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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	4,376.715	761.646	830.647	959.066	-	959.066	841.738	700.596	592.940	528.744	Continuing	Continuing
MD09: <i>Aegis BMD</i>	4,239.262	669.587	719.565	846.028	-	846.028	733.184	593.543	497.562	435.442	Continuing	Continuing
MC09: <i>Cyber Operations</i>	0.820	0.880	0.870	0.879	-	0.879	0.885	0.884	0.884	0.901	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	-	32.016	73.118	68.283	-	68.283	66.770	70.406	63.884	64.285	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	136.633	59.163	37.094	43.876	-	43.876	40.899	35.763	30.610	28.116	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

The FY 2017 increase is to fund pre-production development and test All-Up Rounds aligned with sub-vendor material delivery schedules for integration into AURs; commencement of the BMD 6.x baseline to align to the Advanced Capability Build-20 Navy Capabilities Document; increased Discrimination Efforts; and a proportional change in Program Wide Support.

A. Mission Description and Budget Item Justification

The Aegis BMD mission is to deliver an enduring, operationally effective and supportable BMD capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of BMDS upgrades. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing United States 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 (SRBMs), Medium-Range Ballistic Missiles (MRBMs), and Intermediate-Range Ballistic Missiles (IRBMs) in the midcourse phase of flight, and shorter range missiles in the terminal phase of flight. Aegis BMD also provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS. Upgrades to both the Aegis BMD Weapon System and the Standard Missile-3 (SM-3) configuration enable Aegis BMD to provide effective, supportable defensive capability against longer range, more sophisticated threats and an enduring Aegis Ashore defensive capability.

This Program Element includes support for discrimination improvement efforts, which aim to develop and field an integrated set of Element capabilities to improve BMDS effectiveness and resilience against the evolving threat. The end result will be a BMDS architecture more capable of discriminating and destroying a re-entry vehicle with a high degree of confidence, improving Warfighter shot doctrine and preserving inventory. This effort encompasses Near -term, Mid-term, and Far-term discrimination capability fielding. The discrimination improvements require a coordinated effort between Systems Engineering (PE 0603890C), Ground-based Midcourse Defense (PE 0603882C), BMD Sensors (PE 0603884C), C2BMC (PE 0603896C), Aegis BMD, and Advanced C4ISR (PE 0603179C).

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management efforts providing integrated and efficient support to MDA functions and activities across the entire BMDS.

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>
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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	764.224	843.355	762.740	-	762.740
Current President's Budget	761.646	830.647	959.066	-	959.066
Total Adjustments	-2.578	-12.708	196.326	-	196.326
• Congressional General Reductions	0.000	-0.708			
• Congressional Directed Reductions	0.000	-12.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	9.999	0.000			
• SBIR/STTR Transfer	-12.577	0.000			
• Other Adjustment	0.000	0.000	196.326	-	196.326

Change Summary Explanation

Decrease in FY 2015 reflects realignment of Department of Defense priorities

Increase in FY 2017 is attributed to the following:

- Incremental funding increased from FY2016 levels to match manufacturing expenditure profile for seventeen FY16 contracted SM-3 Block IIA All Up Rounds (AUR)'s, funding requirements aligned with next FY2017 increment of component, sub-section and section manufacturing and delivery schedules to support AUR deliveries beginning FY2018
- Increased funding for SM-3 BLK IIA Development due to Transition of Kinetic Warhead (KW) hardware commonality effort (from design to material purchases) to system integration testing in order to demonstrate technology readiness level 7, Implementation of updated missile software build, test and qualification for FTM-29 and FTO-03 flight testing, Increased integration testing with Aegis Baseline based on matured test requirements, Guidance Section Circuit Card Assembly manufacturing environmental test capability improvements to reduce Average Unit Production Price (AUPP), Build up SM-3 BLK IIA AUR for FTM-29 from residual SCD hardware to address schedule impact from late long lead material for FY2016 manufacturing contract
- Commencement of the BMD 6.x baseline to align to the Advanced Capability Build-20 Navy Capabilities Document
- Increased Discrimination Efforts
- Program Wide Support reflects a proportional change as a result of increases in Aegis BMD

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD09 / Aegis BMD			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
MD09: Aegis BMD	4,239.262	669.587	719.565	846.028	-	846.028	733.184	593.543	497.562	435.442	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase in FY 2017 is attributed to the following:

- Incremental funding increased from FY2016 levels to match manufacturing expenditure profile for seventeen FY16 contracted SM-3 Block IIA All Up Rounds (AUR)'s, funding requirements aligned with next FY2017 increment of component, sub-section and section manufacturing and delivery schedules to support AUR deliveries beginning FY2018
- Commencement of the BMD 6.x baseline to align to the Advanced Capability Build-20 Navy Capabilities Document

