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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603892C: <i>BMD AEGIS</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	1,418.992	1,467.278	960.267	-	960.267	957.992	1,001.510	970.607	1,033.710	Continuing	Continuing
BX09: <i>AEGIS BMD Block 2.0</i>	50.679	-	-	-	-	-	-	-	-	0.000	50.679
BX18: <i>Sea-Based Terminal BMD Block 2.0</i>	24.915	-	-	-	-	-	-	-	-	0.000	24.915
EX09: <i>AEGIS BMD Block 5.0</i>	1,086.209	-	-	-	-	-	-	-	-	0.000	1,086.209
WX09: <i>AB Capability Development</i>	176.598	-	-	-	-	-	-	-	-	0.000	176.598
XX09: <i>AEGIS BMD Sustainment</i>	39.981	-	-	-	-	-	-	-	-	0.000	39.981
MD09: <i>Aegis BMD</i>	-	1,412.560	906.368	-	906.368	866.467	910.277	885.600	951.748	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	-	-	12.600	-	12.600	51.400	46.300	43.500	37.900	0.000	191.700
ZX40: <i>Program-Wide Support</i>	40.610	-	-	-	-	-	-	-	-	0.000	40.610
MD40: <i>Program-Wide Support</i>	-	54.718	41.299	-	41.299	40.125	44.933	41.507	44.062	Continuing	Continuing

Note

In accordance with the Missile Defense Agency's revised budget structure, the content previously planned in Projects BX09, BX18, EX09, WX09, XX09, and ZX40 for FY 2010 is now captured in Projects MD09 and MD40.

A. Mission Description and Budget Item Justification

The Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U.S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles (SRBM), Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) in the midcourse phase of flight. In support of Homeland Defense, Aegis BMD provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS. Upgrades to both the Aegis BMD Weapon System and the SM-3 configuration enable Aegis BMD to provide effective, supportable defensive capability against longer range, more complex threats and an enduring Aegis Ashore defensive capability.

In support of the objective to defend allies and deployed forces from short- to medium-range threats in one region or theater, Aegis BMD provides/will provide several capabilities:

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- Far Term

- SM-3 Block IIA - Aegis BMD and the Japan Ministry of Defense (JMOD) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of a spiral upgrade of the SM-3 Blk IB missile to a 21-inch diameter SM-3 missile (SM-3 Blk IIA). Missile development will be covered under the SCD project prior to the SM-3 Blk IIA incorporation into the Aegis BMD 5.1 upgrade to the Aegis BMD system. By Congressional direction, this content transfers to PE 0604881C, SM-3 Block IIA Co-Development, in FY10.
- Aegis BMD 5.1 - Integrates the SM-3 Blk IIA missile with an improved terminal defense capability and Open Architecture (OA) environment. The addition of the SM-3 Blk IIA missile will expand available battlespace to include IRBM and selected longer-range threats, and when combined with additional weapon system modifications, will enable an Engage-on-Remote (EoR) capability. That capability will further extend Aegis BMD by capitalizing on globally-deployed BMDS sensor assets. With the addition of the SM-3 Blk IIB, expands the threat set to include some Inter-continental Ballistic Missiles (ICBMs).
- Ship integration support for SM-3 Blk IIB development.

BMD Systems Engineering:

BMD Systems Engineering provides System Description Document and System Specifications for elements to design, build, integrate and test BMDS components. These products optimize performance at the system level and further ensure that the assessment of the designed BMD System is based on sufficient ground and flight testing. Aegis BMD compliance with BMD System level requirements (integrated Builds B, C and D) is monitored in a series of requirements and design reviews both at the system and element levels. Aegis BMD system engineers adapted this data to input into validated and a accredited 6-Degree of Freedom (DOF) system models.

The Missile Defense Agency evolves Ballistic Missile Defense System (BMDS) capabilities in versions known as ``Builds.`` Each Build allocates functional requirements to the BMDS subsystems (e.g., Aegis BMD) to achieve the system-level integration needed for flexible, efficient, and effective ballistic missile defense.

Common Threat Engineering:

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>
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Common threat engineering produces common and consistent adversary trajectory and signature data to enable BMD System and sub-system concept and requirements, design, verification, and assessment. Common Threat data is contained in the MDA Adversary Capability Document (ACD) and Adversary Data Packages (ADP) and drives BMDS ground tests, flight tests, digital simulations, and pre-mission analysis activities. It is also used to develop the BMD System Description Document and BMD System Specification.

Modeling & Simulation:

Aegis BMD has validated and accredited 6-DOF system models that support element level system engineering. These models provided input to the larger set of BMDS level models. Modeling and simulation (M&S) activities support all phases of Aegis BMD's development, including development of Aegis Weapon System (AWS) and SM-3 variants, flight test missions, ground tests, war games, exercises, and performance assessment. Models and simulations are tailored to the specific need of a component in its current phase of development, ranging from low-to-medium fidelity analyses supporting concept definition studies, to high-fidelity models used to support engineering development, or testing and are integrated into the BMD Digital Simulations Architecture. Digital simulations support Performance Assessment (PA) and Technical Assessment (TA) events, which provide critical system level performance data relative to all elements, the system engineer, M&S developers, Operational Test Agencies (OTA) and Warfighter. Further, the M&S Digital tools are accredited for each application and for specific objectives; tools are put through a rigorous verification and validation process, reviewing coding and specifications, and comparing analyses against actual flight test results. Planning support is required to assist in the Verification and Validation (V&V) plan development, test execution, analysis for V&V reports and Program Office M&S Certification. The Digital End-to-End simulation of the BMDS requires a PA Integrated V&V Plan and Report (both element and system level), a PA/TA-system level Accreditation Plan and Report, and support to PA/TA Non-MDA Elements. BMDS Hardware In The Loop (HWIL) is used to proof out the construct of the flight test to ensure if the required data and data management plan will support System Post Flight Reconstruction (SPFR) objectives. SPFR will use a HWIL and/or a Digital M&S Environment to replicate the day of flight for the BMDS configuration, modified to represent the actual environmental conditions and target dynamics observed in flight. The results of this testing are used to increase confidence in the models and simulations by anchoring the M&S results with emphasis on the critical engagement conditions (CECs) and empirical measurement events (EMEs) collected in test events. SPFR is used for validation (anchoring) of models and simulations.

Proving Missile Defense:

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>
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Working with the Services' Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), MDA has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, suitable, and survivable.

The BMDS performance evaluation strategy is to develop models and simulations of the BMDS and compare their predictions to empirical data collected through comprehensive flight and ground testing to validate their accuracy, rather than physically testing all possible combinations of BMDS configurations, engagement conditions, and target phenomena. The BMDS test review determined how to validate our models and simulations so that our war fighting commanders have confidence in the predicted performance of the BMDS, especially when those commanders consider employing the BMDS in ways other than originally planned or against threats unknown at this time.

The test plan review resulted in a Integrated Master Test Plan (IMTP) that is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments. The bottom line is that MDA is focused on conducting meaningful ballistic missile testing that rigorously demonstrates the capabilities of the BMDS.

FY12 budget request recognizes that historical execution rates will result in FY11 funds available to support in FY12. The accomplishments reflect the use of FY11 funding in addition to the FY12 request.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	1,435.717	1,467.278	1,021.878	-	1,021.878
Current President's Budget	1,418.992	1,467.278	960.267	-	960.267
Total Adjustments	-16.725	-	-61.611	-	-61.611
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	7.667	-			
• SBIR/STTR Transfer	-21.901	-			
• Other Adjustment Detail	-2.491	-	-61.611	-	-61.611

Change Summary Explanation

The FY 2012 \$61.611 million dollar reduction includes \$106.636 million in efficiency saving and MDA programmatic changes.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT BX09: <i>AEGIS BMD Block 2.0</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
BX09: <i>AEGIS BMD Block 2.0</i>	50.679	-	-	-	-	-	-	-	-	0.000	50.679
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project BX09 has been transferred to project MD09.

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

	FY 2010	FY 2011	FY 2012
Title: Aegis BMD Block 2.0	50.679	-	-
Articles:	0		
Description: See Description Below			
FY 2010 Accomplishments: See MD09 for FY 2010 Accomplishments.			
Accomplishments/Planned Programs Subtotals	50.679	-	-

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT BX18: <i>Sea-Based Terminal BMD Block 2.0</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
BX18: <i>Sea-Based Terminal BMD Block 2.0</i>	24.915	-	-	-	-	-	-	-	-	0.000	24.915
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project BX18 has been transferred to project MD09.

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

	FY 2010	FY 2011	FY 2012
Title: Sea-Based Terminals BMD Block 2.0	24.915	-	-
Articles:	0		
Description: See Description Below			
FY 2010 Accomplishments: See MD09 for FY 2010 Accomplishments.			
Accomplishments/Planned Programs Subtotals	24.915	-	-

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT EX09: <i>AEGIS BMD Block 5.0</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
EX09: <i>AEGIS BMD Block 5.0</i>	1,086.209	-	-	-	-	-	-	-	-	0.000	1,086.209
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project EX09 has been transferred to project MD09.

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

	FY 2010	FY 2011	FY 2012
Title: Aegis BMD Block 5.0	1,086.209	-	-
Articles:	0		
Description: See Description Below			
FY 2010 Accomplishments: See MD09 for FY 2010 Accomplishments.			
Accomplishments/Planned Programs Subtotals	1,086.209	-	-

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
WX09: <i>AB Capability Development</i>	176.598	-	-	-	-	-	-	-	-	0.000	176.598
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project WX09 has been transferred to project MD09.

