /CA	313	0	N/A	0	N/A	313
	SS/CPFF	SEG/VA	4,020	0	N/A	0	N/A	4,020
	Various	VARIOUS/US	525	0	N/A	0	N/A	525
	MIPR	MDA/VA	22,130	0	N/A	0	N/A	22,130
SM-3 Missile								
	MIPR	NSWC/DD/VA	1,465	0	N/A	0	N/A	1,465
	MIPR	JHU/APL/MD	1,500	0	N/A	0	N/A	1,500
		MIT/LL/MA	200	0	N/A	0	N/A	200

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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				
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
	MIPR	NSWC/CD/MD	909	0	N/A	0	N/A	909
	MIPR	NAVSEA/VA	1,484	0	N/A	0	N/A	1,484
	Various	Various	1,123	0	N/A	0	N/A	1,123
	MIPR	MDA/VA	29,447	0	N/A	0	N/A	29,447
SE&I and BMDS Integration								
	MIPR	JHU/APL/MD	595	0	N/A	0	N/A	595
	MIPR	NSWC Corona/CA	705	0	N/A	0	N/A	705
	MIPR	NSWC DD/VA	5,241	0	N/A	0	N/A	5,241
	MIPR	NSWC PHD/CA	1,240	0	N/A	0	N/A	1,240
	Various	Various	714	0	N/A	0	N/A	714
Operations & Support/ Fleet Introduction								
Weapon System	MIPR	JHU/APL/MD	450	0	N/A	0	N/A	450
Weapon System	MIPR	CSCS (ATRC)/VA	1,975	0	N/A	0	N/A	1,975
Weapon System	MIPR	NSWC Corona/CA	1,060	0	N/A	0	N/A	1,060
Weapon System	MIPR	NSWC/DD/VA	795	0	N/A	0	N/A	795
Weapon System	MIPR	NSWC/PHD/CA	3,881	0	N/A	0	N/A	3,881
Weapon System	Various	Various	839	0	N/A	0	N/A	839
Weapon System	CPAF	Lockheed Martin/ NJ	11,000	0	N/A	0	N/A	11,000
Aegis BMD Fire Control (BMC3)								
	MIPR	JHU/APL/MD	3,665	0	N/A	0	N/A	3,665
	FPI	MIT/LL/MA	1,526	0	N/A	0	N/A	1,526
		MITRE	996	0	N/A	0	N/A	996
	MIPR	NSWC PHD/CA	1,512	0	N/A	0	N/A	1,512
	MIPR	SPAWAR/CA	10,456	0	N/A	0	N/A	10,456
	Various	Various	998	0	N/A	0	N/A	998
Subtotal Support Costs			116,029	0		0		116,029

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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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Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	20,060	0	N/A	0	N/A	20,060
Test & Eval	MIPR	SMDC/AL	5,600	0	N/A	0	N/A	5,600
Test & Eval	MIPR	NSWC/DD/VA	16,800	0	N/A	0	N/A	16,800
Test & Eval	SS/CPFF	JHU/APL/MD	25,900	0	N/A	0	N/A	25,900
Test & Eval		NAWC/WPNS	7,600	0	N/A	0	N/A	7,600
Test & Eval	MIPR	NSWC/PHD/CA	9,900	0	N/A	0	N/A	9,900
Test & Eval	MIPR	MIT/LL/MD	2,200	0	N/A	0	N/A	2,200
Test & Eval	MIPR	AIRPAC/HI	2,500	0	N/A	0	N/A	2,500
Test & Eval	MIPR	SPAWAR/CA	5,300	0	N/A	0	N/A	5,300
Test & Eval	Various	Various	7,200	0	N/A	0	N/A	7,200
Test & Eval	MIPR	WSMR/CA	1,500	0	N/A	0	N/A	1,500
	MIPR	NSWC/Corona/CA	5,700	0	N/A	0	N/A	5,700
		Raytheon/AZ	5,300	0	N/A	0	N/A	5,300
		Lockheed Martin/ NJ	31,200	0	N/A	0	N/A	31,200
		MDA/VA	9,000	0	N/A	0	N/A	9,000
Subtotal Test and Evaluation			155,760	0		0		155760

Remarks

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IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapons System Engineering								
	MIPR	NAVSEA	27,734	0	N/A	0	N/A	27,734
	C/CPFF	Anteon/VA	63,066	0	N/A	0	N/A	63,066
	C/CPFF	Paradigm/VA	3,388	0	N/A	0	N/A	3,388
	SS/CPFF	JHU/APL/MD	3,849	0	N/A	0	N/A	3,849
	SS/CPAF	Raytheon/AZ	2,542	0	N/A	0	N/A	2,542
	SS/CPAF	Lockheed Martin/ NJ	2,500	0	N/A	0	N/A	2,500
	MIPR	NSWC/DD/VA	4,136	0	N/A	0	N/A	4,136
	Various	Various	4,543	0	N/A	0	N/A	4,543
	CPFF	Gryphon/MD	2,000	0	N/A	0	N/A	2,000
Subtotal Management Services			113,758	0		0		113758

Remarks

Project Total Cost			859,108	0		0		859,108
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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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	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
Manufacturing Processes and Advanced Materials																												
BSP Engineering Development Model (CSEDS)			▲																									
Development Milestones																												
BMD 4.0.1 Preliminary Design Review 1	▲																											
BMD 4.0 Critical Design Review			▲																									
BMD 4.0.1 System Design Review			▲																									
Flight Tests																												
FTM-11	▲																											
FTM-11 4th Objective			▲																									
FTM-12			▲																									

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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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 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							
BMD 4.0.1 Preliminary Design Review 1	1Q						
BMD 4.0 Critical Design Review	3Q						
BMD 4.0.1 System Design Review	3Q						
Flight Tests							
FTM-11	1Q						
FTM-11A	2Q						
FTM-11 4th Objective	3Q						
FTM-12	3Q						

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0909 AEGIS BMD Block 2008	573,874	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content previously planned in project 0909 for FY 08-13 has been moved to projects BX09, EX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

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 Block IA missile (SM-3 Block 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 Block 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 Block IA missiles. Additionally, the increased processing capability of the ASP will support new discrimination algorithms. The optics and processing improvements will enhance the Aegis BMD contribution to the BMDS

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<p>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.</p> <p>Aegis BMD Block 2008 will deliver in two spirals:</p> <ul style="list-style-type: none">• Spiral one (BMD 4.0) will deliver an initial testbed system capability with the SM-3 Block 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 Block IA or IB missile. <p>Other Block 2008 capability enhancements include:</p> <ul style="list-style-type: none">• 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. <p>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).</p>		

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B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Weapon System	241,498	0	0
RDT&E Articles (Quantity)	0	0	0

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.

FY07 Accomplishments:

- Supported the MDA System Engineering's Update of the Test Bed System Specification (TBSS) to reflect Block 2008 requirements.
- Updated the Block 2008 Element Capability Specification (ECS) based on the approved TBSS.
- Conducted the BMD 4.0.1 System Design Review (SDR), based on the updated ECS, to present Block 2008 requirements.
- Conducted the Preliminary Design Review (PDR) to review and gain approval for the contractor's approach to meeting Block 2008 requirements.
- Completed work to improve Lethal Object Designation in a cluttered environment.
- Conducted critical experiments using Aegis BMD Signal Processor ADM equipment.
- Conducted studies on RF/IR sensor fusion for a Block 2008 implementation.

	FY 2007	FY 2008	FY 2009
SM-3 Missile	329,936	0	0
RDT&E Articles (Quantity)	0	0	0

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 Block IA missiles for deployment, and begin delivery of SM-3 Block IB missiles for testing and deployment.

FY07 Accomplishments:

- Continued SM-3 Block IB All Reflective Optics (ARO) engineering for improved missile discrimination capabilities.
- Continued SM-3 Block IB Advanced Signal Processor (ASP) design efforts for improved missile discrimination.
- Continued testing of SM-3 Block IB two-color seeker upgrade.
- Continued SM-3 Block IB TDACS development.

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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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- Produced initial SM-3 Block IB ASP proof-of-design units.
- Completed SM-3 Block IB IR discrimination risk reduction and algorithm development.
- Upgraded SM-3 Block IA Inert Operational Missile to SM-3 Block IB configuration to validate interface integrity within the missile and across weapon system interfaces.
- Continued fabrication of SM-3 Block IA missiles for delivery beginning in FY08, and begin fabrication of FY09 deliveries.