A. Mission Description and Budget Item Justification

Aegis Ballistic Missile Defense (BMD) continues development of a sea-based BMD capability, in support of the MDA'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 primarily enhance Missile Defense to defend deployed forces, allies and friends against theater threats:

- Aegis BMD 5.0 Capability Upgrade (CU) expands the threat set and increases the raid size
- Aegis BMD 4.1 backfits the Aegis 5.0 CU(endo-atmospheric(ENDO) and exo-atmospheric(EXO) into the BMD 4.0 architecture
- Aegis BMD 5.1 expands the threat set through the introduction of Engage on Remote(EoR) and the integration of the Standard Missile-3(SM-3) Block IIA
- Aegis BMD 4.x/5.3.x merges Aegis BMD 4.1 (including BMD 5.0 CU capability) and U.S. Navy Baseline 5.3 into a single computer program for the BMD 4.0 architecture.
- Aegis BMD 6.x will apply the Advanced Capabilities Baseline(ACB)-20 BMD capability to Guided Missile Destroyer (DDG) Flight III in alignment with the Navy: provides increased organic engagement, search & track and Integrated Air and Missile Defense (IAMD) capability based on SPY-6, also known as the Air & Missile Defense Radar (AMDR)

Aegis BMD 5.0 Capability Upgrade (CU) will enhance Aegis BMD 5.0 by improving the ENDO and EXO capability, increasing the maximum number of SM-3's in flight simultaneously, expanding the threat set to include those for EPAA Phase II, and increasing this capability by delivering improvements as part of the Ballistic Missile Defense System (BMDS) upgrades.

Aegis BMD 4.1 builds upon Aegis BMD 4.0 and adds Aegis BMD 5.0 CU capabilities providing European Phased Adaptive Approach (EPAA) Phase II EXO threat capability increase, SM-3 Maximum number Missiles In Flight (MAX MIF) improvements, multi-mission (Anti-Air Warfare (AAW) and BMD) warfare integration, , Mark (MK)-41 Vertical Launching System (VLS) and Mission Planner capabilities.

Aegis BMD 5.1 builds upon BMD 5.0 CU and will further expand the threat set which is required for EPAA Phase III. This includes the introduction of an EoR capability and the integration of the SM-3 Block IIA. An EoR engagement allows the use of active and passive off board sensor information to launch and guide the SM-3 Block

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency	Date: February 2016
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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IIA to final intercept. The increased kinematic envelope of the SM-3 Block IIA when combined with EoR will expand the battlespace and increase the number of threats engaged over previous baselines.

Aegis BMD 4.x/5.3.x merges Aegis BMD 4.1 and USN Baseline 5.3 into a single integrated computer program. BMD 5.3.x increases BMD threat capability and exploits track and detection improvements of the SPY-1 Low Noise Amplifier (LNA) Refurbishment.

- Legacy Aegis BMD Cruisers and Destroyers possess two separate, certified computer programs: BMD 4.1 for Ballistic Missile Defense missions and Aegis Baseline 5.3 for Anti-Air Warfare (AAW), Surface Warfare (SUW), and Undersea Warfare (USW). This integration remedies the current need for the warfighter to switch between Baseline 5.3 and BMD 4.0 based on the warfighting mission requirement.

Benefits of the single computer program are:

- Enables warfighter to switch between BMD missions or AAW/SUW/USW missions
- Integrates Air and Missile Defense into a single computer program on legacy computer program architecture
- Enables future capability enhancements and threats with Aegis BMD 4.x
- Enables future SPY-1 Low Noise Amplifier (LNA) Refurbishment efforts to maintain ship relevance through End of Service Life

Aegis BMD 6.x provides an increased BMD capability by incorporating the Air and Missile Defense Radar (AMDR), now designated for SPY-6 for the introduction on the first DDG Flight III. The objective is to achieve tracking and discrimination improvements to counter evolving threats and raids in support of homeland/regional defense. BMD 6.x will enable BMDS element utilization of AMDR data for remote engagement and supplement deployed assets with simultaneous multi-mission capabilities (e.g. IAMD). It will include updates for advanced planning; search, track, and discrimination; and kill assessment. SPY-6 will support force-level (multi-asset) approach to raid defense and enable Navy ships greater stand-off range from threat environments.