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

	FY 2010	FY 2011	FY 2012
Title: AB Capability Development	176.598	-	-
Articles:	0		
Description: See Description Below			
FY 2010 Accomplishments: See MD09 for FY 2010 Accomplishments.			
Accomplishments/Planned Programs Subtotals	176.598	-	-

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
XX09: <i>AEGIS BMD Sustainment</i>	39.981	-	-	-	-	-	-	-	-	0.000	39.981
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project XX09 has been transferred to project MD09.

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

	FY 2010	FY 2011	FY 2012
Title: Aegis BMD Sustainment	39.981	-	-
Articles:	0		
Description: See Description Below			
FY 2010 Accomplishments: Project XX09 has been transferred to project MD09.			
Accomplishments/Planned Programs Subtotals	39.981	-	-

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MD09: <i>Aegis BMD</i>	-	1,412.560	906.368	-	906.368	866.467	910.277	885.600	951.748	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

FY 2010 Program, \$1,378,382

A. Mission Description and Budget Item Justification

Aegis BMD continues development of a sea-based BMD capability in project MD09, in support of the Missile Defense Agency's mission to protect the homeland, deployed forces, friends and allies from ballistic missile threats of all ranges and in all stages of flight. Aegis BMD efforts will primarily fall into two categories of BMD initiatives:

Enhance Missile Defense to Defend Deployed Forces, Allies and Friends Against Theater Threats:

- Aegis BMD 3.6.1 deployed now, element of the Phase Adaptive Approached (PAA) phase I, midcourse and terminal layer defense.
- Aegis BMD 4.0.1 improved radar tracking accuracy and RF discrimination and increased raid capacity using Aegis BMD Signal Processor (BSP).
- SM-3 Blk IB improved kinetic warhead.
- Aegis BMD 5.0 integrates BMD capability into the Navy's Aegis Modernization Program.
- Aegis BMD 5.0.1 expands threat set and further increased the raid size, adds improved terminal defense capability.
- Aegis BMD 5.1 implementation of SM-3 Blk IIA tactical capability.
- Initial manufacturing of SM-3 Blk IB missiles.
- BMD shipset installations aboard US Navy Cruisers and Destroyers.
- Adaptation of Aegis BMD for use on land.

Prove Missile Defense Works:

- Aegis BMD element-level testing.
- Participation in BMD System ground tests.
- Element Modeling & Simulation.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>
<p>Aegis BMD 3.6.1 provides midcourse defense against SRBM, MRBM and IRBMs using the SM-3 Blk IA and terminal defense against SRBM with SM-2 Blk IV Missile. This configuration is deployed today supporting Combatant Commanders (COCOM) needs. It is key element of PAA phase I for defense of Europe and supports defense of friends and allies in the Pacific and other areas. Planned efforts include increasing the number the number of ships to 23 and continued integration with other element of the BMDS.</p> <p>Aegis BMD 4.0.1 SM-3 Blk IB will address more sophisticated and evolving threats. The ship receives a new signal processor that increases radar resolution to provide more accurate and discriminated track information and triples the possible number of simultaneous ballistic missile engagements over Aegis BMD 3.6.1 and revise existing launch on remote logic where SM-3 can be fired or flown based on off board sensor (e.g. AN/TPY-2, another Aegis BMD Ship, ABIR and STSS). The SM-3 receives a new kinetic warhead that includes a 2 color seeker, throtttable engine and upgraded signal processor. Aegis BMD 4.0.1 does not include a terminal defense capability.</p> <p>Aegis BMD 4.0.1 will deliver in two spirals. Spiral two will continue through the System Engineering Development and Testing process and culminate as an operationally-certified system capable of BMD engagements using either the SM-3 Blk IA or IB missile.</p> <p>Other capability enhancements include functionality to support BMDS integrated Builds C and D:</p> <ul style="list-style-type: none"> -Improvements in BMDS Command and 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, including Patriot upper tier debris mitigation. -Analysis for planned upgrades to the SM-3 missile to expand battlespace and improve discrimination, divert, and probability of mission success. -Supports BMDS Integrated Build C functionality: In Aegis BMD, this functionality includes deliberate and crisis Ballistic Missile Defense planning, Warfighter situational awareness, and the initial capability to control Regional BMD engagement between local assets and near-term improvements to threat discrimination. -Supports Integrated BMDS Build D functionality: In Aegis BMD, this functionality includes the Aegis BMD System (4.0.1 and Standard Missile (SM-3 Blk IB)) that provides significant improvements to both Radio Frequency (RF) and Infrared (IR) discrimination allowing for engagement of complex threats. Additional improvements to Aegis increase its ability to launch SM-3 interceptors on BMD System sensor data and improve Aegis coordination with the THAAD and Patriot weapon systems in the region. Approved additions to integrated Build D support initial Aegis BMD Ashore with control of engagement debris and refinements to BMD engagement coordination. <p>Aegis BMD 5.0 will integrate Aegis BMD 4.0.1 capability into the Navy-developed OA computing environment. This change is necessary for Aegis BMD to remain compatible with Navy as Navy ship modernization plans are executed. This change will improve human-systems interface through display enhancements and eliminate</p>		

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the need for a separate computing system specific to the BMD mission. This will also enable more ships to serve as candidates for the BMD mission. Aegis BMD 5.0 will support the BMDS Integrated Build D and provide the basis for Aegis Ashore.

Aegis BMD 5.0 will be enhanced by restoring the terminal defense layer, increasing raid capacity size and expanding the threat set to include those for PAA Phase II for defense of Europe and support of deployed forces, friends and allies and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades.

Aegis BMD 5.1 will integrate the SM-3 Blk IIA missile with an improved terminal defense capability and OA Aegis BMD Weapon System, incorporating other Weapon System improvements:

- Defeat a wide variety of ballistic missiles in the presence of countermeasures: SRBMs, MRBMs, and IRBMs.
- Increased battlespace with the SM-3 Blk IIA.
- Engage on Remote (EoR) engagements allows use active and passive off board sensor information to launch and guide the SM-3 to final intercept. EoR engagements will use more of the SM-3's kinematic envelope expanding battlespace, will increase the theoretical number of threats engaged over previous baselines both matching communications upgrades and make the overall architecture more resilient to adversary attempts to penetrate the BMDS.
- Enhanced conventional discrimination.
- Early Intercept (Organic).
- Increased BMDS interoperability.
- Enhanced Sea-Based Terminals.

Aegis BMD 5.1 with the addition of the SM-3 Blk IIB expands the threat set to include some Inter-continental Ballistic Missiles (ICBMs)

Aegis BMD supports an autonomous engagement against SRBMs and MRBMs without requiring external cueing. It supports an engagement against SRBMs and MRBMs using data from other BMDS elements and external sensors. Aegis BMD will also provide target track data to support Ground-based Interceptor Launch and Engagement against LRBMs.