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

FY07 Accomplishments:

- Continued incorporation of CDLMS upgrades, including:
 - Interoperability improvements to support Long Range Surveillance and Track
 - Enhanced Launch on TADIL support
 - Engagement Coordination
- Continued definition, planning, and implementation of the Defense Information Infrastructure Common Operating Environment (DIICOE) compliant Aegis BMD multi-ship mission planner.
- Continued development of enhanced discrimination algorithms to improve support for Long Range Surveillance and Track and Engagement missions.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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 2008		
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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System								
	SS/CPAF	Lockheed Martin/ NJ	262,655	0	N/A	0	N/A	262,655
	MIPR	NSWC/DD/VA	6,680	0	N/A	0	N/A	6,680
	MIPR	NSWC/PHD/CA	5,851	0	N/A	0	N/A	5,851
	MIPR	JHU/APL/MD	9,072	0	N/A	0	N/A	9,072
	MIPR	SPAWAR/CA	6,945	0	N/A	0	N/A	6,945
	MIPR	Va Sites/VA	5,555	0	N/A	0	N/A	5,555
SM-3 Missile								
		Raytheon/AZ	455,189	0	N/A	0	N/A	455,189
	MIPR	NSWC DD/VA	7,061	0	N/A	0	N/A	7,061
	MIPR	JHU/APL/MD	8,164	0	N/A	0	N/A	8,164
	MIPR	NSWC/CR/MD	2,184	0	N/A	0	N/A	2,184
	MIPR	NSWC/CL/CA	2,350	0	N/A	0	N/A	2,350
	MIPR	NSWC/IH/MD	3,576	0	N/A	0	N/A	3,576
	MIPR	NSWC Corona/CA	3,564	0	N/A	0	N/A	3,564
	MIPR	MIT/LL/MA	4,204	0	N/A	0	N/A	4,204
	MIPR	NSWC/PHD/CA	3,534	0	N/A	0	N/A	3,534
	Various	Various	5,336	0	N/A	0	N/A	5,336
Aegis BMD Fire Control (BMC3)								
	CPFF	JHU/APL/MD	457	0	N/A	0	N/A	457
	FPI	MIT/MA	490	0	N/A	0	N/A	490
		MITRE	330	0	N/A	0	N/A	330
	MIPR	NSWC PHD/CA	483	0	N/A	0	N/A	483
	MIPR	SPAWAR/CA	329	0	N/A	0	N/A	329
	Various	Various	351	0	N/A	0	N/A	351
Subtotal Product Development			794,360	0		0		794360

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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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Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System								
	MIPR	ATRC/VA	650	0	N/A	0	N/A	650
	CPFF	SEG/MD	3,575	0	N/A	0	N/A	3,575
	FFRDC	MIT/LL/MA	5,005	0	N/A	0	N/A	5,005
	FFRDC	MITRE/VA	325	0	N/A	0	N/A	325
	MIPR	NSWC/Corona/CA	163	0	N/A	0	N/A	163
		Various	1,880	0	N/A	0	N/A	1,880
	MIPR	MDA/VA	15,300	0	N/A	0	N/A	15,300
SM-3 Missile								
	MIPR	NSWC DD/VA	1,500	0	N/A	0	N/A	1,500
	MIPR	JHU/APL/MD	2,000	0	N/A	0	N/A	2,000
	FPI	MIT/LL/MA	100	0	N/A	0	N/A	100
	MIPR	NSWC/CD/MD	471	0	N/A	0	N/A	471
	MIPR	NAVSEA/VA	838	0	N/A	0	N/A	838
	Various	Various	129	0	N/A	0	N/A	129
	MIPR	MDA/VA	15,482	0	N/A	0	N/A	15,482
Subtotal Support Costs			47,418	0		0		47418

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			841,778	0		0		841,778
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Remarks

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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	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
Development Milestones																												
BMD 4.0/4.0.1 Development	▲				▲				▲																			
BMD 4.0.1 Preliminary Design Review 1	▲																											
BMD 4.0.1 In-Process Review			▲																									

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 2008	
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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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Schedule Profile	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			
BMD 4.0.1 Preliminary Design Review 1	1Q						
BMD 4.0.1 In-Process Review	3Q						

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0009 AEGIS BMD Block 2010	38,243	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content previously planned in project 0009 for FY 08-13 has been moved to projects EX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

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 Block 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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<p>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.</p> <p>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).</p>			
<u>B. Accomplishments/Planned Program</u>			
	FY 2007	FY 2008	FY 2009
Weapon System Engineering	14,243	0	0
RDT&E Articles (Quantity)	0	0	0
<p>For Block 2010, Aegis BMD began performance and threat analysis in FY07.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Performed preliminary analysis in support of Engineering Capability Specification (ECS) development. <ul style="list-style-type: none"> ○ Evaluated U.S. Navy Open Architecture computer program code. ○ Reviewed U.S. Navy cruiser modernization and destroyer modernization hardware suites for future incorporation of Aegis BMD Block 2010 computer programs. ○ Began drafting Block 2010 ECS. • Successfully conducted Block 2010 System Readiness Review (SRR) - Mar 07. • Began preparations for Block 2010 System Design Review (SDR) - Dec 08. 			
	FY 2007	FY 2008	FY 2009
SM-3 Missile	24,000	0	0
RDT&E Articles (Quantity)	0	0	0
<p>Aegis BMD Block 2010 will continue the procurement of SM-3 Block IB missiles.</p>			

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FY07 Accomplishments:

- Procured Long Lead Material for SM-3 Block IB missiles with delivery in FY10.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	12,070	0	N/A	0	N/A	12,070
	MIPR	NSWC DD/VA	800	0	N/A	0	N/A	800
	CPFF	JHU/APL/MD	750	0	N/A	0	N/A	750
	CPFF	MIT/MA	400	0	N/A	0	N/A	400
	CPAF	VA Sites/VA	100	0	N/A	0	N/A	100
	Various	Various	123	0	N/A	0	N/A	123
SM-3 Missile								
	CPAF	Raytheon/AZ	24,000	0	N/A	0	N/A	24,000
Subtotal Product Development			38,243	0		0		38243

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
SM-3 Missile								
	MIPR	MDA/VA	2,161	0	N/A	0	N/A	2,161
Subtotal Support Costs			2,161	0		0		2161

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			40,404	0		0		40,404
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Remarks

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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	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				
Acquisition Milestones																																
Block 10 System Readiness Review (SRR)		▲																														

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 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Acquisition Milestones							
Block 10 System Readiness Review (SRR)	2Q						

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
R109 AEGIS BMD Block 2012	8,220	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content previously planned in project R109 for FY 08-13 has been moved to projects EX09, WX09 and XX09, in accordance with the Missile Defense Agency revised Block structure.

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 Block 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 Block 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 Block IIA missile. Other Aegis BMD Block 2012 improvements include:

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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 Block IIA configuration are captured under project 0402, Japanese Cooperative Program. This project includes incorporation of the SM-3 Block 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 2007	FY 2008	FY 2009
Weapon System Engineering	8,220	0	0
RDT&E Articles (Quantity)	0	0	0

Block 2012 will integrate SM-3 Block 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 Accomplishments:

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

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C. Other Program Funding Summary								
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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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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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Weapon System Engineering								
	CPAF	Lockheed Martin/ NJ	6,000	0	N/A	0	N/A	6,000
	CPAF	JHU/APL/MD	500	0	N/A	0	N/A	500
	MIPR	NSWCDD/VA	500	0	N/A	0	N/A	500
	MIPR	SPAWAR/CA	500	0	N/A	0	N/A	500
	MIPR	VA Sites/VA	400	0	N/A	0	N/A	400
	Various	Various	784	0	N/A	0	N/A	784
Subtotal Product Development			8,684	0		0		8684

Remarks

II. Support Costs Cost (\$ in Thousands)

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

Remarks

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

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

Remarks

Project Total Cost			8,684	0		0		8,684
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Remarks

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
BX09 AEGIS BMD Block 2.0	0	295,736	202,151	151,255	14,991	12,903	12,903
RDT&E Articles Qty	0	35	15	17	0	0	0

Note: The content in project BX09 is a continuation of the efforts reported in projects 0709 and 0809 and was explained in those projects in PB08.

RDT&E Articles: FY08 - Twenty (20) SM-3 Block IA missiles, nine (9) BMD 3.6 DDGs, two (2) targets, four (4) ARAVs. FY09 - Ten (10) SM-3 Block IA missiles, three (3) targets, two (2) ARAVs. FY10 - Seventeen (17) SM-3 Block IA missiles.

A. Mission Description and Budget Item Justification

Aegis BMD supports the BMDS Block 2.0 with the BMD 3.6 Combat System, comprised of the BMD 3.6 computer systems coupled with the SM-3 Block IA missile, and with BMD 3.6.1, an upgrade to BMD 3.6 that includes a terminal phase capability. BMD 3.6.1 will be fully discussed in project BX18.

Aegis BMD 3.6 and 3.6.1 support 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 (BMD 3.6);
 - Engagement capability against missile threats in the midcourse flight stage (BMD 3.6);
 - Engagement capability against missile threats in the terminal phase of flight (BMD 3.6.1).
- Against all ranges:
 - Against long-range ballistic missiles by providing surveillance and tracking support as part of the Limited Defensive Capability (LDC) (Block 1.0).
 - Against short and medium range ballistic missiles by providing engagement support as part of BMD 3.6 and BMD 3.6.1.

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 BMD 3.6 program will:

- Defeat 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 Block I or IA guided missiles.

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<ul style="list-style-type: none">• Provide 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.• Provide Aegis BMD surveillance and track data to the BMDS to support Combatant Commander situational awareness.• Expand the engagement battle space by using remote (Aegis AN/SPY-1) sensor data delivered via the TADIL-J network.• Supply Aegis BMD operational data to the BMDS C2BMC Element to support Combatant Commander situational awareness.• Provide an operational, engagement-capable system. <p>The BMD 3.6 computer program will be fielded on a total of eighteen (18) U.S. Navy Aegis Cruisers and Destroyers, along with SM-3 Block IA missiles.</p> <p>With BMD 3.6.1, Aegis BMD will provide a follow-on capability to BMD 3.6 in response to recent Real World Events. Near-Term Sea Based Terminal (BMD 3.6.1) will provide for an integrated 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 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.</p> <p>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.</p> <p>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. BMD 3.6 and BMD 3.6.1 support 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.</p>		

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<u>B. Accomplishments/Planned Program</u>			
	FY 2007	FY 2008	FY 2009
BMD 3.6 Weapon System Development	0	13,077	0
RDT&E Articles (Quantity)	0	0	0
<p>The Weapon System Engineering team will continue to support flight testing of BMD 3.6, and address engineering issues with the computer program.</p> <p>FY08 Accomplishments/Planned Program:</p> <ul style="list-style-type: none"> • Participated in FTM-13. • Participate in on-going testing: FTM-14, TOO tests. • Continue to monitor for obsolescence issues. 			
	FY 2007	FY 2008	FY 2009
SM-3 Missile Development	0	3,523	0
RDT&E Articles (Quantity)	0	0	0
<p>In FY08, Aegis BMD will finalize remaining development issues with the SM-3 Block IA missile, while transferring efforts to development of the SM-3 Block IB.</p> <p>FY08 Accomplishments/Planned Program:</p> <ul style="list-style-type: none"> • Participated in FTM-13. • Continue material engineering to monitor parts obsolescence. 			
	FY 2007	FY 2008	FY 2009
Aegis BMD Testing	0	74,700	68,949
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides funding for Aegis BMD test and evaluation missions, as well as other system-wide BMDS tests to support the development of the BMDS.</p> <p>FY08 Accomplishments/Planned Program:</p> <ul style="list-style-type: none"> • Conducted FTM-13 Campaign: <ul style="list-style-type: none"> ○ Completed pre-flight analysis to verify mission scenarios and to predict flight performance. 			