The SM-3 Block IB improves Aegis BMD's ability to engage longer range, more sophisticated ballistic missiles that may deploy countermeasures and launch in larger raid sizes. The SM-3 Block IB Kinetic Warhead's (KW) two-color infra-red (IR) seeker and advanced signal processor provides a real-time discrimination and characterization capability while improving sensitivity for longer range targets and performance against more sophisticated threats. Additionally, the new Throttleable Divert and Attitude Control System (TDACS) KW divert engine has been upgraded over the SM-3 Block IA to provide a more flexible divert in order to maneuver the KW to intercept.

The SM-3 Block IIA is a cooperative project developed by Aegis BMD and the Japan Ministry of Defense. The SM-3 Block IIA consists of a spiral upgrade to a 21-inch diameter SM-3 missile and will expand available battlespace to include Intermediate Range Ballistic Missile (IRBM) and selected longer-range threats. When combined with Aegis BMD 5.1 weapon system modifications the SM-3 Block IIA will provide EoR capability.

The discrimination improvements effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. AEGIS BMD will continue targeted discrimination improvements, enterprise improvements to detect, track, discriminate and correlation, and threat data and modeling updates.

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

	FY 2015	FY 2016	FY 2017
Title: Aegis Ballistic Missile Defense (BMD) 4.x Development	72.610	39.983	28.264