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

	FY 2010	FY 2011	FY 2012
Title: Aegis BMD 4.0.1 Development	-	142.723	53.691
Articles:	0	0	0
Description: See Description Below			
FY 2010 Accomplishments:			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2010
<p>-Conducted Aegis BMD 4.0.1 Demo and received final report from Aegis TECHREP</p> <p>-Conducted Aegis BMD 4.0.1 Engineering Assessment</p> <p>-Participated in Target of Opportunity Testing in JFTM-3 and FTX-06</p> <p>-Continued to support systems engineering efforts to incorporate interoperability enhancements including: Navy Multi Band Terminal and Advanced EHF.</p> <p>-Continued interoperability studies with BMDS elements, automated mission planner data exchange with C2BMC and Maritime Integrated Air and Missile Defense Planning System (MIPS), utilization of improved space cue track data, and real world operations.</p> <p>-Conducted Navy and Joint Service-level communications testing to evaluate interoperability with the overall BMDS and Navy elements.</p> <p>-Continued evaluation of External Sensors Laboratory (ESL) space cue impacts on Aegis BMD performance.</p> <p>-Supported system integration efforts with BMDS space cues provided by new Overhead Persistent Infrared (OPIR) sensors and the ELS.</p> <p>-Completed Aegis BMD 4.0.1 Hardware installation on test ship</p> <p>-Completed Aegis BMD 4.0.1 Hardware installation at Wallops Island to support certification.</p> <p>Funding for these FY 2010 accomplishments are reported in prior year budget project EX09. (\$351,024)</p> <p>FY 2011 Plans:</p> <p>-Test of BMD 4.0.1.</p> <p>-Prepare for the Computer Program Acceptance Panel (CPAP).</p> <p>-Prepare for and execute FTM-16 ,the first BMD 4.0.1/SM-3 Blk IB flight test (Developmental Test (DT) Assist.</p> <p>-Deliver BMD 4.0.1 Computer Program Quality Assurance (QA) version #5.</p> <p>-Prepare for and Support the Deployment Certification.</p> <p>-Prepare for and Support the Platform Certification.</p> <p>-Deliver Final Technical Manuals for BMD 4.0.1.</p> <p>-Continue interoperability studies with BMDS elements, automated mission planner data exchange with C2BMC and MIPS utilization of improved space cue track data and real world operations.</p> <p>FY 2012 Plans:</p> <p>-Prepare for and conduct Aegis Flight Test (FTM)-19 E2 and FTM-20 E2 (DT/OT) to validate system level requirements.</p> <p>-Plan for FES-01, (launch a SM-3 based on STSS data).</p>				FY 2011
				FY 2012
Title: Aegis BMD 5.0 Development				-
				227.726
				164.416
Articles:				0
				0
				0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>Description: See Description Below</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> -Updated technical specifications (some in Unified Modeling Language). -Updated A-Spec & B-1 from PDR, Baseline Master Test and Evaluation Program Plan (MTEPP). -Conducted Aegis BMD 5.0 Critical Design Review to review and gain approval for the contractor's approach and progress toward meeting the Aegis BMD 5.0 requirements. -Conducted Aegis BMD 5.0 Test Planning Review to review contractor's plan (MTEPP) and assess program readiness to commence computer program testing at the development and test sites (CSEDS). -Conducted Aegis BMD 5.0 In-Process Review (IPR). -Continued interoperability studies with BMDS elements, automated mission planner data exchange with C2BMC and MIPS, utilization of improved space cue track data, and real world operations. -Provided interoperability subject matter expertise supporting execution of flight test mission plan development and data analysis. -Conducted Navy and Joint Service-level communications testing to evaluate interoperability with the overall BMDS and Navy elements. -Completed development of C4I web services in GCCS-M to support Aegis BMD mission planning and satellite ephemeris data updates. -Continued evaluation and support of BMD data path enhancements aboard ship and at land-based communication sites. -Continued evaluation of ESL BMDS OPIR BOA space cue impacts on Aegis BMD performance. -Continued to support system integration efforts with other BMDS elements to maximize interoperability with the overall BMDS. -Supported system integration efforts with BMDS space cues provide by new Overhead Persistent Infrared (OPIR) sensors and the ELS. -Supported systems engineering efforts to incorporate interoperability. <p>Funding for these FY 2010 accomplishments are reported in prior year budget project EX09 and WX09. (\$231,798)</p> <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> -Continue the development and testing of BMD 5.0. -Design and develop computer program functionality changes. -Incorporate the functional capability into BMD 5.0 baseline development. -Prepare for and support the IPR #5, where it is anticipated that permission will be granted to code through completion. Additionally IPR #5 will serve as the Critical Design Review for BMD Guarded Unit. -Prepare for and support the Anti-Air Warfare (AAW) Radar Demonstration. 			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2010
				FY 2011
				FY 2012
<p>-Prepare for the Multi-Mission Signal Processor Radar Exercise (MMSP Radar Ex) which will demonstrate/evaluate MMSP performance with Aegis Modernization (ACB-12) computer programs in both the AAW and BMD 5.0 modes.</p> <p>-Support systems engineering efforts to incorporate interoperability enhancements including: Navy Multi Band Terminal and Advance EHF.</p> <p>-Conduct Navy and Joint Service-Level communications testing to evaluate interoperability with the overall BMDS and Navy elements.</p> <p>-Initiate design effort to increase raid size capacity, expand threat set and incorporated terminal defense.</p> <p>FY 2012 Plans:</p> <p>-Conduct Multi-Mission Signal Processor Radar Exercise.</p> <p>-Prepare for and support the Test Readiness Review (TRR) #1, as part of the roadmap to demo in anticipation of Aegis Modernization (ACB-12).</p> <p>-Prepare for and conduct Mission Readiness Assessment #1.</p> <p>-Prepare for Aegis Modernization (ACB-12) demonstration, which is an Anti-Air Warfare (AAW) and BMD functionality test.</p> <p>-Complete BMD integration into ACB-12 to include full BMD functionality.</p> <p>-Conduct testing to prove full functionality of BMD components.</p> <p>-Conduct Prime Item Development Specs (PIDS)/Critical Item Development Specs (CIDS) testing. Starting system level specification verification.</p>				
<p>Title: Aegis BMD 5.1 Development</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments:</p> <p>-Continued development of Aegis BMD 5.1 ECS to a System Readiness Review (SRR) level of maturity</p> <p>-Continued system performance analysis</p> <p>-Refined concept development of solutions to support ECS requirements feasibility in preparation for a SRR.</p> <p>-Continued execution of the modeling and simulation plan for Aegis BMD 5.1.</p> <p>-Continued collaboration with the BMDS Systems Engineering data to support BMDS test and assessment planning, including trajectory and signature data supporting system and subsystem requirements.</p> <p>-Continued early systems engineering and performance analysis of Aegis BMD 5.1 to support the SCD PDR level of maturity.</p> <p>-Continued Command, Control, Battle Management and Communications task related to the development of the Aegis BMD 5.1.</p> <p>-Supported generation of ONIR requirements to incorporate advanced algorithm and new sensors capabilities.</p>				<p>-</p> <p>0</p>
				119.585
				0
				37.810
				0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Continued systems engineering efforts to develop advanced track discrimination, correlation, and data fusion improvements. -Supported system integration efforts with other BMDS elements to maximize interoperability with the overall BMDS.</p> <p>Funding for these FY 2010 accomplishments are reported in prior year budget project WX09. (\$11,090)</p> <p>FY 2011 Plans:</p> <p>-Make final preparations for the BMD 5.1 SRR and conduct the BMD 5.1 SRR. -Close out action items from the 5.1 SRR and complete analysis necessary to finalize the Element Capability Specification (ECS) level requirements. -Flow ECS level requirements down to the Aegis BMD 5.1 System Level Specification Document (A-Spec) and conduct systems engineering necessary to develop the BMD 5.1 A-Spec. -Conduct analysis, modeling and simulation, and concept development to support early systems engineering development to reduce technical risk for BMD 5.1 Engage on Remote (EoR) and Early Intercept (EI) organic capabilities. -Initiate preparation for the BMD 5.1 System Design Review (SDR) by developing the BMD 5.1 SDR data review package. -Conduct system level performance analysis in preparation for the SCD PDR, using early engineering surrogate BMD 5.1 AWS data. -Conduct Vertical Launch System (VLS) system engineering, analysis, and design activities in support of VLS SRR. Prepare for and conduct VLS SRR.</p> <p>FY 2012 Plans:</p> <p>-Continue systems engineering and analysis to refine Aegis BMD 5.1 A-Spec. -Continue analysis and design of AWS/VLS/Missile interfaces and specifications. -Conduct VLS systems engineering, analysis, and design activities in support of VLS SDR. -Continue analysis and systems engineering for development of Aegis BMD 5.1 EoR and Early Intercept (EI) capabilities, and BMDS integration. -Continue preparation for BMD 5.1 SDR; complete SDR data package and conduct Navy Review Team (NRT) review. Conduct system-level performance analysis in preparation for the SCD CDR, using updated surrogate BMD 5.1 AWS data. -Prepare for and conduct VLS SDR.</p>				
<p>Title: SM-3 Blk IB Development</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments:</p>		-	255.168	56.070
		Articles: 0	0	0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Continued SM-3 Blk IB element integration. -Began assembly of one (1) SM-3 Blk IB Pathfinder missile for Aegis Flight Test (FTM)-16 in FY 2011 -Began manufacturing of missile canisters.</p> <p>Funding for these FY 2010 accomplishments are reported in prior year budget project EX09. (\$332,288)</p> <p>FY 2011 Plans:</p> <p>-Complete kinetic warhead (KW) System Integration Test (SIT), an end to end closed loop KW test. -Complete SM-3 Blk IB Missile Developmental Verification Tests (DVT). -Complete SM-3 Blk IB TDACS Qualification tests 1&2. -Complete SM-3 Blk IB Hazard Assessment Tests (HAT). -Conduct SM-3 Blk IB Manufacturing Readiness Review (MRR). -Deliver one (1) SM-3 Blk IB Pathfinder round for use in FTM-16. -Conduct FTM-16 initial flight test of SM-3 Blk IB Pathfinder missile. -Deliver three (3) additional SM-3 Blk IB Flight Test Rounds. -Participation in JFTM-4 Events 1-3.</p> <p>FY 2012 Plans:</p> <p>-Start production line rate increase from 2 to 4 per month. -Prepare for and conduct FTM-19 E2 and FTM-20 E2 (DT/OT), engagements against complex SRBMs. -Complete additional SM-3 Blk IB ground test (HAT, Quals, and DVT).</p>				
<p>Title: Aegis BMD Testing</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: N/A</p> <p>FY 2011 Plans:</p> <p>-Conduct U.S. participation in JFTM-04 (Japanese FMS Test). -Conduct Aegis BMD-specific analyses during pre- and post-mission analysis phases. -Support Aegis BMD-specific modeling and simulation of predicted system performance for testing. -Begin test planning for FY 2012 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test.</p>		<p>Articles:</p> <p>-</p> <p>0</p>	<p>42.672</p> <p>0</p>	<p>78.892</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2010
<p>-Participate in TOO testing. -Participate in the BMD System ground test program. -Participate in BMD special technology experiments.</p> <p>FY 2012 Plans: -Conduct Aegis BMD-specific analysis during pre- and post-mission analysis phases. -Support Aegis BMD-specific modeling and simulation of predicted system performance for testing. -Begin test planning for FY 2013 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test. -Participate in TOO testing. -Participate as a sensor in the BMD System flight test program. -Participate in the BMD System ground test program. -Participate in BMD special technology experiments.</p>				
<p>Title: Fielding - AWS</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: RDT&E Articles: One (1) upgrade to the BSP Engineering Development Model (EDM). -Procured four (4) Aegis BMD 3.6.1 shipsets. -Procured two (2) Aegis BMD 4.0.1 shipsets. -Supported a Aegis BMD 4.0.1 EDM upgrade on USS LAKE ERIE to support DEMO/CERT configuration. -Procured 1 shipset of Aegis BMD 5.0 unique equipment to support first Aegis Modernization (AMOD destroyer). Funding for these FY 2010 accomplishment are reported in prior year budget project EX09. (\$170,304)</p> <p>FY 2011 Plans: -Install two (2) BMD 3.6.1 shipset. -Procure two (2) BMD 4.0.1 shipsets (including BMD Signal Processor (BSP)). -Procure two (2) shipsets of BMD 5.0 equipment to support U.S. Navy Aegis Modernization (AMOD) schedule. -Support USS LAKE ERIE Engineering Development Model (EDM) upgrades to achieve BMD 4.0.1 tactical configuration.</p>				<p>Articles:</p> <p>- 99.030 0 0 155.473 0 0 0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Begin development efforts to add BMD capability to USN Baseline 4 Cruisers entering AMOD in 2014.</p> <p>FY 2012 Plans:</p> <p>-Install two (2) BMD 3.6.1 shipsets. -Procure four (4) BMD 4.0.1 equipped shipsets. -Install two (2) BMD 4.0.1 equipped shipsets. -Procure five (5) BMD 5.0 equipped shipsets. -Install one (1) BMD 5.0 equipped shipset.</p>				
<p>Title: SM-3 Manufacturing</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: RDT&E Articles: Eight (8) SM-3 Blk IA Missiles</p> <p>-Delivered remaining eight (8) SM-3 Blk IA missiles.</p> <p>Funds for these FY 2010 accomplishments are reported in prior year budget project EX09. (\$65,739)</p> <p>FY 2011 Plans:</p> <p>-Procure thirty (30) SM-3 Blk IB missiles. -Begin manufacturing of thirty (30) SM-3 Blk IB missiles.</p> <p>FY 2012 Plans:</p> <p>-Deliver twelve (12) of thirty (30) SM-3 Blk IB missiles. -Continue manufacturing the remainder of thirty (30) SM-3 Blk IB missiles begun in FY11 for delivery in FY13.</p>		Articles:	- 0	164.897 0
				110.810 0
<p>Title: SM-3 Production Support</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: N/A</p> <p>FY 2011 Plans:</p>		Articles:	- 0	44.902 0
				45.401 0