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<ul style="list-style-type: none">○ Prepared and completed missile delivery package for the Mission Control Panel reviews.○ Conducted a simultaneous launch of two (2) ARAV-A targets for BMD 3.6 engagement with two (2) SM-3 Block IA missiles.○ Performed post-flight analysis to validate high fidelity models and simulations.○ Conducted post-flight analysis to support Weapon System Performance Reviews (WSPRs).● Conduct FTM-14 (full write up in project BX18, Near Term Sea-Based Terminal).● Participate as a sensor element in BMDS tests to include FTG-4, FTG-5, FTT-9, and FTT-10 missions.● Participate in GT-197 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. <p>FY09 Planned Program:</p> <ul style="list-style-type: none">● Conduct FTM-15 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 Launch on TADIL engagement and intercept of a Group F IRBM target with a SM-3 Block IA missile.○ Perform post-flight analysis to validate high fidelity models and simulations.○ Conduct post-flight analysis to support WSPRs. (MDRs). Participate as a sensor element in BMDS missions.● Conduct 4.0.1 At-Sea Demonstration<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 4.0.1 (CG) simulated engagements of ARAV-B and ARAV-C targets.○ Perform post-flight analysis to validate high fidelity models and simulations.○ Conduct post-flight analysis to support WSPRs.● Begin test planning for FTM-16: prepare target, develop models and simulations, and ready the range for test.		

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	FY 2007	FY 2008	FY 2009
Targets	0	66,799	39,164
RDT&E Articles (Quantity)	0	6	5
<p>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, as well as other system wide tests to support the development of the Ballistic Missile Defense System.</p> <p>FY 2008 Planned Program: RDT&E Articles: 2 Targets, 4 ARAVs</p> <ul style="list-style-type: none"> • 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 EX18) 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. <p>FY 2009 Planned Program: RDT&E Articles: 3 Targets, 2 ARAVs</p> <ul style="list-style-type: none"> • Presentation of a SRBM/MBRV-3 target in support of FTM-15 SBT (project EX18) • Presentation of a ARAV-A/NOSE in support of FTM-15 (project EX18) • 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. 			

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	FY 2007	FY 2008	FY 2009
SE&I and BMDS Integration	0	6,337	3,475
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides funding to work in collaboration with the BMDS System Engineer to develop requirements flowdown for Aegis BMD 3.6 and 4.0.1 and participate in definition of appropriate Engagement Sequence Groups to best utilize Aegis BMD capability in the overall BMDS.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Support system integration efforts with other BMDS elements to reflect the overall BMDS. • Support the MDA System Engineering's Update of the Test Bed System Specification (TBSS) to reflect BMD 4.0.1 and BMDS requirements. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Support system integration efforts with other BMDS elements to reflect the overall BMDS. • Support the MDA System Engineering's Update of the Test Bed System Specification (TBSS) to reflect BMD 4.0.1 and BMDS requirements. 			
	FY 2007	FY 2008	FY 2009
BMC3	0	15,700	12,906
RDT&E Articles (Quantity)	0	0	0
<p>This effort provides funding for BMC3 improvements, including establishment of alternate BMD data paths and enhancements, supporting increased interoperability with other BMDS elements.</p> <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 risk reduction activities. <p>FY09 Planned Program:</p> <p>Complete CDLMS upgrades to incorporate:</p>			

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<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. 			
	FY 2007	FY 2008	FY 2009
BMD Weapon System Fielding	0	23,200	4,988
RDT&E Articles (Quantity)	0	9	0
<p>This effort provides funding for the continued fielding of BMD 3.6 shipsets.</p> <p>FY08 Planned Program: RDT&E Articles: Nine (9) BMD 3.6 DDG shipset deliveries</p> <ul style="list-style-type: none"> ● Install BMD 3.6 computer program on nine (9) U.S. Navy destroyers to provide BMD 3.6 LRS&T and engagement capability. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> ● Complete checkout and evaluation of BMD 3.6 ship installs. ● Continue to monitor BMD 3.6 performance. 			
	FY 2007	FY 2008	FY 2009
SM-3 Block IA Fielding	0	92,400	72,669
RDT&E Articles (Quantity)	0	20	10
<p>This effort provides funding for the procurement of additional SM-3 Block IA missiles.</p> <p>FY08 Planned Program: RDT&E Articles: Twenty (20) SM-3 Block IA Missiles</p> <ul style="list-style-type: none"> ● Deliver twenty (20) SM-3 Block IA missiles. ● Continue procurement of twenty seven (27) SM-3 Block IA missiles. <p>FY09 Planned Program: RDT&E Articles: Ten (10) SM-3 Block IA Missiles</p> <ul style="list-style-type: none"> ● Deliver ten (10) SM-3 Block IA missiles. ● Continue procurement of remaining seventeen (17) SM-3 Block IA missiles. 			

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PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
BMD 3.6 Weapon System Development								
	SS/CPAF	Lockheed Martin/ NJ	0	5,025	1Q	0	N/A	5,025
	MIPR	NSWC/DD/VA	0	7,227	1Q	0	N/A	7,227
	FPI	VA Sites/VA	0	825	1Q	0	N/A	825
SM-3 Missile Development								
		Raytheon/AZ	0	1,000	1Q	0	N/A	1,000
	MIPR	NSWC/DD/VA	0	1,000	1Q	0	N/A	1,000
	MIPR	JHU/APL/MD	0	1,000	1Q	0	N/A	1,000
	MIPR	Various	0	523	1/3Q	0	N/A	523
SE&I and BMDS Integration								
	CPFF	JHU/APL/MD	0	422	1Q	235	1Q	657
	MIPR	NSWC/Corona/CA	0	510	1Q	279	1Q	789
	MIPR	NSWC/DD/VA	0	3,775	1Q	2,045	1Q	5,820
	MIPR	NSWC/PHD/CA	0	840	1Q	488	1Q	1,328
	Various	Various	0	790	1/2Q	428	1/2Q	1,218
BMC3								
	CPFF	JHU/APL/MD	0	2,650	1Q	2,646	1Q	5,296
	FPI	MIT/MA	0	1,845	1Q	845	1Q	2,690
		MITRE	0	772	1Q	672	1Q	1,444
	MIPR	NSWC/PHD/CA	0	934	1Q	834	1Q	1,768
	MIPR	SPAWAR/CA	0	7,742	1Q	7,152	1Q	14,894
	Various	Various	0	1,757	1/2Q	757	1/2Q	2,514
BMD Weapon System Fielding								

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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
	SS/CPAF	Lockheed Martin/NJ	0	11,193	1/2Q	2,445	1Q	13,638
	MIPR	NAVSEA/VA	0	2,139	1/2Q	420	1Q	2,559
	MIPR	NSWC/DD/VA	0	2,152	1/2Q	424	1Q	2,576
	MIPR	NSWC PHD/CA	0	3,149	1/2Q	687	1Q	3,836
	MIPR	SPAWAR/CA	0	937	1/2Q	186	1Q	1,123
	MIPR	SUPSHIP/BATH/ME	0	922	1/2Q	211	1Q	1,133
	FPI	SUPSHIP/MS	0	1,368	1/2Q	312	1Q	1,680
	Various		0	1,340	1/2Q	303	1/3Q	1,643
SM-3 Block IA Fielding								
	SS/CPIF	Raytheon/AZ	0	55,960	1Q	55,469	1Q	111,429
	SS/CPIF	JHU/APL/MD	0	10,876	1Q	4,400	1Q	15,276
	FFRDC	MIT/LL/MA	0	11,050	1Q	800	1Q	11,850
	MIPR	NSWC/DD/VA	0	6,867	1Q	4,800	1Q	11,667
	MIPR	NSWC/PHD/CA	0	2,697	1Q	2,000	1Q	4,697
	MIPR	NAWC/CL/CA	0	1,100	1Q	800	1Q	1,900
	MIPR	NSWC/IH/MD	0	1,100	1Q	800	1Q	1,900
	Various	Various	0	2,200	1Q	3,200	1Q	5,400
	MIPR	NSWC/Corona/CA	0	550	1Q	400	1Q	950
Subtotal Product Development			0	154,237		94,038		248275
Remarks								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Aegis BMD Testing								
	MIPR	PMRF/HI	0	4,000	1Q	4,000	1Q	8,000
	MIPR	SMDC/AL	0	1,500	1Q	1,500	1Q	3,000
	MIPR	NSWC/DD/VA	0	5,000	1Q	5,000	1Q	10,000
	CPFF	JHU/APL/MD	0	9,000	1Q	7,967	1Q	16,967
	CPAF	Lockheed Martin/ NJ	0	11,433	1Q	8,750	1Q	20,183
	MIPR	NSWC/PHD/CA	0	3,500	1Q	3,500	1Q	7,000
	CPFF	MIT/LL/MA	0	2,500	1Q	2,500	1Q	5,000
	MIPR	AIRPAC/HI	0	1,500	1Q	1,500	1Q	3,000
	MIPR	SPAWAR/CA	0	2,500	1Q	2,500	1Q	5,000
	Various	Various	0	12,467	1Q	9,732	1Q	22,199
Targets								
		MDA/VA	0	66,799	N/A	39,164	N/A	105,963
Subtotal Test and Evaluation			0	120,199		86,113		206312