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
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<p align="right">Articles:</p> <p>Description: Aegis BMD 4.1 incorporates the BMD 5.0 CU capability of EPAA Phase II ENDO/EXO requirements including EPAA Phase II Exo-atmospheric threats, integration of the SM-3 Block IB Threat Upgrade (TU), re-introduction of other Aegis capabilities integrated with the SM-2 Block IV and SM-6 Dual I, and provides comparable Aegis Modernization capabilities to the MIL-SPEC computer program architecture based BMD 4.X ships. Aegis BMD 4.1 builds upon Aegis BMD 4.0 and captures Aegis BMD 5.0CU. Aegis BMD 4.1 also increases Maximum Missiles In Flight & Maximum Engagements over Aegis BMD 4.0.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Continued development of BMD 4.1 (backfit of BMD 5.0 CU capability into the BMD 4.0 architecture) - Prepared for and supported BMDS Flight and Ground Test events as reflected in the Integrated Master Test Plan (IMTP) and the Exhibit R-4 schedule <p>FY 2016 Plans:</p> <p>Decrease from FY 2015 is due to the completion of 4.1 baseline development as the baseline transitions to co-development with the Navy on merging BMD 4.1 and Navy Aegis Baseline 5.3.</p> <ul style="list-style-type: none"> - Conduct a Test Readiness Review of BMD 4.1 to determine readiness to begin formal testing by evaluating the preparedness of personnel, plans, and test resources - Conduct an Engineering Evaluation of BMD 4.1 to demonstrate baseline capabilities as a risk reduction activity during development <p>FY 2017 Plans:</p> <p>Decrease from FY 2016 to FY 2017 is due to completion of 4.1 computer program development in 2016.</p> <ul style="list-style-type: none"> - Begin merger of BMD Baseline 4.1 and Navy Aegis Baseline 5.3 into a single computer program (BMD 4.x/5.3.x) within the legacy computer program architecture - Execute coordinated development with US Navy on the combined computer program - Conduct System Design Review (SDR) - Conduct Preliminary Design Review (PDR) 	-	-	-
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<p>Title: Aegis Ballistic Missile Defense (BMD) 5.0 Development</p> <p align="right">Articles:</p> <p>Description: Aegis BMD 5.0 Capability Upgrade (CU) is a combined weapon system developed with the US Navy. It will integrate Aegis BMD 4.0 capability into the Baseline 9 (Open Architecture) common source library. Aegis BMD 5.0 CU will expand the EXO capability, increasing the maximum number of missiles in flight simultaneously and expanding the threat set to include</p>	84.296	19.944	0.000
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p>those for EPAA Phase II. Aegis BMD 5.0 CU is an essential capability to meet the requirements of EPAA Phase II and will provide evolutionary improvements in support of deployed forces, friends, and allies.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted a Mission Readiness Assessment (MRA) - Conducted an Engineering Assessment (EA) - Continued development of BMD 4.1 (backfit of BMD 5.0CU capability into the BMD 4.0 architecture) - Supported Aegis Intercept Flight Test as reflected in the IMTP and the Exhibit R-4 schedule - Supported Aegis Ashore Intercept Flight Test with Aegis BMD 5.0CU <p>FY 2016 Plans:</p> <p>Decrease from FY 2015 is attributed to the following:</p> <ul style="list-style-type: none"> - Completion of the 5.0 development efforts and transition of the baseline from development to fielding. The follow-on capability, Baseline 5.1 is included under Project MD09, Aegis Ballistic Missile Defense (BMD) 5.x Development - Continue Aegis BMD 5.0 CU co-development with Navy for Aegis Modernization - Complete certification and post-certification effort of European Phased Adaptive Approach (EPAA) Phase II into the Navy's Open Architecture baselines for fielding in the operational Ballistic Missile Defense System - Complete Aegis Intercept Flight Test as reflected in the IMTP and the Exhibit R-4 schedule for initial operational evaluation of operational effectiveness and suitability - Continue VLS development of the Ordnance Alteration (ORDALT) kit and Quality Assurance (QA) to support fielding of 5.0CU capability on USN ships. Activities support the procurement and fielding of hardware and software associated with the MK 41 VLS to be capable to launch SM-3 Block IA/IB and other missile variants <p>FY 2017 Plans:</p> <p>Funding for completion of DT/OT testing of Aegis BMD 5.0 CU captured in Aegis Test 0604878C. No further funding requested for development.</p>				
Title: Aegis Ballistic Missile Defense (BMD) 5.x Development		183.749	180.628	92.364