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2010
				FY 2011
				FY 2012
<ul style="list-style-type: none"> -Continue to monitor performance of SM-3 Block IA. -Monitor obsolete material replacement effort. -Conduct ground tests for lot qualification of components. -Continue manufacturing of SM-3 VLS canisters. -Participate in FTM-15. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> -Continue to monitor performance of SM-3 Blk IA & IB. -Monitor obsolete material replacement effort. -Design alternatives for obsolete material replacement efforts. -Conduct ground tests for lot qualification of components. -Participate in Flight Test Operation (FTO) -1. -Provide in-service engineering support for SM-3 Blk IA missiles. 				
<p>Title: Fleet Integration</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> -Provide In-service Engineering support to Aegis BMD: Weapon System and VLS. -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 VLS. -Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. -Respond to Fleet issues related Aegis BMD installations, BMD operations and BMD events. <p>Funding for these FY 2010 accomplishments are reported in prior year budget project XX09. (\$24,358)</p> <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> -Provide In-service Engineering support to Aegis BMD: Weapon System and VLS. -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 VLS. -Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. 				<p>-</p> <p>0</p> <p>27.902</p> <p>0</p> <p>13.441</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012	
<p>-Respond to Fleet issues related to Aegis BMD installations, BMD operations and BMD events.</p> <p>FY 2012 Plans:</p> <p>-Provide In-service Engineering support to Aegis BMD: Weapon System and VLS. -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 VLS. -Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. -Respond to Fleet issues related to Aegis BMD installations, BMD operations and BMD events.</p>					
<p>Title: SM-3 Operations & Support</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments:</p> <p>-Provided In-service Engineering support to Aegis BMD: SM-3 missile. -Provided operational and maintenance training for Aegis BMD ship crews. -Provided logistics support (including technical manuals and spares) for Aegis BMD: SM-3 Missile. -Responded to Fleet issues related to Aegis BMD operations and BMD events.</p> <p>Funds for these FY 2010 Accomplishments are reported in prior year budget project XX09. (\$78,603)</p> <p>FY 2011 Plans:</p> <p>-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 installations, BMD operations and BMD events.</p> <p>FY 2012 Plans:</p> <p>Funds for FY 2012 Accomplishments are reported in budget project MX09.</p>		Articles:	- 0	36.400 0	- 0
<p>Title: M&S HWIL Framework, Simulations, Models</p>		Articles:	- 0	69.937 0	55.460 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>Description: See Description Below</p> <p>FY 2010 Accomplishments: N/A</p> <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> -Deploy and integrate the common BMDS HWIL simulation framework--Single Simulation Framework (SSF) with the Elements for BMDS ground and flight tests and training -Develop and integrate the HWIL Single Simulation Framework (SSF) at COCOM, training, and exercise Host Nation locations -Maintain the Missile Defense System Exerciser (MDSE) framework for support of MDA exercises until SSF has absorbed the MDSE mission area (FY12) -Incorporate an Single Simulation Framework (SSF) Releasable version to support Israeli Program Host Nation implementation -Provide capability to integrate the BMDS stimulation framework with the ARROW HWIL facility in Israel -Integrate the SSF with additional Allied/Coalition elements to expand distributed BMDS ground test and exercise venues -Provide an HWIL Post Flight Reconstruction capability (through SSF) -Incorporate real time PLET-C environment model upgrades into the HWIL SSF -Initiate implementation of the Cobra Dane closure interface development -Plan the integration of SSF with UEWR CLEAR AFS -Conduct BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos -Continue development of the SSF to support execution of increasingly more complex BMDS ground test campaigns; identify interdependencies required for execution -Complete integration of the SSF with the Ground-based Missile Defense fielded assets -Initiate integration of the common Radar Digital Signal Injection System with X-Band radars -Plan integration of the SSF with the DSA into the Objective Simulation Framework (OSF) -Plan and provide for SSF sustainment, maintenance and product support -Implement support of wide band debris for BMDS sensors in SSF -Integrate the BMDS SSF with additional MDA sensors, as they come on-line -Support Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation -Continued development, deployment and integration of SSF for GM/SN stand-alone training and DMETS -Conduct initial SSF Objective Hardware performance assessment -In support of the MDA Integrated Master Test Plan (IMTP) develop an SSF software capability for a 2nd parallel test string -Initiate Open Architecture redesign of SSF 			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency		DATE: February 2011		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Initiate improved Instantaneous Object Processing capability</p> <p>FY 2012 Plans:</p> <p>-Complete deployment and integration of BMDS HWIL stimulation framework--Single Simulation Framework (SSF) with Elements for BMDS ground, flight tests and training</p> <p>-Implement upgrades to the BMDS HWIL SSF that support execution of increasingly more complex BMDS ground test campaigns</p> <p>-Demonstrate the SSF has incorporated MDSE framework capabilities to support MDA exercises</p> <p>-Provide Single Simulation Framework (SSF) support to Post Flight Reconstruction activities</p> <p>-Complete Cobra Dane closure interface development</p> <p>-Conduct BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos</p> <p>-Begin integration of the SSF with the DSA into the OSF</p> <p>-Begin Optimistic Sensor Model (OSM) integration into SSF</p> <p>-Provide for SSF sustainment, maintenance and product support</p> <p>-Integrate the BMDS HWIL SSF with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture</p> <p>-Continue Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation</p> <p>-Deploy and integrate BDMS HWIL SSF to support GM and SN stand-alone training and the DMETS capability</p> <p>-Begin deployment and integration of BMDS HWIL SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners</p> <p>-Begin installation of BMDS HWIL SSF software capability (funded by MDA/DESH) and necessary hardware/ maintenance (funded by MDA/DTR) to support a 2nd parallel test string (Ground Test assets only).</p> <p>-Demonstrate initial OA redesign capabilities</p> <p>-Demonstrate improved Instantaneous Object Processing capabilities</p> <p>-Deploy and install SSF node in fielded AN/TPY-02 shelter</p> <p>-Begin development of Real Time, scaled Real Time, non Real Time operational modes</p>				
<p>Title: BMDS Level Testing</p> <p align="right">Articles:</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: This task provides funding for Aegis BMD flight testing, as well as Aegis BMD participation in BMDS level testing. Each of these test opportunities provides valuable system performance information in support of Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs).</p>		-	110.161	99.884
		0	0	0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>-Participated in FMS flight mission JFTM-3 campaign consisting of 2 ARAV-B tracking exercises (TRACKEX), anti-air warfare (AAW) TRACKEX, and engagement of a Medium Range Target (MRT) with an SM-3 Blk IA.</p> <p>-Participated in TOO testing</p> <p>-Participated as a sensor in BMD System testing:</p> <p>-FTX-16: simulated SM-3 engagement with an ERALT target with one BMD 3.6.1 ship using STSS as a cueing sensor</p> <p>-CV2 USFT-4: multiple Arrow engagements involving a Short Range Air Launch Target (SRALT) and another ballistic missile target</p> <p>-FES-1: Track and simulate engagement with STSS in the fire control loop</p> <p>Funding for these FY 2010 accomplishments are reported in prior year budget project EX09. (\$104,053)</p> <p><i>FY 2011 Plans:</i></p> <p>-Conduct FTM-15 flight test mission:</p> <p>-Exercise of Phase 1 capability of the Phased Adaptive Approach.</p> <p>-Conduct a BMD 3.6.1 engagement and intercept with an SM-3 Blk IA missile against an MRBM target</p> <p>-BMDS connectivity with AN/TPY-2 via C2BMC</p> <p>-Conduct FTM-16 flight test mission:</p> <p>-</p> <p>-Conduct a BMD 4.0.1 engagement and intercept of a Medium Range Target (MRT) emulating a separating target with an SM-3 Blk IB missile.</p> <p>-Conduct a BMD 4.0.1 simulated SM-3 Blk IB engagement against an ARAV-C++, an SRBM target.</p> <p>-Conduct a BMD 4.0.1 AAW exercise using SM-2 Blk IIIA missile against a cruise missile target.</p> <p>-Complete pre-flight analysis to verify mission scenarios and to predict future performance.</p> <p>-Prepare and complete missile delivery package for the Mission Control Panel reviews.</p> <p>-Perform post-flight analysis to validate high-fidelity models and simulations.</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Complete post-flight analysis to support Mission Data Reviews (MDRs). -Participate in GMD Intercept Flight Test (FTG)-06a.</p> <p>FY 2012 Plans: -Conduct FTM-19 E2 and FTM-20 E2 (DT/OT)</p> <p>-Conduct a BMD 4.0.1 (CG) engagement and intercept against a ARAV-C SRBM target with an SM-3 Blk IB missile. -Conduct a BMD 4.0.1 (CG) engagement and intercept against a ARAV-C++ SRBM target with an SM-3 Blk IB missile -Conduct FTO-1, an BMDS level OT event.</p>				
<p>Title: Systems Engineering & Integration</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: N/A</p> <p>FY 2011 Plans: -Produce all the threat data required to enable Ballistic Missile Defense System Ground Tests for PAA Phase 1 (GT-04D), Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan -Produce parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach -Validate that Ballistic Missile Defense System test targets (such as FTG-06a, FTM-15, and FTT-10B) are threat representative -Continue planning and coordination for real-time track demonstrations using an unmanned aerial vehicle (UAV) (associated with scheduled BMDS test events) using an existing airborne platform -Start threat systems engineering work to support future systems design. -Aegis Ashore was moved to PE 0604880C, budget project MD68.</p> <p>FY 2012 Plans: -Produce all the threat data required to enable Ballistic Missile Defense System Ground Tests (GT-05), Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan -Produce parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach</p>		<p>Articles:</p> <p>- 0</p>	<p>26.588</p> <p>0</p>	<p>19.794</p> <p>0</p>