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
SM-3 Missile Development								
Aegis BMD Testing								
	CPFF	General Dynamics/ NJ	0	11,050	1Q	7,650	1Q	18,700
	CPFF	Paradigm/VA	0	500	1Q	500	1Q	1,000
	CPFF	Gryphon/MD	0	500	1Q	500	1Q	1,000
	CPAF	Lockheed Martin/ NJ	0	250	1Q	500	1Q	750
	CPAF	Raytheon/AZ	0	250	1Q	500	1Q	750
	MIPR	NAVSEA/DC	0	2,300	1Q	2,500	1Q	4,800
	MIPR	MDA/VA	0	6,450	1/2Q	9,850	1Q	16,300
Subtotal Management Services			0	21,300		22,000		43300

Remarks

Project Total Cost			0	295,736		202,151		497,887
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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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	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				
Flight Tests																																
FTM-13					▲																											
FTM-14							△																									
FTM-15											△																					
BMD 4.0.1 At-Sea Demo (ASD)											△																					
Fielding Deliveries/Ships																																
BMD 3.6 Fielding (DDGs and CGs)					△	—	—	△																								
Fielding Deliveries/Missiles																																
SM-3 Blk IA Deliveries					△	—	—	—	—	—	△																					

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-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Flight Tests							
FTM-13		1Q					
FTM-14		3Q					
FTM-15			2Q				
BMD 4.0.1 At-Sea Demo (ASD)			3Q				
Fielding Deliveries/Ships							
BMD 3.6 Fielding (DDGs and CGs)		1Q-4Q	1Q				
Fielding Deliveries/Missiles							
SM-3 Block IA Deliveries		1Q-4Q	1Q-4Q	1Q-2Q			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008			
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
EX09 AEGIS BMD Block 5.0		0	597,990	644,206	651,171	596,260	498,345	441,785
RDT&E Articles Qty		0	0	2	11	33	23	17
<p><i>Note: The content in project EX09 is a continuation of the efforts reported in projects 0809, 0909, and 0009 and was explained in those projects in PB08.</i></p> <p><i>RDT&E Articles: FY09 - BMD 4.0.1 Testbed computer program (1), one (1) BMD 4.0.1 Cruiser (EDM). FY10 - Nine (9) SM-3 Block IA missiles, one (1) Pathfinder SM-3 Block IB missile, upgraded EDM of BMD 4.0.1 computer program with BSP (1). FY11 - Fourteen (14) SM-3 Block IA missiles, Eighteen (18) SM-3 Block IB missiles, one (1) BMD 4.0.1 CG with BSP. FY12 - Twenty-one (21) SM-3 Block IB missiles, two (2) BMD 4.0.1 DDGs with BSP. FY13 - Thirteen (13) SM-3 Block IB missiles, two (2) BMD 4.0.1 DDGs with BSP, two (2) BMD 5.0 (Open Architecture) DDGs.</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>Aegis BMD program development in Block 5.0 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 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 stages; engagement capability against missile threats in the midcourse and terminal stages. • Against all ranges: <ul style="list-style-type: none"> ○ LRS&T capability against ballistic missile threats of all ranges ○ Enhanced engagement capability (BMD 4.0.1 and the SM-3 Block IB missile): battlespace expanded to include Intermediate-Range Ballistic Missile (IRBM)-class threats <p>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 Block IA missile (SM-3 Block IB), Aegis BMD will improve discrimination capability and performance against more diverse and longer range threats.</p>								

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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	
<p>The BMD 4.0.1 Combat System will expand Aegis BMD effectiveness against the threat base. It will provide a full upgrade to the Aegis BMD Weapon System (BMD 4.0.1) and an upgraded SM-3 missile, SM-3 Block IB.</p> <p>Missile Upgrades for the SM-3 Block IB 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) to mitigate diminished manufacturing source issues in SM-3 Block IA missiles. Additionally, the increased processing capability of the ASP will 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.</p> <p>BMD 4.0.1 will deliver in two spirals:</p> <ul style="list-style-type: none">• Spiral one (BMD 4.0.1 Testbed) will deliver an initial engagement system capability with the SM-3 Block IA missile. It will build on 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 Block IA or IB missile. <p>Other capability enhancements include:</p> <ul style="list-style-type: none">• 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. <p>BMD 5.0 will integrate BMD 4.0.1 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.</p>		

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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 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).

MDA and US Northern Command recognize that the Continental United States remains vulnerable to the potential threat of a missile launched from ships off the East Coast. Initiated in FY06, the Department of Defense conducted a comprehensive study, led by MDA, NORTHCOM and STRATCOM of the threat, and the architectural engineering and operational implications for defending against such threat. Building upon previous activities, which include multiple tests of the Passive Coherent Locator and Over the Horizon Radars, this analysis and an Operator-in-the-Loop (OITL) exercise will enable understanding our current abilities in, and potential requirements for, surveillance, detection, attribution, threat identification and characterization, tracking and engagement as well as kill assessment and population defense.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
BMD 4.0.1 Weapon System Development	0	263,332	241,310
RDT&E Articles (Quantity)	0	0	1

The Aegis BMD Weapon System Engineering group will develop BMD 4.0.1 to provide an operationally-certified system with significant improvements in discrimination capability, configured to operate with either the SM-3 Block IA or IB.

FY08 Planned Program:

- Continue development of BMD 4.0.1 Testbed, leading to an Engineering Assessment in FY09.
- Conduct the BMD 4.0.1 Critical Design Review (CDR), to review the contractor's design to meet engineering requirements and approval to proceed with MEIT leading to a BMD 4.0.1 demonstration and certification.

FY09 Planned Program: RDT&E Articles: BMD 4.0.1 Testbed Computer Program (1)

- Conduct BMD 4.0.1 Testbed Engineering Assessment
- Complete development of BSP Engineering Development Model (EDM).
- Support FTM-16, using BMD 4.0.1 Testbed and the BSP EDM.

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<ul style="list-style-type: none"> Continue development and testing of BMD 4.0.1, leading to an Engineering Assessment in FY10. 			
	FY 2007	FY 2008	FY 2009
BMD 5.0 Weapon System Development	0	68,359	59,980
RDT&E Articles (Quantity)	0	0	0
<p>The Aegis BMD Weapon System Development team will develop BMD 5.0 to integrate BMD capability into the U.S. Navy's modernization program and Open Architecture configuration.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> Complete BMD 5.0 ECS. Conduct BMD 5.0 System Requirements Review (SRR). Draft BMD 5.0 A-Spec, System B-1 & B-2 Specs. Conduct BMD 5.0 System Design Review (SDR). <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> Draft System B-5 Specs (some in Unified Modeling Language), update A-Spec & B-1s from SDR. Conduct BMD 5.0 Preliminary Design Review (PDR), to review and gain approval for the contractor's approach to meeting the BMD 5.0 requirements. 			
	FY 2007	FY 2008	FY 2009
SM-3 Block IB Development	0	231,299	141,688
RDT&E Articles (Quantity)	0	0	0
<p>In FY08 and FY09, Aegis BMD will continue the development of the SM-3 Block IB missile. SM-3 Block IB 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).</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> Continue SM-3 Block IB All-Reflective Optics (ARO) engineering for improved missile discrimination capabilities. Continue SM-3 Block IB Advanced Signal Processor (ASP) design efforts for improved missile discrimination. 			

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<ul style="list-style-type: none"> • Conduct testing of SM-3 Block IB two-color seeker upgrade. • Continue SM-3 Block IB TDACS development. • Conduct SM-3 Block IB CDR (4Q FY08). <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Complete SM-3 Block IB All-Reflective Optics (ARO) engineering for improved missile discrimination capabilities. • Complete SM-3 Block IB Advanced Signal Processor (ASP) design efforts for improved missile discrimination. • Complete testing of SM-3 Block IB two-color seeker upgrade. • Complete SM-3 Block IB TDACS development. • Begin element integration of the SM-3 Block IB missile. • Begin acquisition of one (1) SM-3 Block IB Pathfinder round. 			
	FY 2007	FY 2008	FY 2009
Flight Testing	0	0	8,935
RDT&E Articles (Quantity)	0	0	0
<p>This task provides funding for Aegis BMD flight testing, as well as Aegis BMD participation in BMDS-level testing.</p> <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Participate in BMD 4.0.1 At-Sea Demo (funded in project BX09). • Participate in selected BMDS tests, per guidance in the BMDS Integrated Master Test Plan (IMTP). 			
	FY 2007	FY 2008	FY 2009
BMD 4.0.1 Fielding	0	0	61,742
RDT&E Articles (Quantity)	0	0	1
<p>This project funds the installation of the BMD 4.0.1 computer program on U.S. Navy Cruisers and destroyers.</p> <p>FY09 Planned Program: RDT&E Articles: One (1) BMD 4.0.1 EDM installation on a CG.</p> <ul style="list-style-type: none"> • Install BMD 4.0.1 Engineering Development Model (EDM) to support flight testing. • Begin procurement of BMD 4.0.1 suites, to include BMD Signal Processor (BSP) units. 			