Description: Aegis BMD 5.1 builds upon BMD 5.0 CU and will further expand the threat set to include those threats required for EPAA Phase III through the introduction of an Engage on Remote(EoR) capability and the integration of the SM-3 Block IIA. An EoR engagement allows the use of active and passive off board sensor information to launch and guide the SM-3 Block IIA to final intercept. The increased kinematic envelope of the SM-3 Block IIA when combined with EoR will expand the battlespace and increase the threat set engaged over previous baselines. Aegis BMD 5.1 Combat System certification occurs in 2018.		Articles: -	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<p><i>FY 2015 Accomplishments:</i></p> <ul style="list-style-type: none"> - Continued software development for the BMD 5.1 Standard Missile-3 Cooperative Development Program (SCD) configuration for the SCD Flight Tests. - Completed preparations for CDR which will finalize the Baseline Program Performance requirements for the Ballistic Missile Defense (BMD) 5.1 Capability to include EoR and BMDS integration - Conducted BMD 5.1 CDR and Navy Review Team (NRT) data package review - Commenced software development of the BMD 5.1 Phase 2 Tactical Computer Program to achieve partial European Phased Adaptive Approach (EPAA) Phase III threats and capabilities by 2018 - Completed development of BMD 5.1 Element Capabilities Specification (ECS) and System Specification for Aegis Modernization Advanced Capability Build 12 requirements needed to adapt BMD 5.1 for the Aegis Ashore configuration - Conducted development of BMD 5.1 Prime Item Development Specification requirements needed to adapt BMD 5.1 for the Aegis Ashore configuration - Conducted BMD 5.1 VLS Formal Integration and Qualification Testing in support of SM-3 Block IIA development. - Designed, coded, integrated, and tested BMD 5.1 Interface Change Proposals in the Command and Control Processor (C2P) v3.9 - Developed Deterministic Routing algorithms to support BMD 5.1 - Implemented BMD 5.1 Interface Change Proposals in the Multi-Link System Test and Training Tool (MLST3) - Designed, developed, and tested dual data path via the BMDS Overhead Architecture (BOA) - Completed development of the BMD 5.1 C4I Top Level Requirements document to ensure consistency between BMD 5.1 C4I requirements and Navy C4I Programs of Record - Completed development of the Common C4I Top Level Requirements Document to ensure C4I consistency with Navy across B/L 9.C2 <p><i>FY 2016 Plans:</i></p> <p>Decrease from FY 2015 is inclusive of all the following</p> <ul style="list-style-type: none"> - Development life cycle shift from requirement and design efforts to implementation and testing of functionality - Development of major functionality complete by mid-year 2016 and program shift to primarily testing - Reduction of software development efforts for Aegis BMD 5.1 capability as cycle of program moves to focus on efforts in support of scheduled flight tests <p>- Aegis Ballistic Missile Defense (BMD) Phase 1 capabilities include Standard Missile-3 (SM-3) Block IIA missile integration, SM-3 weapons selection algorithm, enhanced tracking, discrimination and mission planner updates to support organic engagements, Launch-on-Remote (LoR) engagements, and Long Range Surveillance & Tracking (LRS&T) missions. Aegis BMD 5.1 Phase 1 integration, testing, and evaluation (IT&E) events include various lab-based and shipboard weapon-system-to-missile integration</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
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<p>testing utilizing the Virtual Operational Missile (VOM) and the Inert Operational Missile (IOM), as well as participation in Ballistic Missile Defense System-wide (BMDS-wide) ground test campaigns.</p> <ul style="list-style-type: none"> - Aegis BMD 5.1 Phase 1 development supports early integration and testing with the SM-3 BLK IIA missile testing planned for SFTM-1 and SFTM-2. The development of partial capability is contiguous across both Phase 1 and Phase 2 and supports delivery for EPAA Phase III. - Aegis BMD 5.1 Phase 1 System Development: Continue Engineering, Development, Integration and Testing of the tactical Weapons System computer program, and integration of the SM-3 Block IIA missile. This development reduces risk to Aegis BMD 5.1 Phase 2 and EPAA Phase III by front-loading the development of the weapons system/missile functionality and integration in the development phase to support the upcoming SCD Flight Test Mission-1 (SFTM-1) and SFTM-2 flight tests. - Conduct Engineering Assessment (EA) of Aegis BMD 5.1 functionality, stability, performance and readiness for the test execution of SFTM-1 and SFTM-2 as reflected in the IMTP - Support SFTM-1 using the Aegis BMD 5.1 Phase 1 tactical computer program for the first SM-3 Block IIA intercept test - Continue software development for the partial Aegis BMD 5.1 Phase 2, which includes all Phase 1 capabilities, and partial EPAA Phase III capabilities and threats - Continue assessment cycles to prepare certification and deployment of Aegis BMD 5.1 computer program at sea and ashore for European Phased Adaptive Approach (EPAA) Phase III - Conduct Aegis BMD 5.1 Vertical Launch System (VLS) Formal Integration and Qualification Testing required for the fielding of 5.1 capability on DDG Flight I & II configured USN ships and Aegis Ashore - Continue Aegis BMD VLS modifications required for the fielding of 5.1 capability on DDG Flight IIA configured USN ships - Evaluate Mark (MK) 41 VLS performance results during Controlled Test Vehicle-1 (CTV-1) and CTV-2 and apply results to design to verify the capability of MK 41 VLS to fire the SM-3 BLK IIA prior to shipboard testing - Conduct Aegis BMD 5.1 MK 41 VLS Formal Integration and Qualification Testing in support of fielding on DDG Flight I and IIA ship configurations - Provide MK 41 VLS support to Aegis Integration Event (AIE) to verify the compatibility of the MK 41 VLS firing the SM-3 BLK IIA with Aegis BMD 5.1 and perform regression testing - Conduct Aegis BMD 5.1 MK 41 VLS Certification and Safety Assessments for shipboard fielding to obtain Naval Ordnance System Safety Activity authorization for the placement of the SM-3 BLK IIA in the MK 41 VLS approving the safe firing the SM-3 Block IIA - Provide Aegis BMD 5.1 MK 41 VLS support to the execution of SFTM-1 and SFTM-2 and evaluate the VLS performance results demonstrating the capability of the MK 41 VLS to launch the SM-3 BLK IIA missile. - Execute provisions for transition to production of Aegis BMD 5.1 MK 41 VLS modifications required on USN ships for the fielding of 5.1 capability with SM-3 Block IIA 			