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Validate that Ballistic Missile Defense System test targets (FTG-08, FTT-13, and FTM-23) are threat representative -Continue threat systems engineering work to support future systems design</p> <p>Title: Aegis BMD 3.6.1 Development</p> <p>Description: See Description Below</p> <p>FY 2010 Accomplishments: -Complete checkout of Aegis BMD 3.6.1 - capable Cruisers and Destroyers. -Complete crew training. -Evaluated External Sensors Laboratory (ESL) BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) space cue impacts in Aegis BMD performance. -Provided on-going support for contingency operations. -Provided subject matter expertise support for the fielded Aegis BMD 3.6.1 baseline -Supported systems engineering efforts to incorporate interoperability enhancements including:</p> <p>-Navy Multi-Band Terminal -Advanced EHF -Continued support of system integration efforts with other BMDS elements to maximize interoperability with the overall BMDS. -Aegis Ashore accomplishments for FY 2010 are reflected in PE 0604880C budget project MD68.</p> <p>Funding for these FY 2010 accomplishments are reported in prior year budget project BX18 and BX09. (\$9,125)</p> <p>FY 2011 Plans: -Complete pre-flight analysis to verify mission scenarios and to predict flight performance. -Prepare for and execute FTM-15 (DT/OT). -Continue evaluation and support for BMD data path enhancements aboard ship and at land-based communication sites. -Continue to evaluate ESL BMDS OPIR BOA space cue impacts on Aegis BMD performance. -Provide ongoing support for contingency operations. -Provide subject matter expert support for the fielded Aegis BMD 3.6.1 baseline.</p> <p>FY 2012 Plans: N/A</p> <p>Title: M&S Digital Framework, Simulation, Models</p>		-	2.385	-
		0	0	0
		-	4.365	4.540

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Articles:		0	0	0
Description: See Description Below				
FY 2010 Accomplishments: N/A				
FY 2011 Plans: Develop and deliver major releases of M&S digital products:				
<ul style="list-style-type: none"> -Digital Simulation Architecture framework for use in Technical Assessments -Missile Defense Space warning Tool (MDST) for use in Technical Assessments and warfighter Exercises -BMD International Simulation for use in International virtual BMD demonstrations, BMD education, and warfighter wargames -Integrate, test, functionally qualify, and deliver BMDS constructive Performance Assessment Simulation (utilizing DSA and MDST) to support full-envelope BMDS performance assessment for Technical Assessments -Continue software operations/maintenance of the Extended Air Defense Simulation (EADSIM) code base for use in warfighter exercises -Provide software support for PATRIOT System Effectiveness Model (PSEM) for use in Technical Assessments -Provide transitional DSA framework/modeling support to C2BMC software Spiral Testing for MDA's release of C2BMC v8.x development -Procure, install and maintain Performance Assessment Simulation ``ensembles`` for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL 				
FY 2012 Plans: Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses:				
<p>Performance Assessment Simulation (utilizing DSA, MDST, and Element-provided high-resolution models) to support full-envelope BMDS performance assessment for Performance Assessment events</p> <p>Real-time Digital Simulation (utilizing DSA, MDST, and Element-provided medium-resolution models) to support warfighter Exercises, warfighter Training, Element spiral development, and Ground Test campaign</p>				
Title: M&S VV&A and Test Operations		-	38.119	10.686
Articles:		0	0	0
Description: See Description Below				

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010
<p>FY 2010 Accomplishments: N/A</p> <p>FY 2011 Plans: -Planned/On-going: Provide integrated VV&A of MDA M&S at the system level for specific events, to include Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and tier one COCOM exercises. -Planned/On-going: Develop integrated VV&A event Plans and Reports for Focused Ground Tests, Integrated Ground Tests, Performance Assessments and Assured Response -Planned/On-going: Plan and specify system post-flight reconstructions events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level VV&A associated with Post Ground Test Reconstructions and System Post Flight Digital Reconstructions -Planned/On-going: Work closely with Elements, Test Community, System Engineering, and OTA to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree -Planned/On-going: Conduct system-level verification and validation of threat trajectory and signature; end-to-end environmental implementation is consistent and correct; communications and architecture behave properly; and interoperability is adequately addressed -Planned/On-going: Develop and implement M&S standards consistent with industry best practices -Planned/On-going: Conduct annual review of BMDS Element VV&A programs -Planned/On-going: Develop, implement and configure control of web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure M&S improvement -Planned/On-going: Lead BMDS VV&A working group to improve VV&A operations and ultimately improve BMDS performance -Planned/On-going: Develop and implement metrics for system-level M&S to increase efficiencies and effectiveness</p>			
			FY 2011
			FY 2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>-Planned/On-going: Ensure that individual BMDS elements and components properly VV&A their own models</p> <p><i>FY 2012 Plans:</i></p> <p>-Provide integrated VV&A of MDA M&S at the system level for specific events, to include Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and tier one COCOM exercises: GTX-04e, GTI-04e, PA-04, PA-06, and AR-06x</p> <p>-Develop integrated VV&A event Plans and Reports for GTX-04e, GTI-04e, PA-04, PA-06, and AR-06x</p> <p>-Plan and specify system post-flight reconstructions and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level VV&A associated with these events: GTX-04e SPGR, FTG-08 HWIL SPFR, FTG-08 Digital SPFR, FTM-19 HWIL SPFR, FTM-19 Digital SPFR, GTI-04e SPGR</p> <p>-Work closely with Elements, Test Community, System Engineering, and OTA to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree</p> <p>-Conduct system-level verification and validation of threat trajectory and signature; end-to-end environmental implementation is consistent and correct; communications and architecture behave properly; and interoperability is adequately addressed</p> <p>-Develop and implement M&S standards consistent with industry best practices</p> <p>-Conduct annual review of BMDS Element VV&A programs</p> <p>-Develop, implement and configure control of web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure M&S improvement</p> <p>-Lead BMDS VV&A working group to improve VV&A operations and ultimately improve BMDS performance</p> <p>-Develop and implement metrics for system-level M&S to increase efficiencies and effectiveness</p> <p>-Ensure that individual BMDS elements and components properly VV&A their own models</p>				
Accomplishments/Planned Programs Subtotals		-	1,412.560	906.368

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	544.352	454.859	222.374		222.374	357.271	336.514	318.321	348.944	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	737.863	1,113.425	1,071.039		1,071.039	898.680	790.906	787.113	878.215	Continuing	Continuing
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	355.870	402.769	373.563		373.563	331.203	314.193	336.749	346.560	Continuing	Continuing
• 0603896C: <i>BMD C2BMC</i>	327.074	342.625	364.103		364.103	330.337	353.081	338.835	304.217	Continuing	Continuing
• Line Number 34: <i>AEGIS BMD</i>	225.625	94.080	565.393		565.393	675.126	737.440	807.883	1,025.521	Continuing	Continuing

D. Acquisition Strategy

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

Competition will be maximized for procurement of any products or services in FY 2012, as appropriate.