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	FY 2007	FY 2008	FY 2009
SM-3 Block IA Missile Fielding	0	20,000	57,085
RDT&E Articles (Quantity)	0	0	0
FY08 Planned Program: <ul style="list-style-type: none"> • Begin procurement of twenty three (23) SM-3 Block IA missiles. FY09 Planned Program: <ul style="list-style-type: none"> • Continue procurement of twenty three (23) SM-3 Block IA missiles. 			
	FY 2007	FY 2008	FY 2009
SM-3 Block IB Missile Fielding	0	5,000	73,466
RDT&E Articles (Quantity)	0	0	0
This activity initiates purchase of SM-3 Block IB missiles for the purposes of flight testing and delivery to the fleet as operational assets. FY08 Planned Program: <ul style="list-style-type: none"> • Begin long lead funding for twenty four (24) SM-3 Block IB missiles. FY09 Planned Program: <ul style="list-style-type: none"> • Begin procurement of twenty four (24) SM-3 Block IB missiles. 			
	FY 2007	FY 2008	FY 2009
Asymmetric Threat Initiative	0	10,000	0
RDT&E Articles (Quantity)	0	0	0
FY08 Planned Program: <ul style="list-style-type: none"> • Conduct Experiments, develop prototypes, and recommend deployment options for an integrated asymmetric missile defense capability. • Perform more detailed analysis of options/needs for wide area surveillance, combat identification and command and control, battle management and communications. • Develop a recommended architecture for homeland asymmetric missile defense to include progressions for spiral technology upgrades that would enhance missile defense capabilities over time. • Report on the results of efforts to date along with a recommended plan for further development, to include recommended knowledge points to guide further investments in this critical capability. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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	

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 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
BMD 4.0.1 Weapon System Development								
	SS/CPAF	Lockheed Martin/ NJ	0	180,386	1Q	161,833	1Q	342,219
	MIPR	NSWC/DD/VA	0	15,576	1Q	13,828	1Q	29,404
	MIPR	NSWC/PHD/CA	0	4,322	1Q	2,148	1Q	6,470
	MIPR	JHU/APL/MD	0	6,546	1Q	3,895	1Q	10,441
	MIPR	SPAWAR/CA	0	2,629	1Q	1,289	1Q	3,918
	MIPR	VA Sites/VA	0	5,080	1Q	3,008	1Q	8,088
	Various	Various	0	4,972	1/2Q	2,259	1Q	7,231
	MIPR	Aegis Techrep/NJ	0	2,095	1Q	957	1Q	3,052
BMD 5.0 Weapon System Development								
	CPAF	Lockheed Martin/ NJ	0	47,622	1Q	36,707	1Q	84,329
	MIPR	NSWC/DD/VA	0	3,063	1Q	3,555	1Q	6,618
	CPFF	JHU/APL/MD	0	3,042	1Q	3,516	1Q	6,558
	CPFF	MIT/LL/MA	0	2,022	1Q	996	1Q	3,018
	CPAF	VA Sites/VA	0	1,394	1Q	934	1Q	2,328
	Various	Various	0	466	1Q	449	1Q	915
	MIPR	Aegis Techrep/NJ	0	957	1Q	703	1Q	1,660
SM-3 Block IB Development								
	CPAF	Raytheon/AZ	0	162,584	1/2Q	91,187	1Q	253,771
	MIPR	NSWC DD/VA	0	6,500	1/2Q	4,123	1Q	10,623
	MIPR	JHU/APL/MD	0	6,500	1Q	4,321	1Q	10,821
	MIPR	NSWC/CR/MD	0	1,900	1/2Q	997	1Q	2,897
	MIPR	NSWC/CL/CA	0	1,850	1Q	997	1/2Q	2,847

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
	MIPR	NSWC IH/MD	0	2,800	1Q	1,888	1Q	4,688
	MIPR	NSWC Corona/CA	0	2,800	1Q	1,888	1Q	4,688
	MIPR	MIT/LL/MA	0	3,600	1/2Q	2,410	1Q	6,010
	MIPR	NSWC/PHD/CA	0	1,850	1Q	997	1Q	2,847
	Various	Various	0	2,100	1/3Q	1,888	1/3Q	3,988
BMD 4.0.1 Fielding								
	SS/CPAF	Lockheed Martin/ NJ	0	0	N/A	30,260	1Q	30,260
	MIPR	NAVSEA/VA	0	0	N/A	5,203	1Q	5,203
	MIPR	NSWC/DD/VA	0	0	N/A	5,251	1Q	5,251
	MIPR	NSWC PHD/CA	0	0	N/A	8,492	1Q	8,492
	MIPR	SPAWAR/CA	0	0	N/A	2,302	1Q	2,302
	MIPR	SUPSHIP/BATH/ ME	0	0	N/A	2,612	1Q	2,612
	FPI	SUPSHIP/PASC/ MS	0	0	N/A	3,863	1Q	3,863
	Various	Various	0	0	N/A	3,759	1Q	3,759
SM-3 Block IA Missile Fielding								
	CPAF	Raytheon/AZ	0	16,800	1Q	50,638	1Q	67,438
	MIPR	NSWC/IH/MD	0	800	1Q	765	1Q	1,565
	MIPR	NSWC/DD/VA	0	800	1Q	1,277	1Q	2,077
	MIPR	NSEC/PHD/CA	0	800	1Q	1,159	1Q	1,959
	CPAF	JHU/APL/MD	0	0	N/A	656	1Q	656
	MIPR	NSWC/Corona/CA	0	0	N/A	108	1Q	108
	MIPR	MDA/VA	0	0	N/A	1,826	1Q	1,826
	Various	Various	0	800	1/2Q	656	1/2Q	1,456
SM-3 Block IB Missile Fielding								
	CPAF	Raytheon/AZ	0	4,200	2/4Q	65,169	1Q	69,369

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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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
	MIPR	NSWC/IH/MD	0	200	1/2Q	985	1Q	1,185
	MIPR	NSWC/DD/VA	0	200	1/2Q	1,643	1Q	1,843
	MIPR	NSWC/PHD/CA	0	200	1/2Q	1,491	1Q	1,691
	CPAF	JHU/APL/MD	0	0	N/A	844	1/2Q	844
	MIPR	NSWC/Corona/CA	0	0	N/A	141	1Q	141
	MIPR	MDA/VA	0	0	4Q	2,349	1Q	2,349
	Various	Various	0	200	1/2Q	844	1/3Q	1,044
Asymmetric Threat Initiative								
	MIPR	MDA/VA	0	10,000	1/2Q	0	N/A	10,000
Subtotal Product Development			0	507,656		539,066		1046722

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
BMD 4.0.1 Weapon System Development								
	CPFF	General Dynamics/NJ	0	18,458	1Q	14,039	1Q	32,497
	CPFF	Paradigm/VA	0	4,543	1Q	6,112	N/A	10,655
	CPFF	Gryphon/MD	0	1,043	1Q	1,312	N/A	2,355
	CPAF	Lockheed Martin/NJ	0	522	1Q	656	N/A	1,178
	CPAF	Raytheon/AZ	0	522	1Q	656	N/A	1,178
	MIPR	NAVSEA/DC	0	4,694	1Q	5,903	N/A	10,597

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
	MIPR	MDA/VA	0	11,944	1Q	23,415	N/A	35,359
BMD 5.0 Weapon System Development								
	CPFF	Lockheed Martin/NJ	0	4,554	1Q	4,240	1Q	8,794
	CPFF	Paradigm/VA	0	845	1Q	930	1Q	1,775
	CPFF	Gryphon/MD	0	245	1Q	330	1Q	575
	CPAF	Lockheed Martin/NJ	0	122	1Q	165	1Q	287
	CPAF	Raytheon/AZ	0	122	1Q	165	1Q	287
	MIPR	NAVSEA/DC	0	1,102	1Q	1,487	1Q	2,589
	MIPR	MDA/VA	0	2,803	1Q	5,803	1/3Q	8,606
SM-3 Block IB Development								
	CPFF	General Dynamics/NJ	0	16,926	1Q	8,633	1Q	25,559
	CPFF	Paradigm/VA	0	4,471	1Q	3,581	1Q	8,052
	CPFF	Gryphon/MD	0	970	1Q	780	1Q	1,750
	CPAF	Lockheed Martin/NJ	0	485	1Q	390	1Q	875
	CPAF	Raytheon/AZ	0	485	1Q	390	1Q	875
	MIPR	NAVSEA/DC	0	4,367	1Q	3,512	1Q	7,879
	MIPR	MDA/VA	0	11,111	1Q	13,706	1Q	24,817
Subtotal Support Costs			0	90,334		96,205		186539
Remarks								

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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Flight Testing								
	MIPR	PMRF/HI	0	0	N/A	682	1Q	682
	MIPR	SMDC/AL	0	0	N/A	256	1Q	256
	MIPR	NSWC/DD/VA	0	0	N/A	853	1Q	853
	CPFF	JHU/APL/MD	0	0	N/A	1,450	1Q	1,450
	CPAF	Lockheed Martin/ NJ	0	0	N/A	1,706	1Q	1,706
	MIPR	NSWC/PHD/CA	0	0	N/A	597	1Q	597
	CPFF	MIT/LL/MA	0	0	N/A	427	1Q	427
	MIPR	AIRPAC/HI	0	0	N/A	256	1Q	256
	MIPR	SPAWAR/CA	0	0	N/A	427	1Q	427
	Various		0	0	N/A	2,281	1Q	2,281
Subtotal Test and Evaluation			0	0		8,935		8935

Remarks

IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	597,990		644,206		1,242,196
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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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	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
Development Milestones																												
BMD 4.0.1 Development					▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
BMD 4.0.1 Testbed EE					▲																							
BMD 4.0.1 In-Process Review								▲																				
BMD 4.0.1 Critical Design Review (CDR)									▲																			
BMD 4.0.1 Engineering Assessment										▲																		
BMD 4.0.1 Demo															▲													
BMD 4.0.1 CPAP																▲												
BMD 4.0.1 Certification																												
BMD 5.0 Development					▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
BMD 5.0 System Design Review					▲																							
BMD 5.0 Preliminary Design Review										▲																		
BMD 5.0 Critical Design Review																▲												
BMC 5.0 Demo																												