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p>All efforts on schedule to meet EPAA Phase III deployment.</p> <p>FY 2017 Plans: Decrease from FY 2016 to FY 2017 is due to: - Completion of major development functionality and shifting focus to implementation and development testing at-sea - Completion of VLS Development efforts and transition to fielding and sustainment</p> <p>- Continue software development for the Aegis BMD 5.1 Phase 2, which includes all BMD 5.1 capabilities, including EPAA Phase III capabilities and threats - Incorporate developmental and maintenance Computer Program Correction Reports (CPCRs) as defined from Developmental Testing (DT) - Provide post-mission analyses for SFTM-01 - Provide lab-based and shipboard Integration Testing & Evaluation (IT&E), preparation activities and post-mission analyses for SFTM-02 flight test, fulfilling agreement with Japan in the SM-3 Block IIA Cooperative Development program. - Conduct integration testing for C2P Tech Refresh and Common Data Link Management System (CDLMS) 3.9 to support pre-mission analysis of EoR engagement - Conduct Jamming Exercise (JAMEX), Functional Assessments (FA) and System Functional Tests (SFT) in preparation for the Demonstration of Aegis BMD 5.1 - Conduct demonstration of Aegis BMD 5.1 to assess and accurately characterize the BMD 5.1 Aegis Combat System (ACS) computer program implementation for the deployment and execution of developmental test / operational test as reflected in the IMTP - Support BMDS ground test events as reported in the IMTP - Perform assessment cycles to prepare certification and deployment of Aegis BMD 5.1 computer program at sea and ashore for European Phased Adaptive Approach (EPAA) Phase III - Conduct pre-mission analyses, integration testing events, Test & Evaluation Working Group (TEWG) planning activities in support of the IMTP</p> <p>All efforts on schedule to meet EPAA Phase III deployment.</p>				
<p>Title: Aegis Ballistic Missile Defense 6.x Development</p> <p align="right">Articles:</p> <p>Description: U.S. Navy is developing the Advance Capability Build (ACB) 20 Combat System (CS) and the Air and Missile Defense Radar (AMDR), now designated SPY-6, for introduction on the first DDG Flight III. BMD 6.x will integrate BMD capability with the ACB 20 CS, to include new SPY-6 requirements; this will enable BMDS element utilization of AMDR data for remote engagements and supplement deployed assets with simultaneous multi-mission capabilities (e.g. IAMD). It will include updates</p>		0.000 -	0.000 -	26.305 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p>for advanced planning; search, track, and discrimination; and kill assessments. SPY-6 will support a force-level (multi-asset) approach to raid defense and enable Navy ships greater stand-off range from threat environments.</p> <p>BMD 6.x will build upon B/L 9 Capabilities (e.g. BMD 5.1) as point of departure. BMD 6.x will also serve as the path forward to achieve BMDS Increment 6 threats, Electro Optical (EO/IR) Integration for remote engagements and increased raid capacity.</p> <p>FY 2015 Accomplishments: N/A</p> <p>FY 2016 Plans: N/A</p> <p>FY 2017 Plans: Increase from FY 2016 to FY 2017 attributed to commencement of the BMD 6.x baseline to implement performance requirement allocations from the BMDS Element System Specifications and align to the ACB 20 Navy Capabilities Document (NCD) for design efforts.</p> <ul style="list-style-type: none"> - Prepare for System Functional Review (SFR) to finalize the BMD components of the ACB 20 Combat System Requirements (A-Spec) - Assess feasibility analysis of BMD 6.Element Specification (ES) performance requirements - Conduct trade studies and concepts supporting A-Spec development - Conduct Aegis BMD low-level performance analysis supporting SFR - Develop supporting engineering planning documents - Compile SFR data package and conduct Navy Review Team (NRT) review to validate system requirements - Conduct development of BMD 6 ES - Initiate development of the ACB 20 Prime Item Development Specification (PIDS)requirements and Critical Item Development Specification (CIDS)requirements - Prepare for Preliminary Design Review (PDR) to finalize the BMD components of the ACB 20 PIDS - Conduct trade studies and concepts supporting PIDS and CIDS development - Conduct Aegis BMD performance analysis supporting PDR - Compile PDR data package and begin Navy Review Team (NRT) review to validate system requirements 				
Title: Standard Missile-3 (SM-3) Block IB Development		38.245	41.242	1.958
		Articles: -	-	-
Description: See Description below.				