The M&S acquisition strategy utilizes full and open competition to develop, acquire and deliver the integrated architectures/frameworks, as well as develop and deliver models of AEGIS systems. The Digital and HWIL product centers integrate the suite of M&S into a composite simulation capability, all based on an open architecture. M&S achieves this end-state via close collaboration between its integrating contractor teams (Digital and HWIL) and those of the AEGIS BMD prime contractors, with additional technical standards and engineering oversight provided by Federally Funded Research and Development Centers and University Affiliated Research Centers. In addition, in FY12 the Objective Simulation Framework (OSF) contract will be awarded. This full-and-open competition will unify M&S framework development efforts to allow seamless end-to-end representation of the BMDS, across HWIL and Digital domains, to support all Use Cases at substantial savings to the Agency.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency **DATE:** February 2011

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT MD09	MIPR	NSWC/DD:DAHLGREN, VA	45.235	14.444	Oct 2010	3.500	Oct 2011	-		3.500	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184870177 MD09	MIPR	NSWC/PHD:PT. HUENEME, CA	8.929	0.883	Oct 2010	0.600	Oct 2011	-		0.600	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184870181 MD09	MIPR	JHU/APL/MD:COLUMBIA, MD	14.901	3.005	Oct 2010	4.000	Oct 2011	-		4.000	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT MD09	MIPR	VARIOUS:NJ, VA, CA	-	10.818	Oct 2010	10.208	Oct 2011	-		10.208	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 2009818529913 MD09	SS/CPIF	LOCKHEED MARTIN:MOORESTOWN, NJ	581.407	52.025	Oct 2010	6.000	Oct 2011	-		6.000	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT MD09	SS/CPAF	RAYTHEON/AZ:TUCSON, AZ	-	1.900	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20107192145978 MD09	MIPR	AEGIS BMD:DAHLGREN, VA	30.888	22.999	Oct 2010	13.369	Oct 2011	-		13.369	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT MD09	SS/CPIF	LOCKHEED MARTIN:MOORESTOWN, NJ	267.776	135.125	Oct 2010	56.325	Oct 2011	-		56.325	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20107152175802 MD09	MIPR	NSWC/DD:DAHLGREN, VA	15.808	7.254	Oct 2010	7.303	Oct 2011	-		7.303	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20107152175806 MD09	MIPR	NSWC/PHD:PT. HUENEME, CA	-	1.084	Oct 2010	0.370	Oct 2011	-		0.370	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20107152175811 MD09	MIPR	JHU/APL/ MD:COLUMBIA, MD	16.790	5.230	Oct 2010	2.260	Oct 2011	-		2.260	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20107152175816 MD09	MIPR	VARIOUS:NJ, VA, CA	17.280	27.314	Oct 2010	41.150	Oct 2011	-		41.150	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT MD09	C/CPAF	RAYTHEON/ AZ:TUCSON, AZ	-	0.030	Oct 2010	-		-		-	0.000	0.030	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20107192160744 MD09	SS/CPAF	RAYTHEON/ AZ:TUCSON, AZ	-	4.000	Oct 2010	5.237	Oct 2011	-		5.237	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT MD09	MIPR	AEGIS BMD:AZ, VA, CA	-	-		10.175	Oct 2011	-		10.175	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT MD09	MIPR	NSWC/ DD:DAHLGREN, VA	17.054	7.895	Oct 2010	1.649	Oct 2011	-		1.649	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098185276634 MD09	MIPR	NSWC/PHD:PT HUENEME, CA	0.349	0.700	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098185276644 MD09	MIPR	JHU/APL/ MD:COLUMBIA, MD	13.323	7.380	Oct 2010	1.524	Oct 2011	-		1.524	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098185276648 MD09	SS/CPAF	LOCKHEED MARTIN:MOORESTOWN, NJ	46.943	63.430	Oct 2010	8.841	Oct 2011	-		8.841	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098185276658 MD09	SS/CPAF	RAYTHEON/ AZ:TUCSON, AZ	-	0.210	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development VARIOUS MD09	MIPR	VARIOUS:NJ, VA, CA	-	4.541	Oct 2010	9.164	Oct 2011	-		9.164	Continuing	Continuing	Continuing
	MIPR	AEGIS BMD:AZ, VA, CA	49.605	-		4.802	Oct 2011	-		4.802	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency **DATE:** February 2011

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT MD09													
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT MD09	SS/CPAF	Raytheon:Tucson, AZ	512.977	158.595	Oct 2010	21.762	Oct 2011	-		21.762	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184846516 MD09	MIPR	NSWC/DD:Dahlgren, VA	21.110	4.122	Oct 2010	0.649	Oct 2011	-		0.649	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 2009818484652 MD09	MIPR	JHU/APL/MD:Columbia, MD	21.585	12.262	Oct 2010	1.791	Oct 2011	-		1.791	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184846525 MD09	MIPR	NSWC/PHD:Port Huneme, CA	6.603	1.754	Oct 2010	0.931	Oct 2011	-		0.931	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184846531 MD09	MIPR	VARIOUS:VA, AZ, CA	10.105	4.915	Oct 2010	3.143	Oct 2011	-		3.143	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT MD09	MIPR	AEGIS BMD:VA, AZ, CA	44.372	22.000	Oct 2010	6.352	Oct 2011	-		6.352	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing MD09	MIPR	NSWC/ DD:DAHLGREN, VA	-	3.621	Oct 2010	0.425		-		0.425	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - 20108254188681 MD09	MIPR	NSWC/PHD:PT. HUENEME, CA	-	2.853	Oct 2010	-		-		-	0.000	2.853	0.000
Aegis BMD Testing Aegis BMD Testing - 20108254188688 MD09	MIPR	JHU/APL/ MD:COLUMBIA, MD	-	7.971	Oct 2010	3.250		-		3.250	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - 20108254188694 MD09	MIPR	Various:NJ, VA, CA	-	4.181	Oct 2010	48.592		-		48.592	Continuing	Continuing	Continuing
	MIPR	SPAWAR:SAN DIEGO, CA	-	1.016	Oct 2010	-		-		-	0.000	1.016	0.000

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Testing Aegis BMD Testing - 20108254188698 MD09													
Aegis BMD Testing Aegis BMD Testing - 20108254188703 MD09	MIPR	Corona:Corona, CA	-	1.383	Oct 2010	-		-		-	0.000	1.383	0.000
Aegis BMD Testing Aegis BMD Testing MD09	C/CPAF	Lockheed Martin:Moorestown, NJ	-	-		0.825	Oct 2011	-		0.825	Continuing	Continuing	Continuing
Aegis BMD Testing Aegis BMD Testing - 20108254205089 MD09	MIPR	Aegis BMD:VA, AZ, CA	-	-		25.800	Oct 2011	-		25.800	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING MD09	SS/CPAF	Lockheed Martin:Moorestown, NJ	89.449	56.400	Oct 2010	74.957	Oct 2011	-		74.957	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - 20098184698109 MD09	MIPR	NSWC/PHD:Port Hueneme, CA	25.171	5.000	Oct 2010	11.106	Oct 2011	-		11.106	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - 20098184698114 MD09	MIPR	NSWC/DD:Dahlgren, VA	14.995	10.000	Oct 2010	6.353	Oct 2011	-		6.353	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - 20098184698117 MD09	C/CPAF	Raytheon:Washington, DC	-	3.800	Oct 2010	11.106	Oct 2011	-		11.106	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - 20098184698123 MD09	MIPR	PEO IWS:Minneapolis, MN	-	2.300	Oct 2010	3.184	Oct 2011	-		3.184	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - 20098184698133 MD09	MIPR	AEGIS TECHREP:Moorestown, NJ	-	1.700	Oct 2010	1.600	Oct 2011	-		1.600	Continuing	Continuing	Continuing
Fielding - AWS AWS FIELDING - 20098184698138 MD09	MIPR	Various:NJ, VA, CA	52.547	19.830	Oct 2010	47.167	Oct 2011	-		47.167	Continuing	Continuing	Continuing
SM-3 Manufacturing SM-3 BLK IB MANUFACTURING MD09	SS/CPAF	Raytheon:Tucson, AZ	94.645	161.007	Oct 2010	100.040	Oct 2011	-		100.040	Continuing	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SM-3 Manufacturing SM-3 BLK IB MANUFACTURING - 20098184912603 MD09	MIPR	NSWC/DD:Port Hueneme, CA	2.056	1.945	Oct 2010	0.409	Oct 2011	-		0.409	Continuing	Continuing	Continuing
SM-3 Manufacturing SM-3 BLK IB MANUFACTURING - 20098184912608 MD09	MIPR	Various:MD, AZ	9.815	1.945	Oct 2010	10.361	Oct 2011	-		10.361	Continuing	Continuing	Continuing
SM-3 Production Support PRODUCTION SUPPORT - CANISTERS MD09	MIPR	PEO IWS:Minneapolis, MN	-	15.800	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
SM-3 Production Support PRODUCTION SUPPORT - PRODUCTION ENGINEERING MD09	SS/CPAF	Raytheon:Tucson, AZ	-	29.102	Oct 2010	45.401	Oct 2011	-		45.401	Continuing	Continuing	Continuing
Fleet Integration AWS O&S MD09	SS/CPIF	Lockheed Martin:Moorestown, NJ	34.265	10.500	Oct 2010	4.590	Oct 2011	-		4.590	Continuing	Continuing	Continuing
Fleet Integration AWS O&S - 20098185191909 MD09	MIPR	NSWC/DD:Dahlgren, VA	2.342	2.602	Oct 2010	0.794	Oct 2011	-		0.794	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION MD09	MIPR	JHU/APL/MD:Columbia, MD	1.229	2.070	Oct 2010	1.010	Oct 2011	-		1.010	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - 20098185191927 MD09	MIPR	CSCS:Dahlgren, VA	5.833	2.837	Oct 2010	1.322	Oct 2011	-		1.322	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - 20098185191938 MD09	MIPR	NSWC/DD:Dahlgren, VA	7.284	3.535	Oct 2010	1.634	Oct 2011	-		1.634	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - 20098185191945 MD09	MIPR	NSWC/PHD:Port Hueneme, CA	11.829	3.198	Oct 2010	1.588	Oct 2011	-		1.588	Continuing	Continuing	Continuing
Fleet Integration FLEET INTEGRATION - 20098185191952 MD09	MIPR	Various:VA, MD, CA, HI	5.235	3.160	Oct 2010	1.467	Oct 2011	-		1.467	Continuing	Continuing	Continuing
Fleet Integration AWS O&S MD09	MIPR	VARIOUS:VA, NJ, CA	-	-		1.036	Oct 2011	-		1.036	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SM-3 Operations & Support SM-3 O&S - MAINTENANCE MD09	SS/CPAF	Raytheon:Tucson, AZ	7.237	6.400	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
SM-3 Operations & Support SM-3 O&S - SPARES MD09	SS/CPAF	Raytheon:Tucson, AZ	32.971	30.000	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models Single Stimulation Framework & Objective Simulation Framework, Procure, Install, Test MD09	C/CPAF	Boeing:AL	44.981	55.690	Oct 2010	55.460		-		55.460	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models DSA/SSF Integration MD09	C/CPAF	Boeing:AL	7.259	14.247	Oct 2010	-	Feb 2012	-		-	Continuing	Continuing	Continuing
Systems Engineering & Integration Industry MD09	C/CPAF	Boeing:VA	-	12.117		-		-		-	Continuing	Continuing	Continuing
Systems Engineering & Integration CSS MD09	C/CPFF	CSC:VA	-	7.811		-		-		-	Continuing	Continuing	Continuing
Systems Engineering & Integration CSS - 200912165600225 MD09	C/CPFF	Cobham:CA	-	6.660		-		-		-	Continuing	Continuing	Continuing
Systems Engineering & Integration SEI&T MD09	MIPR	MDA:ARLINGTON, VA	-	-	Oct 2010	19.794	Oct 2011	-		19.794	Continuing	Continuing	Continuing
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT MD09	MIPR	NSWC/DD:DAHLGREN, VA	36.316	0.631	Oct 2010	-		-		-	0.000	36.947	0.000
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - 20107164850459 MD09	MIPR	NSWC/PHD:PT. HUENME, CA	23.017	0.283	Oct 2010	-		-		-	0.000	23.300	0.000
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - 20107164850464 MD09	MIPR	JHU/APL/MD:COLUMBIA, MD	41.290	0.330	Oct 2010	-		-		-	0.000	41.620	0.000