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 2008																																											
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)										R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis																																																		
Fiscal Year	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 5.0 Cert																												△																																
Flight Tests																																																												
BMD 4.0.1 At-Sea Demo (ASD)																																							△																					
FTM-16																																									△																			
FTM-17																																															△													
FTM-18																																																				△								
FTM-19																																																											△	
Fielding Deliveries/Ships																																																												
BMD 4.0.1 Ship Installations																																																											△	
BMD 5.0 Ship Installations																																																											△	
Fielding Deliveries/Missiles																																																												
SM-3 Blk IA Deliveries																																																												△
SM-3 Blk IB Deliveries																																																												△
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 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones							
BMD 4.0.1 Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q		
BMD 4.0.1 Testbed EE		1Q					
BMD 4.0.1 In-Process Review		2Q					
BMD 4.0.1 Critical Design Review (CDR)		4Q					
BMD 4.0.1 Engineering Assessment			1Q				
BMD 4.0.1 Demo				1Q			
BMD 4.0.1 CPAP				2Q			
BMD 4.0.1 Certification					2Q		
BMD 5.0 Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q	
BMD 5.0 System Design Review		1Q					
BMD 5.0 Preliminary Design Review			1Q				
BMD 5.0 Critical Design Review				1Q			
BMC 5.0 Demo					4Q		
BMD 5.0 Cert						2Q	
Flight Tests							
BMD 4.0.1 At-Sea Demo (ASD)			4Q				
FTM-16				4Q			
FTM-17					3Q		
FTM-18						3Q	
FTM-19							3Q
Fielding Deliveries/Ships							
BMD 4.0.1 Ship Installations			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
BMD 5.0 Ship Installations							2Q-4Q
Fielding Deliveries/Missiles							
SM-3 Block IA Deliveries				4Q	1Q-2Q		
SM-3 Block IB Deliveries					3Q-4Q	1Q-4Q	1Q-2Q

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
XX09 AEGIS BMD Sustainment	0	43,800	42,501	45,772	31,166	30,571	29,280
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content in project XX09 is a continuation of the efforts reported in projects 0709, 0809, 0909, and 0009 and was explained in those projects in PB08.

A. Mission Description and Budget Item Justification

Aegis BMD has negotiated agreements with the U.S. Navy for the operations and maintenance of BMD systems on-board U.S. Navy ships. Support efforts are leveraged off of already-existing contracts and infrastructure, maintained by the Navy.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
AWS Maintenance	0	20,000	18,863
RDT&E Articles (Quantity)	0	0	0

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

FY08 Planned Program:

- Provide In-service Engineering support to Aegis BMD: Weapon System 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 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 and Vertical Launching System.
- Provide operational and maintenance training for Aegis BMD ship crews.

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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	
<ul style="list-style-type: none"> • Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD: Weapon System 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. 			
	FY 2007	FY 2008	FY 2009
SM-3 Missile Maintenance	0	23,800	23,638
RDT&E Articles (Quantity)	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>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Provide In-service Engineering support to Aegis BMD: SM-3 missile. • 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: SM-3 missile. • Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. • Respond to Fleet issues related to Aegis BMD operations and BMD events. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Provide In-service Engineering support to Aegis BMD: SM-3 missile. • 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: SM-3 missile. • Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. • Respond to Fleet issues related to Aegis BMD operations and BMD events. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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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C. Other Program Funding Summary								
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603892C Ballistic Missile Defense Aegis	
<u>D. Acquisition Strategy</u> Support contracts for U.S. Navy ships, including those designated as BMD-ships, are designated and maintained by the U.S. Navy. This includes support for assets being deployed on U.S. Navy ships, such as the SM-3 missile.		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Product Development								

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
AWS Maintenance								
Weapon System	MIPR	JHU/APL/MD	0	450	1Q	350	1Q	800
Weapon System	MIPR	CSCS (ATRC)/VA	0	1,975	N/A	1,775	1Q	3,750
Weapon System	MIPR	NSWC Corona/CA	0	1,060	N/A	860	1Q	1,920
Weapon System	MIPR	NSWC/DD/VA	0	795	N/A	695	1Q	1,490
Weapon System	MIPR	NSWC/PHD/CA	0	3,881	N/A	3,644	1Q	7,525
Weapon System	Various	Various/Various	0	839	N/A	639	1/2Q	1,478
Weapon System	CPAF	Lockheed Martin/ NJ	0	11,000	N/A	10,900	1Q	21,900
SM-3 Missile Maintenance								
Missile	CPAF	Raytheon/AZ	0	14,000	1Q	14,038	1Q	28,038
Missile	MIPR	NSWC/PHD/CA	0	2,500	N/A	2,500	N/A	5,000
Missile	MIPR	NSWC/DD/VA	0	2,500	N/A	2,500	N/A	5,000
Missile	MIPR	NSWC Corona/CA	0	2,000	N/A	2,000	N/A	4,000
Missile	MIPR	NSWC IH/MD	0	1,000	N/A	1,000	N/A	2,000
Missile	Various	Various/Various	0	1,800	1/2Q	1,600	1/2Q	3,400
Subtotal Support Costs			0	43,800		42,501		86301

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 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 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	43,800		42,501		86,301
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Remarks

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0918 Sea-Based Terminal Block 2008	28,000	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0
<p><i>Note: The content previously planned in project 0918 for FY 08-13 has been moved to project BX18, in accordance with the Missile Defense Agency revised Block structure.</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>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:</p> <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. <p>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 Block IA) missiles based upon data received via the Tactical Digital Information Link (TADIL) network in the final Block 2006 configuration, BMD 3.6.</p> <p>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.</p> <p>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.</p>							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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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B. Accomplishments/Planned Program			
	FY 2007	FY 2008	FY 2009
Weapon System	21,000	0	0
RDT&E Articles (Quantity)	0	0	0

In this project, Weapon System funding will focus on the development and deployment of the BMD 3.6.1 computer program

FY07 Accomplishments:

- Conducted System Readiness Review and In Process Reviews to provide direction to the prime contractor for key decision points.
- Completed threat analyses and threat database modifications for the selected threat set.
- Completed memory and timing studies for the additional processing requirements.
- Began Element Test and Evaluation (ETE) and Multi-Element Integration Testing (MEIT).

	FY 2007	FY 2008	FY 2009
Test & Evaluation	7,000	0	0
RDT&E Articles (Quantity)	0	0	0

Test and Evaluation funding supports the analysis and execution of the FTM-15 campaign.

FY07 Accomplishments:

- Began procurement of FMA target for Near-Term SBT testing (FTM-14).

C. Other Program Funding Summary								
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
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PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
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PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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 is performing modifications to the 100 SM-2 Block IV missiles.

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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			
I. Product Development Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System								
	CPAF	Lockheed Martin/ NJ	13,500	0	N/A	0	N/A	13,500
	MIPR	NSWCDD/VA	500	0	N/A	0	N/A	500
	CPFF	JHU/APL/MD	500	0	N/A	0	N/A	500
	Various	Various	500	0	N/A	0	N/A	500
Subtotal Product Development			15,000	0		0		15000
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Test & Evaluation								
Subtotal Test and Evaluation			0	0		0		0
Remarks								

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IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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			15,000	0		0		15,000
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Remarks

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
BX18 Sea-Based Terminal BMD Block 2.0	0	71,414	19,858	3,098	1,191	0	0
RDT&E Articles Qty	0	3	6	6	5	0	0
<p><i>Note: This project was funded in FY07 under project 0918, Sea-Based Terminal Block 2008.</i></p> <p><i>RDT&E Articles: FY08 - Delivery of the BMD 3.6.1 computer program (1), one (1) BMD 3.6.1 CG, one (1) FMA target. FY09 - One (1) BMD 3.6.1 CG, five (5) BMD 3.6.1 DDGs. FY10 - Six (6) BMD 3.6.1 DDGs. FY11 - One (1) BMD 3.6.1 CG, four (4) BMD 3.6.1 DDGs.</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>The Near-Term Sea-Based Terminal (SBT) project 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 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 IRBM targets. <p>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 Block IA) missiles based upon data received via the Tactical Digital Information Link (TADIL) network in the final configuration, BMD 3.6.</p> <p>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.</p> <p>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.</p>							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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 2007	FY 2008	FY 2009
Weapon System Development	0	37,350	6,469
RDT&E Articles (Quantity)	0	1	0
<p>In this project, Weapon System funding will focus on the development and deployment of the BMD 3.6.1 computer program.</p> <p>FY08 Planned Program: RDT&E Articles: BMD 3.6.1 Computer Program (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 (EA) for BMD 3.6.1. • Participate in At Sea Flight Test Mission leading to certification in FY 2009. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Certify BMD 3.6.1 for installation and operational use on Aegis BMD cruisers and destroyers. 			
	FY 2007	FY 2008	FY 2009
Test & Evaluation	0	21,100	9,531
RDT&E Articles (Quantity)	0	0	0
<p>Test and Evaluation funding supports the analysis and execution of the FTM-14 and FTM-15 campaigns.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • 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 two (2) ARAV-B MRBM target. ○ Test interoperability with other BMDS elements. ○ 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 Block IV missile. ○ Perform post-flight analysis to validate high fidelity models and simulations. ○ Conduct post-flight analysis to support Mission Data Reviews (MDRs). 			

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FY09 Planned Program:

- Participate in FTM-15 (full write up is included in project BX09, Aegis BMD Block 2.0).

	FY 2007	FY 2008	FY 2009
BMD 3.6.1 Deployment	0	650	3,858
RDT&E Articles (Quantity)	0	1	6

This efforts accounts for the installation of the BMD 3.6.1 computer program on Aegis Cruisers and Destroyers.

FY08 Planned Program: RDT&E Articles: Installation of BMD 3.6.1 on one (1) Aegis BMD Cruiser.

- Install BMD 3.6.1 on one (1) Cruiser in support of flight missions.

FY09 Planned Program: RDT&E Articles: Installation of BMD 3.6.1 on one (1) Cruiser and five (5) Destroyers.

- Install BMD 3.6.1 on one (1) Cruiser and five (5) Destroyers.