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
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<p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Completed IB Threat Update (IBTU) for 5.0 Capability Upgrade (5.0CU) and additional threats. - Prepared for and supported Ballistic Missile Defense System (BMDS) flight test as reflected in the Integrated Master Test Plan (IMTP) and the exhibit R-4 schedule. <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Assess the SM-3 Block IB missile capability against evolving threat characteristics to define improvements in missile discrimination processes to counter threat changes - Begin development of common avionics architecture between SM-3 Block IB and SM-3 Block IIA. This includes a SM-3 Block IB sized Read Out Integrated Circuit (ROIC) based on SM-3 Block IIA technology for increased acquisition range for greater capability against extended range threats, repackage SM-3 Block IIA Kinetic Warhead (KW) Guidance Electronic Unit (GEU) hardware to fit within SM-3 Block IB allowing implementation of SM-3 Block IIA software improvements to enhance missile performance against advanced threats <p>FY 2017 Plans:</p> <p>Decrease from FY 2016 to FY2017 is due to deferral of further development of the SM-3 Block IB sized Read Out Integrated Circuit (ROIC) based on SM-3 Block IIA technology for increased acquisition range.</p> <ul style="list-style-type: none"> - Continue to assess the SM-3 Block IB capability against evolving threat characteristics to define improvements in missile discrimination processes to counter threat changes - Continue design agent specific support for pre-flight test and post flight test efforts 			
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Title: Standard Missile-3 (SM-3) Block IIA Development	61.819	78.246	213.271
Articles:	-	-	-