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD 3.6.1 Development BMD 3.6.1 DEVELOPMENT - 20107164850469 MD09	MIPR	VARIOUS: NJ, VA, CA	91.009	1.141	Oct 2010	-		-		-	0.000	92.150	0.000
M&S Digital Framework, Simulation, Models Digital Simulation Architecture MD09	C/CPAF	Northrop Grumman: CO	4.056	4.365		4.540		-		4.540	Continuing	Continuing	Continuing
Subtotal			2,387.871	1,071.346		704.916		-		704.916			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT MD09	MIPR	MDA: Arlington, VA	34.591	1.653	Oct 2010	2.132	Oct 2011	-		2.132	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410791 MD09	MIPR	NAVSEA: Washington, DC	15.876	2.086	Oct 2010	1.468	Oct 2011	-		1.468	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410797 MD09	C/CPFF	GDIT: Dahlgren, VA	66.760	6.058	Oct 2010	3.165	Oct 2011	-		3.165	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410803 MD09	C/CPFF	Paradigm: Dahlgren, VA	16.122	1.699	Oct 2010	1.252	Oct 2011	-		1.252	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410811 MD09	C/CPFF	Gryphon: Dahlgren, VA	3.529	0.272	Oct 2010	0.215	Oct 2011	-		0.215	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD	MIPR	Various: Dahlgren, VA	-	4.817	Oct 2010	-		-		-	0.000	4.817	0.000

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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
4.0.1 DEVELOPMENT - 20098184410817 MD09													
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410825 MD09	C/CPHF	Lockheed Martin:Arlington, VA	1.765	0.241	Oct 2010	-		-		0.000	2.006	0.000	
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410834 MD09	C/CPAF	Raytheon:Arlington, VA	1.765	0.195	Oct 2010	-		-		0.000	1.960	0.000	
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410842 MD09	MIPR	Aegis BMD:Dahlgren, VA	-	2.628	Oct 2010	0.520	Oct 2011	-		0.520	Continuing	Continuing	Continuing
Aegis BMD 4.0.1 Development BMD 4.0.1 DEVELOPMENT - 20098184410848 MD09	MIPR	MDA Various:Arlington, VA	-	17.000	Oct 2010	7.262	Oct 2011	-		7.262	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT MD09	MIPR	MDA:Arlington, VA	9.614	2.436	Oct 2010	7.146	Oct 2011	-		7.146	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184413988 MD09	MIPR	NAVSEA:Washington, DC	4.464	3.071	Oct 2010	3.349	Oct 2011	-		3.349	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184413994 MD09	C/CPFF	GDIT:Dahlgren, VA	-	8.921	Oct 2010	9.488	Oct 2011	-		9.488	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414005 MD09	C/CPFF	Paradigm:Dahlgren, VA	4.327	2.502	Oct 2010	2.857	Oct 2011	-		2.857	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414009 MD09	C/CPFF	Gryphon:Dahlgren, VA	0.993	0.401	Oct 2010	0.491	Oct 2011	-		0.491	Continuing	Continuing	Continuing
	MIPR	Various:Dahlgren, VA	-	9.022	Oct 2010	-		-		-	0.000	9.022	0.000

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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414017 MD09													
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414022 MD09	C/CPIF	Lockheed Martin:Arlington, VA	0.495	0.354	Oct 2010	-		-		-	0.000	0.849	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414028 MD09	C/CPAF	Raytheon:Arlington, VA	-	0.287	Oct 2010	-		-		-	0.000	0.287	0.000
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414033 MD09	MIPR	Aegis BMD:Dahlgren, VA	16.900	3.695	Oct 2010	0.711	Oct 2011	-		0.711	Continuing	Continuing	Continuing
Aegis BMD 5.0 Development BMD 5.0 DEVELOPMENT - 20098184414048 MD09	MIPR	MDA Various:Arlington, VA	-	17.000	Oct 2010	17.554	Oct 2011	-		17.554	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT MD09	MIPR	MDA:Arlington, VA	-	1.547	Oct 2010	1.836	Oct 2011	-		1.836	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184460966 MD09	MIPR	NAVSEA:Washington, DC	-	1.949	Oct 2010	0.688	Oct 2011	-		0.688	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184460972 MD09	C/CPFF	GDIT:Dahlgren, VA	-	5.661	Oct 2010	2.349	Oct 2011	-		2.349	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184460977 MD09	C/CPFF	Paradigm:Dahlgren, VA	-	1.587	Oct 2010	0.734	Oct 2011	-		0.734	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 2009818446098 MD09	C/CPFF	Gryphon:Dahlgren, VA	-	0.255	Oct 2010	0.216	Oct 2011	-		0.216	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184460984 MD09	MIPR	Various:Dahlgren, VA	-	4.545	Oct 2010	1.524	Oct 2011	-		1.524	Continuing	Continuing	Continuing
	C/CPIF		-	0.225	Oct 2010	-		-		-	0.000	0.225	0.000

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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184460989 MD09		Lockheed Martin:Arlington, VA											
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184460995 MD09	C/CPAF	Raytheon:Arlington, VA	-	0.182	Oct 2010	-		-		-	0.000	0.182	0.000
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 200981844610 MD09	MIPR	Aegis BMD:Dahlgren, VA	-	2.478	Oct 2010	0.051	Oct 2011	-		0.051	Continuing	Continuing	Continuing
Aegis BMD 5.1 Development BMD 5.1 DEVELOPMENT - 20098184461008 MD09	MIPR	MDA Various:Arlington, VA	-	17.000	Oct 2010	4.432	Oct 2011	-		4.432	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT MD09	MIPR	MDA:Arlington, VA	14.562	2.698	Oct 2010	3.648	Oct 2011	-		3.648	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490094 MD09	MIPR	NAVSEA:Washington, DC	60.960	3.404	Oct 2010	1.614	Oct 2011	-		1.614	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490097 MD09	C/CPFF	GDIT:Dahlgren, VA	15.026	9.886	Oct 2010	4.842	Oct 2011	-		4.842	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490102 MD09	C/CPFF	Paradigm:Dahlgren, VA	3.235	2.772	Oct 2010	1.156	Oct 2011	-		1.156	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490106 MD09	C/CPFF	Gryphon:Dahlgren, VA	-	0.445	Oct 2010	0.458	Oct 2011	-		0.458	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490111 MD09	MIPR	Various:Dahlgren, VA	1.617	7.436	Oct 2010	-		-		-	0.000	9.053	0.000
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490116 MD09	C/CPIF	Lockheed Martin:Arlington, VA	1.617	0.392	Oct 2010	-		-		-	0.000	2.009	0.000
	C/CPAF	Raytheon:Arlington, VA	-	0.318	Oct 2010	-		-		-	0.000	0.318	0.000