	FY 2007	FY 2008	FY 2009
Targets	0	12,314	0
RDT&E Articles (Quantity)	0	1	0

This effort provides the Missile Defense Agency with ballistic missile target hardware, target range support, logistics support, target integration, and associated launch services.

FY08 Planned Program: RDT&E Articles: 1 FMA Target

- Provide an FMA SRMB target in support of FTM-14
- The launch of this target is from the Mobile Launch Platform (MLP)

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
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PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344

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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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PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Development								
	CPAF	Lockheed Martin/ NJ	0	29,500	1/2Q	5,225	1/2Q	34,725
	MIPR	NSWCDD/VA	0	4,650	1/4Q	0	N/A	4,650
	CPFF	JHU/APL/MD	0	930	1Q	1,244	1Q	2,174
	Various	Various	0	400	1/2Q	0	N/A	400
	FPI	MDA/VA	0	1,170	1/4Q	0	N/A	1,170
	MIPR	Aegis Techrep/NJ	0	700	1Q	0	4Q	700
BMD 3.6.1 Deployment								
	CPAF	Lockheed Martin/ NJ	0	650	N/A	3,858	1/3Q	4,508
Subtotal Product Development			0	38,000		10,327		48327

Remarks

II. Support Costs Cost (\$ in Thousands)

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

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Test & Evaluation								
	MIPR	PMRF/HI	0	2,206	1Q	627	1Q	2,833
	MIPR	NSWC/DD/VA	0	3,200	1Q	1,280	1Q	4,480
	CPFF	JHU/APL/MD	0	5,597	1Q	1,880	1Q	7,477
	MIPR	NSEC/PHD/CA	0	2,444	1Q	1,258	1Q	3,702
	CPAF	Lock Martin/ NJ	0	5,888	1Q	3,286	1Q	9,174
	Various	Various	0	500	1Q	500	1Q	1,000
	MIPR	MDA/VA	0	1,265	1Q	700	1Q	1,965
Targets								
	MIPR	MDA/VA	0	12,314	N/A	0	N/A	12,314
Subtotal Test and Evaluation			0	33,414		9,531		42,945

Remarks

IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	71,414		19,858		91,272
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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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	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				
Development Milestones																																
BMD 3.6.1 Engineering Assessment (EA)					▲																											
BMD 3.6.1 Certification									▲																							
Flight Tests																																
FTM-14									▲																							
FTM-15													▲																			
Fielding Deliveries/Ships																																
BMD 3.6.1 Ship Installations																																

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-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones							
BMD 3.6.1 Engineering Assessment (EA)		2Q					
BMD 3.6.1 Certification			1Q				
Flight Tests							
FTM-14		3Q					
FTM-15			2Q				
Fielding Deliveries/Ships							
BMD 3.6.1 Ship Installations		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
WX18 Far Term Sea Based Terminal Capability Development	0	13,000	38,909	49,645	44,665	163,770	176,669
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: In the FY 2008 President's Budget, the Far-Term Sea Based Terminal program was shown in project R218 in this PE (0603892C); funding began in FY08 for this effort.

A. Mission Description and Budget Item Justification

The Far-Term Sea Based Terminal (FTSBT) project (BMD 5.X), is an Aegis BMD future capability development, with a projected fielding date of 2014. FTSBT will expand the Near-Term Sea Based Terminal capability developed and delivered as baseline BMD 3.6.1 in Block 2.0, providing a more capable and robust SBT capability and expanding the 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. It is anticipated that the missile development work will be competed among multiple vendors.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Weapon System Development	0	13,000	28,981
RDT&E Articles (Quantity)	0	0	0

This projects provides funding for the development of the weapon system position of the FTSBT effort within the U.S. Navy's Open Architecture system.

FY08 Planned Program:

- Begin SBT weapon system requirements definition; perform specifications analysis.

FY09 Planned Program:

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

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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 2007	FY 2008	FY 2009
Missile Development	0	0	9,928
RDT&E Articles (Quantity)	0	0	0

This project funds missile development efforts to support FTSBT efforts.

FY09 Planned Program:

- Begin missile downselect process.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

MDA/D directed that Aegis BMD begin the acquisition planning for the Far-Term Sea Based Terminal program. The AWS development and deployment effort will be sole source to Lockheed Martin. It is anticipated that 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 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Weapon System Development								
	C/CPAF	Lockheed Martin/ NJ	0	10,220	1Q	23,981	1Q	34,201
	C/CPFF	JHU/APL/MD	0	1,000	1Q	2,000	1Q	3,000
	MIPR	NSWC/DD/VA	0	1,000	1Q	1,260	1Q	2,260
	MIPR	MDA/VA	0	780	1Q	1,740	1Q	2,520
Missile Development								
	CPAF	Raytheon/ Various	0	0	N/A	6,940	N/A	6,940
	MIPR	NSWC DD /VA	0	0	N/A	994	N/A	994
	CPAF	JHU/APL/MD	0	0	N/A	1,394	N/A	1,394
	MIPR	MDA/VA	0	0	N/A	600	N/A	600
Subtotal Product Development			0	13,000		38,909		51909

Remarks

II. Support Costs Cost (\$ in Thousands)

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

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 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 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	13,000		38,909		51,909
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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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	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
Development Milestones																												
BMD 5.1 / 5.X System Requirements Review									▲																			
BMD 5.1 / 5.X System Design Review													▲															
BMD 5.1 / 5.X Preliminary Design Review-1																	▲											
BMD 5.1 / 5.X Preliminary Design Review-2																					▲							
BMD 5.1 / 5.X Critical Design Review																												▲
Milestones																												
Requirements Analysis					▲	—	—	▲																				
Missile Down Select									▲	—	—	▲																

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-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones							
BMD 5.1 / 5.X System Requirements Review			1Q				
BMD 5.1 / 5.X System Design Review				1Q			
BMD 5.1 / 5.X Preliminary Design Review-1					1Q		
BMD 5.1 / 5.X Preliminary Design Review-2						1Q	
BMD 5.1 / 5.X Critical Design Review							3Q
Milestones							
Requirements Analysis		1Q-4Q	1Q-2Q				
Missile Down Select			3Q-4Q	1Q-2Q			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008	
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0402 Japanese Cooperative Program	47,900	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content previously planned in project 0402 for FY 08-13 has been moved to project WX09, in accordance with the Missile Defense Agency revised Block structure.

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 Block IIA). The objective of the SM-3 Cooperative Development (SCD) project is the development and initial at-sea flight test of the SM-3 Block IIA missile. The SM-3 Block 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 Block IIA missile. Key technology improvements over the current SM-3 Block IA missile planned for the SM-3 Block 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 Block 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, information exchange related to production and maintenance of the SM-3 Block IIA missile will be initiated. Upon completion of

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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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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 Block II missile; Phase III will define the performance allocation and component configuration for the development and testing of the SM-3 Block IIA missile.

The SM-3 Block IIA missile will increase the area that can be defended by Aegis BMD and increase the probability of kill against a larger threat set. It will leverage enhanced capability provided by BMDS sensor upgrades.

The SCD project will:

- Develop components for the SM-3 Block IIA missile and integrate them into an All Up Round (AUR)
 - 21” 2nd and 3rd stage components:
 - 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 Block II/IIA missile and use of threat track data from BMDS sensors.
- Integrate the SM-3 Block IIA missile and VLS with Aegis ship systems
 - Includes development of a light weight VLS canister
- Conduct test and evaluation using ground and flight tests
 - SM-3 Block IIA missile
 - Aegis BMD ship systems
 - Aegis BMD weapon systems

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
SM-3 Block IIA Development - Missile	47,900	0	0
RDT&E Articles (Quantity)	0	0	0

This project funds the development of the SM-3 Block IIA missile. The SM-3 Block IIA is a 21-inch diameter missile.

FY07 Accomplishments:

- Initiated Phase I of the SM-3 Cooperative Development project.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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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- Conducted a System Concept Review for the SM-3 Block IIA missile.
- Prepared for a System Requirements Review for the SM-3 Block IIA missile (conducted 1Q FY08).
- Continued risk reduction efforts related to the 21-inch missile components, seeker, and DACS.
- Continued risk reduction efforts related to the 21-inch missile components, seeker, and DACS.
- Prepared preliminary test plans for the SM-3 Block IIA missile.
- Initiated information exchange with Japan related to the production and maintenance of the SM-3 Block IIA missile.
- Initiated Aegis Weapon System design studies for the SM-3 Block IIA missile effort.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008	
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

The SM-3 Cooperative Program for the SM-3 Block IIA missile will utilize a performance based approach that ties program decision milestones to the performance of development prototypes, as well as 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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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
SM-3 Block IIA Development - Missile								
	SS/CPAF	Raytheon/AZ	45,194	0	N/A	0	N/A	45,194
	MIPR	MDA/VA	2,706	0	N/A	0	N/A	2,706
Subtotal Product Development			47,900	0		0		47900

Remarks

II. Support Costs Cost (\$ in Thousands)

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

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			47,900	0		0		47,900
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Remarks

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
WX09 Japanese Cooperative Capability Development	0	89,383	179,742	290,224	359,409	330,121	409,019
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content in project WX09 is a continuation of the efforts reported in projects 0402 and R109 and was explained in those projects in PB08.