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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490122 MD09													
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490127 MD09	MIPR	Aegis BMD:Dahlgren, VA	31.755	5.300	Oct 2010	0.604	Oct 2011	-		0.604	Continuing	Continuing	Continuing
SM-3 Blk IB Development SM-3 BLK IB DEVELOPMENT - 20098184490131 MD09	MIPR	MDA Various:Arlington, VA	-	18.869	Oct 2010	9.120	Oct 2011	-		9.120	Continuing	Continuing	Continuing
Aegis BMD Testing TESTING MD09	MIPR	MDA:Arlington, VA	-	1.984	Oct 2010	-		-		-	0.000	1.984	0.000
Aegis BMD Testing TESTING - 20098184514422 MD09	MIPR	NAVSEA:Washington, DC	1.528	2.504	Oct 2010	-		-		-	0.000	4.032	0.000
Aegis BMD Testing TESTING - 20098184514427 MD09	C/CPFF	GDIT:Dahlgren, VA	6.598	7.270	Oct 2010	-		-		-	0.000	13.868	0.000
Aegis BMD Testing TESTING - 20098184514434 MD09	C/CPFF	Paradigm:Dahlgren, VA	1.582	2.039	Oct 2010	-		-		-	0.000	3.621	0.000
Aegis BMD Testing TESTING - 20098184514442 MD09	C/CPFF	Gryphon:Dahlgren, VA	0.340	0.327	Oct 2010	-		-		-	0.000	0.667	0.000
Aegis BMD Testing TESTING - 20098184514461 MD09	C/CPIF	Lockheed Martin:Arlington, VA	0.170	0.289	Oct 2010	-		-		-	0.000	0.459	0.000
Aegis BMD Testing TESTING - 20098184514466 MD09	C/CPAF	Raytheon:Arlington, VA	0.170	0.234	Oct 2010	-		-		-	0.000	0.404	0.000
Aegis BMD Testing TESTING - 20098184514481 MD09	MIPR	MDA Various:Arlington, VA	2.581	7.000	Oct 2010	-		-		-	0.000	9.581	0.000
Subtotal			318.942	192.934		90.882		-		90.882			

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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing BMDS Level Testing MD09	MIPR	NSWC/DD:DAHLGREN, VA	16.497	10.021	Oct 2010	11.048	Oct 2011	-		11.048	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289191 MD09	MIPR	NSWC/PHD:PT. HUENEME, CA	5.639	10.502	Oct 2010	11.600	Oct 2011	-		11.600	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289197 MD09	MIPR	JHU/APL/MD:COLUMBIA, MD	13.696	16.809	Oct 2010	17.925	Oct 2011	-		17.925	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289202 MD09	MIPR	Various:NJ, VA, CA HI	19.420	31.567	Oct 2010	41.116	Oct 2011	-		41.116	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289206 MD09	SS/CPIF	Lockheed Martin:Moorestown, NJ	16.285	22.200	Oct 2010	10.570	Oct 2011	-		10.570	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289211 MD09	MIPR	SPAWAR:San Diego, CA	4.033	1.372	Oct 2010	6.575	Oct 2011	-		6.575	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289216 MD09	SS/CPAF	Raytheon:Tucson, AZ	-	4.500	Oct 2010	-		-		-	0.000	4.500	0.000
BMDS Level Testing BMDS Level Testing - 2010825428922 MD09	MIPR	PMRF:Barking Sands, Kauai, HI	-	7.000	Oct 2010	-		-		-	0.000	7.000	0.000
BMDS Level Testing BMDS Level Testing - 20108254289227 MD09	MIPR	NAWC/PM:PT. MUGU, CA	-	2.700	Oct 2010	1.050	Oct 2011	-		1.050	Continuing	Continuing	Continuing
BMDS Level Testing BMDS Level Testing - 20108254289231 MD09	MIPR	MDA/DTR:HUNTSVILLE, AL	-	3.490	Oct 2010	-		-		-	0.000	3.490	0.000
M&S VV&A and Test Operations M&S VV&A and Test Operations MD09	C/CPAF	Northrop Grumman:Various	8.299	38.119	Oct 2010	10.686	Oct 2011	-		10.686	73.741	130.845	67.478
Subtotal			83.869	148.280		110.570		-		110.570			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Missile Defense Agency		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 3.6.1 Ship Installations	1	2010	2	2013
BMD 4.0.1 Ship Installations	4	2010	4	2016
BMD 5.0 Ship Installations	3	2012	4	2016
BMD 4.0.1 Development	1	2010	4	2011
BMD 4.0.1 Certification	4	2011	4	2011
BMD 5.0 Development	1	2010	1	2014
BMD 5.0 Demo	1	2013	1	2013
BMD 5.0 Certification	1	2014	1	2014
BMD 5.1 System Readiness Review (SRR)	3	2011	3	2011
BMD 5.1 Development	1	2010	4	2016
BMD 5.1 System Design Review (SDR)	4	2012	4	2012
BMD 5.1 Preliminary Design Review (PDR)	4	2013	4	2013
BMD 5.1 Critical Design Review (CDR)	4	2014	4	2014
BMD 5.1 Demo	4	2016	4	2016
SM-3 Blk IB Missile Deliveries	1	2011	4	2013
SM-3 Blk IB Hazard Assessment Testing	1	2011	2	2012
SM-3 Blk IB Manufacturing Readiness Review (MRR)	2	2011	2	2011
SM-3 Blk IIA System Design Review (SDR)	1	2010	1	2010
BMD 5.0 Critical Design Review	1	2010	1	2010
BMD 4.0.1 Demo	3	2010	3	2010
SM-3 Blk IA Deliveries	1	2010	4	2010
SM-3 Blk IB System Integration Test (SIT)	1	2011	1	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Missile Defense Agency		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD09: <i>Aegis BMD</i>

Events	Start		End	
	Quarter	Year	Quarter	Year
SM-3 Blk IIA (SCD) Requirements Finalization Review (RFR)	1	2010	1	2010
SM-3 Blk IB Software Final Qualification Test (FQT)	1	2011	1	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MX09: <i>Aegis BMD Development Support</i>	-	-	12.600	-	12.600	51.400	46.300	43.500	37.900	0.000	191.700
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

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 and processes, maintained and funded by the Navy.

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

	FY 2010	FY 2011	FY 2012
Title: Aegis BMD Operations and Support	-	-	12.600
Articles:	0	0	0
Description: See Description Below			
FY 2010 Accomplishments: N/A			
FY 2011 Plans: Funds for FY 2011 Accomplishments were reported in prior year budget project MD09.			
FY 2012 Plans: -Continue systems engineering and analysis to refine Aegis BMD 5.1 A-Spec. -Continue analysis and design of AWS/VLS/Missile interfaces and specifications. -Continue analysis and systems engineering for development of Aegis BMD 5.1 EoR and Early Intercept capabilities, and BMDS integration. -Continue preparation for BMD 5.1 SDR.			
Accomplishments/Planned Programs Subtotals	-	-	12.600

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

N/A

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,

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603892C: <i>BMD AEGIS</i>	MX09: <i>Aegis BMD Development Support</i>

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

Competition will be maximized for procurement of any products or services in FY 2012, as appropriate.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Operations and Support ABMD O&S 4.0.1 MX09	MIPR	VARIOUS:/NJ, VA, CA	-	-		12.600	Oct 2011	-		12.600	Continuing	Continuing	Continuing
Subtotal			-	-		12.600		-		12.600			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		12.600		-		12.600			

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT ZX40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
ZX40: <i>Program-Wide Support</i>	40.610	-	-	-	-	-	-	-	-	0.000	40.610
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11

A. Mission Description and Budget Item Justification

Project ZX40 has been transferred project MD40.

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

	FY 2010	FY 2011	FY 2012
Title: Civilian Salaries and Support	40.610	-	-
Articles:	0		
Description: See Description Below			
FY 2010 Accomplishments: NA			
Accomplishments/Planned Programs Subtotals	40.610	-	-

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

N/A

D. Acquisition Strategy

NA

E. Performance Metrics

NA

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603892C: <i>BMD AEGIS</i>				MD40: <i>Program-Wide Support</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	54.718	41.299	-	41.299	40.125	44.933	41.507	44.062	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development Contracts (FFRDC) providing integrity and oversight of the BMDS as well as supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2 after FY 2011), such as physical and technical security, legal services, travel and agency training, office and equipment leases, rents and utilities, data and unified communications support, supplies and maintenance, and similar operating expenses. Also includes legal settlements, and foreign currency fluctuations on a limited number of foreign contracts. In keeping with congressional intent, PWS is allocated among the PEs on a pro-rata basis and therefore fluctuates by year based on the total MDA budget and the individual PE's budget amount.

Funding for the FY 2010 accomplishments is reported in prior year budget project ZX40 (\$51,626).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Civilian Salaries and Support	-	54.718	41.299
Articles:	0	0	0
Description: See Description Below			
FY 2010 Accomplishments: Funding for the FY 2010 accomplishments is reported in prior year budget project ZX40 (\$51,626).			
FY 2011 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	54.718	41.299

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603892C: <i>BMD AEGIS</i>	PROJECT MD40: <i>Program-Wide Support</i>

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

NA