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 Block IIA). The objective of the SM-3 Cooperative Development (SCD) project is the development and initial at-sea flight test of the SM-3 Block IIA missile. The SM-3 Block 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 Block IIA missile. Key technology improvements over the current SM-3 Block IA missile planned for the SM-3 Block 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 Block 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, information exchange related to production and maintenance of the SM-3 Block 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

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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	
<p>performance allocation and component configuration for the development and testing of the SM-3 Block II missile; Phase III will define the performance allocation and component configuration for the development and testing of the SM-3 Block IIA missile.</p> <p>The SM-3 Block 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 Block IIA missile and integrate them into an All Up Round (AUR).<ul style="list-style-type: none">○ 21” 2nd and 3rd stage components:○ 21” nosecone○ Advanced kinetic warhead○ Advanced Seeker○ Improved Large Diameter Divert and Attitude Control System• Begin engineering of the Aegis Weapon System to exploit the capability of the SM-3 Block II/IIA missile and use of threat track data from BMDS sensors.• Integrate the SM-3 Block 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 Block IIA missile○ Aegis BMD ship systems○ Aegis BMD weapon system <p>BMD 5.1 will integrate the SM-3 Block IIA missile with the Aegis BMD Weapon System in Open Architecture, incorporating other Weapon System improvements:</p> <ul style="list-style-type: none">• 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		

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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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- Improvements to BMDS Multi-Element Sensor Data Fusion.
- Engage on Remote (EoR)

In collaboration with the MDA systems engineer, Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). Aegis BMD 5.1 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 2007	FY 2008	FY 2009
SCD Missile Development	0	64,349	101,549
RDT&E Articles (Quantity)	0	0	0

This project funds the development of the SM-3 Block IIA missile. The SM-3 Block IIA is a 21-inch diameter missile.

FY08 Planned Program:

- Continue development of SM-3 Block IIA components:
 - 21-inch diameter missile 2nd and 3rd stage components:
 - 21-inch diameter nosecone
 - Advanced kinetic warhead
 - Advanced Seeker
 - Improved Large Diameter Divert and Attitude Control System
- Participate in the System Requirements Review (SRR) for the SCD effort.

FY09 Planned Program:

- Continue development of SM-3 Block IIA components:
 - 21-inch diameter missile 2nd and 3rd stage components:
 - 21-inch diameter nosecone
 - Advanced kinetic warhead
 - Advanced Seeker

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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"> ○ Improved Large Diameter Divert and Attitude Control System ● Participate in the System Design Review (SDR) for the SCD effort. ● Participate in BMD 4.0.1 ENG REL engineering reviews. 			
	FY 2007	FY 2008	FY 2009
SCD Weapon System Development	0	14,300	32,166
RDT&E Articles (Quantity)	0	0	0
<p>Weapon System efforts within this project are centered on AWS modifications necessary to test the SM-3 Block IIA missile (BMD 4.0.1 Engineering Release (ENG REL)).</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> ● Continue requirements definition and analysis for lightweight canister and vertical launch system integration. ● Support performance requirements analysis for SCD. ● Continue requirements definition for BMD 4.0.1 ENG REL. ● Develop system specifications to support flight testing of SM-3 Block IIA missile. ● Participate in the System Requirements Review (SRR) for the SCD effort. ● Begin initial performance analysis for the flight test program. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> ● Continue requirements definition and analysis for lightweight canister and vertical launch system integration. ● Participate in the System Design Review (SDR) for the SCD effort. Support performance requirements analysis for SCD. ● Continue requirements definition for BMD 4.0.1 ENG REL. ● Develop system specifications to support flight testing of SM-3 Block IIA missile. ● Begin range analysis and change/modification package changes. 			

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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	
	FY 2007	FY 2008	FY 2009
BMD 5.1 Weapon System Development	0	10,734	28,692
RDT&E Articles (Quantity)	0	0	0
<p>BMD 5.1 will integrate SM-3 Block IIA missile improvements with the Aegis BMD Weapon System, leveraging on improvements achieved in BMD 4.0.1 ENG REL and BMD 5.0, to include Open Architecture.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Begin model development for BMD 5.1 performance. • Conduct analyses of BMD 5.1 threat set. • Draft the BMD 5.1 Engineering Capability Specification (ECS). • Begin development of RF discrimination techniques. • Develop requirements for BMD 5.1. • Begin performance predictions for the weapon system. • Analyze VLS changes. • Begin development of a BMD 5.1 TBSS/TBDD. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Conduct System Requirements Review (SRR), Review ECS and provide requirements to the contractor for BMD 5.1. • Draft A-Spec based on requirements from ECS and guidance from SRR. • Continue system performance evaluation and develop performance analysis plan. • Develop modeling and simulation plan for BMD 5.1. • Prepare the weapon system ECS. • Continue development of the TBSS/TBDD. • Begin preparations for a BMD 5.1 SDR. 			

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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 2007	FY 2008	FY 2009
Infrastructure Support	0	0	17,335
RDT&E Articles (Quantity)	0	0	0

This project supports Infrastructure efforts in the areas of Information Technology, Quality Assurance, and common Threat Engineering efforts.

FY09 Planned Program:

- Provide Quality, Safety, and Mission Assurance to BMD test program.
- Provide Dedicated Information Technology services for mission specific research and test efforts to include classified and unclassified networks, software licenses, sustainment and information assurance certification..

Provide Common Threat Engineering data to support BMDS test and assessment planning to include (trajectory and signature data to directly support system and sub-system requirements).

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
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PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

The SM-3 Cooperative Development program for the SM-3 Block IIA missile will utilize a performance-based approach that ties program decision milestones to the performance of development prototypes, as well as Control Test Vehicle and Guidance Test Vehicle flight test article performance. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts to U.S. Navy work and events, and as defined by signed agreements between the Governments of the United States and Japan.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
SCD Missile Development								
	SS/CPAF	Raytheon/AZ	0	53,714	1Q	87,029	1Q	140,743
	MIPR	NSWC DD/VA	0	2,359	1Q	3,500	1Q	5,859
	CPFF	JHU/APL/MD	0	2,949	1Q	4,000	1Q	6,949
		MIT/MA	0	1,180	1Q	1,500	1Q	2,680
	MIPR	MSWC PHD/CA	0	2,949	1Q	3,500	1Q	6,449
	MIPR	NSWC IH/MD	0	1,198	1Q	2,020	1Q	3,218
SCD Weapon System Development								
	CPAF	Lockheed Martin/ NJ	0	11,150	1Q	25,926	1Q	37,076
	CPFF	JHU/APL/MD	0	1,130	1Q	1,850	1Q	2,980
	MIPR	NSCW/DD/VA	0	350	1Q	1,220	1Q	1,570
		MIT/MA	0	1,550	1Q	2,200	1Q	3,750
	Various	Various	0	120	1/2Q	420	1/2Q	540
	MIPR	Techrep/NJ	0	0	N/A	550	1Q	550
BMD 5.1 Weapon System Development								
	CPAF	Lockheed Martin/ NJ	0	7,859	1Q	23,912	1Q	31,771
	CPAF	JHU/APL/MD	0	875	1Q	1,700	1Q	2,575
	MIPR	NSWCDD/VA	0	650	1Q	1,500	1Q	2,150
	MIPR	SPAWAR/CA	0	300	1Q	400	1Q	700
	MIPR	VA Sites/VA	0	375	1Q	750	1Q	1,125
	Various	Various	0	325	1/3Q	150	1/2Q	475
	MIPR	Aegis Techrep/NJ	0	350	1Q	280	1Q	630
Subtotal Product Development			0	89,383		162,407		251790

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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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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Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Infrastructure Support								
	MIPR	MDA/VA	0	0	N/A	17,335	1/2Q	17,335
Subtotal Support Costs			0	0		17,335		17335

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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 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	89,383		179,742		269,125
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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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	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						
SM-3 Blk IIA Development Milestones																																		
SM-3 Blk IIA System Requirements Review (SRR)					▲																													
SM-3 Blk IIA SRR-2							▲																											
SM-3 Blk IIA System Design Review (SDR)											▲																							
SM-3 Blk II Preliminary Design Review															▲																			
SM-3 Blk IIA Critical Design Review																																		
Development Milestones																																		
BMD 4.0.1 ENG REL Development					▲	—————																▲												
BMD 4.0.1 ENG REL Mission Review											▲																							
BMD 4.0.1 ENG REL SDD															▲																			
BMD 4.0.1 ENG REL Engineering Assessment																																		
BMD 5.1 / 5.X Development					▲	—————																▲												
BMD 5.1 / 5.X System Requirements Review											▲																							
BMD 5.1 / 5.X System Design Review															▲																			
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 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
SM-3 Block IIA Development Milestones							
SM-3 Block IIA System Requirements Review (SRR)		1Q					
SM-3 Block IIA SRR-2		3Q					
SM-3 Block IIA System Design Review (SDR)			1Q				
SM-3 Block II Preliminary Design Review				3Q			
SM-3 Block IIA Critical Design Review					4Q		
Development Milestones							
BMD 4.0.1 ENG REL Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q	
BMD 4.0.1 ENG REL Mission Review			2Q				
BMD 4.0.1 ENG REL SDD				2Q			
BMD 4.0.1 ENG REL Engineering Assessment						1Q	
BMD 5.1 / 5.X Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
BMD 5.1 / 5.X System Requirements Review			1Q				
BMD 5.1 / 5.X System Design Review				1Q			
BMD 5.1 / 5.X Preliminary Design Review-1					1Q		
BMD 5.1 / 5.X Preliminary Design Review-2						1Q	
BMD 5.1 / 5.X Critical Design Review							3Q
Flight Tests							
PTV-1						4Q	
PTV-2							2Q
PTV-3							4Q

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0602 Program-Wide Support	14,118	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Efforts within this project continue in FY 2008 under project ZX40.

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 2007	FY 2008	FY 2009
Civilian Salaries and Support	14,118	0	0
RDT&E Articles (Quantity)	0	0	0

See Section A: Mission Description and Budget Item Justification

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752	5,650,344
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
ZX40 Program-Wide Support	0	15,014	30,416	43,055	30,857	31,002	32,886
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: In accordance with the Missile Defense Agency revised block structure, the content previously planned in Project 0602 for FY08-FY13 is now captured in Project ZX40.

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 2007	FY 2008	FY 2009
Civilian Salaries and Support	0	15,014	30,416
RDT&E Articles (Quantity)	0	0	0

See Section A: Mission Description and Budget Item Justification

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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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