Description: The SM-3 Block IIA is required to meet EPAA Phase III. It will increase the area that can be defended by Aegis BMD, increase the probability of kill against a larger threat set, and leverage enhanced capability provided by BMDS sensor upgrades.

<p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted Aegis Ballistic Missile Defense (BMD) 5.1 weapon system and SM-3 Block IIA Missile integration and testing - Began Kinetic Warhead (KW) Guidance Electronic Unit (GEU) hardware commonality development efforts to enhance missile performance against advanced threats - Began adaptations to the SM-3 Block IIA missile to include software and G-switch modifications that meet range safety requirements for Aegis Ashore <p>FY 2016 Plans:</p>			
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p>Increase from FY 2015 is due to beginning implementation of SM-3 Block IIA cost reduction initiatives to support meeting cost goals to reduce the current estimated Average Unit Production Price (AUPP) of the missile</p> <ul style="list-style-type: none"> - Continue Aegis BMD 5.1 weapon system and SM-3 Block IIA Missile integration and testing - Continue Kinetic Warhead (KW) Guidance Electronic Unit (GEU) hardware commonality development efforts to enhance missile performance against advanced threats - Conduct SM-3 Block IIA software update to support engagements against additional complex threats identified during Aegis BMD 5.1 design process conducted after missile Critical Design Review - Continue adaptations to the SM-3 Block IIA missile to include software and G-switch modifications that meet range safety requirements for Aegis Ashore <p>FY 2017 Plans: Increase from FY 2016 to FY 2017 is due to:</p> <ul style="list-style-type: none"> - Transition of Kinetic Warhead (KW) hardware commonality effort (from design to material purchases) to system integration testing in order to demonstrate technology readiness level 7 - Implementation of updated missile software build, test and qualification for FTM-29 and FTO-03 flight testing, - Increased integration testing with Aegis Baseline based on matured test requirements, - Guidance Section Circuit Card Assembly manufacturing environmental test capability improvements to reduce Average Unit Production Price (AUPP), - Build up SM-3 Block IIA All Up Round(AUR)for FTM-29 from residual Standard Missile-3 Cooperative Development(SCD)Program hardware to address schedule impact from long lead material for FY2016 manufacturing contract <p>Efforts will also:</p> <ul style="list-style-type: none"> - Continue SM-3 Block IIA engineering integration and testing with the Aegis BMD 5.1 Weapon System - Continue SM-3 Block IIA software updates to support engagements against additional complex threats identified post Aegis BMD 5.1 Critical Design Review - Conduct End to End Distributed Development System (ETEDDS) integration testing; and flight test support - Support Parts, Materials, Processes, Mission Assurance, and System Engineering as it relates to the SM-3 Block IIA - Continue implementation of SM-3 Block IIA cost reduction initiatives to support meeting cost goals to reduce the current estimated Average Unit Production Price (AUPP) - Continue adaptations to the SM-3 Block IIA missile to include software and G-switch modifications that meet range safety requirements for Aegis Ashore 				
Title: Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion		12.346	23.169	30.345
Articles:		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<p>Description: Aegis BMD Core System Engineering enables cross-baseline specification management and capability assessments to ensure consistent application of technical standards, processes, and procedures across the Aegis BMD program. Includes systems engineering and architecture (process and execution), modeling & simulation, test & evaluation support, ship integration, mission assurance and safety. Further develops Aegis BMD System Architecture and overarching system concepts. Conducts BMDS system level requirements development, trace, validation & verification, and configuration management for coordination with all participating external agencies and organizations. Ensures consistency and alignment of Command, Control, Communications, Computers, & Intelligence (C4I) implementation across Aegis BMD baselines.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Managed, tracked, and traced BMD performance requirements across all Aegis BMD baselines - Conducted Modeling and Simulation activities to support the Aegis BMD Ground Test as reflected in the IMTP - Performed analyses to ensure alignment between Aegis BMD capability baselines and the BMDS for performance requirements, design space, and threat capabilities - Developed Critical Engagement Conditions and Empirical Measurement Events (CEC/EMEs) to support Aegis BMD test and evaluation efforts - Updated Extended Air Defense Simulation (EADSIM) to support engagement coordination modeling and assessments - Began development of Objective Simulation Framework (OSF) architecture to support ABMD integration testing - Developed discrimination algorithms to counter identified threats through the Aegis Long Range Surveillance and Track (LRS&T) capability to achieve stated discrimination improvement objectives and preferred solutions. The capability insertion process enabled the acceleration of algorithm development and integration into Aegis BMD 4.0.3, which was certified in July 2015. - Conducted Phase 1 Aegis BMD Remote Engagement critical experiment, with the purpose of demonstrating integration of off board Electro-Optical/Infrared (EO/IR) sensor data into the Aegis Weapon System (AWS) to support Launch on Remote (LoR) engagements using multiple data links. This effort was successfully completed May 2015. <p>FY 2016 Plans:</p> <p>Increase from FY 2015 is attributed to development of the Planned Product Improvement for both Divert and Attitude Control System (DACS) and Third Stage Rocket Motor (TSRM) for SM-3</p> <ul style="list-style-type: none"> - Conduct requirements development, trace and configuration management for Aegis BMD Weapon System and Missile System Specifications - Conduct medium fidelity Monte Carlo Analysis contributing to Aegis BMD Capability Baselines and BMDS alignment for performance requirements, design space and threat capability assessments - Conduct development of Performance Assessment Matrix, Threat Compliance and Critical Engagement Conditions/Empirical Measurement Events (CEC/EMEs) to influence Aegis BMD Test and Evaluation efforts through a requirements-based input to the MDA's IMTP 			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency	Date: February 2016
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
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<ul style="list-style-type: none"> - Conduct Systems Engineering tasking for model development and Verification and Validation (V&V) of the following models in support of Commander Operational Test & Evaluation Force (COMOPTTEVFOR) accreditation: FirmTrack X, Command and Decision Simulation (C&DSim), Link, Weapons Control System (WCS), Argo, and Standard Missile-3 (SM-3) 6 Degrees of Freedom (DOF) - Conduct Modeling and Simulation (M&S) Reviews in support of Aegis BMD Ground Tests - Conduct Extended Air Defense Simulation (EADSIM) development required for participation in exercises and wargames in support of the Warfighter - Conduct Aegis BMD Tier 2 Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) transition to the Objective Simulation Framework (OSF) BMDS initiative with focus on; Next Generation Simulation (NGS) OSF Interface development for Aegis BMD 4.1 and BL 9C.2. - Implement OSF Core Truth Model (CTM) updates for NGS including Aegis BMD signatures, lethality, environments, and truth interactions - HWIL OSF driven V&V for interface and CTM modifications of the Aegis BMD NGS - Conduct Aegis BMD NGS OSF BMDS integration testing - Conduct systems engineering for digital M&S transition to OSF - Conduct M&S Integrated Master Assessment Plan (IMAP) assessment activities - Conduct development of advanced discrimination algorithms as related to the Aegis BMD baselines in support of discrimination improvement requirements - Demonstrate updated discrimination and develop a plan for insertion into the Aegis BMD Baselines and SM-3 variants to eliminate gaps and enable future BMDS architectures in support of DIHD requirements - Participate in discrimination improvement threat models specification. - Update element models to support the discrimination improvement program. - Participate in planning and conduct technology trades and analysis to refine capabilities to mitigate the discrimination improvements threats. - Fund efforts and studies to address the BMDS emergent threat. <p>FY 2017 Plans: Increase from FY 2016 to FY 2017 is attributed to the addition of critical experiment execution and Firing Event Analysis Team (FEAT) execution support.</p> <ul style="list-style-type: none"> - Continue requirements development and trace and configuration management for Aegis BMD Weapon and Missile System specifications - Conduct Systems Engineering for medium fidelity Monte Carlo Analysis which will contribute to Aegis BMD capability baselines and BMDS alignment for performance requirements, design space, and threat capability assessments 			
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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Continue to develop Performance Assessment Matrix, Threat Compliance and CEC/EME's to influence Aegis Test and Evaluation efforts through a requirements based input to the IMTP - Develop C4I System Safety Program to address concerns with inadvertent launch and incorrect reporting of non-real ballistic missile tracks - Develop and implement Integrated Reliability Surveillance Plan (IRSP) to improve system availability while achieving an overall reduction in cost - Provide consolidated analysis and reporting for firing events - Provide Integrated Master Assessment Plan (IMAP) assessments for BMDS EPAA for Aegis BMD M&S needs and capabilities and limitations - Continue to maintain/upgrade the Aegis BMD M&S requirements and capabilities identified to meet the MDA's evolving system level M&S Enterprise needs for the Hardware in the Loop (HWIL) and Tier 2 Digital OSF - Build Aegis BMD M&S to OSF Native Interface (NI) upon receipt of OSF NI requirements and Interface Control Document - Implement Aegis BMD M&S Core Truth Model (CTM) updates for HWIL and Tier 2 Digital including phenomenology, lethality, environments, and threats for all Aegis BMD baselines to meet MDA's evolving system level M&S Enterprise - Conduct Systems Engineering tasking for model development and Verification & Validation (V&V) of the following Aegis BMD models in support of Commander Operational Test & Evaluation Force (COMOPTEVFOR) accreditation: FirmTrack X, Command and Decision Simulation (C&DSim), Link, Weapons Control System (WCS), Argo, Multi-Target Effectiveness Determined Under Simulation for Aegis (MEDUSA) and Standard Missile-3 (SM-3) 6 DOF - Conduct Aegis BMD M&S Reviews - Conduct Verification, Validation and Accreditation (VV&A) of Aegis BMD common input models - Provide Aegis BMD M&S Enterprise Requirements Management and Change Control - Continue model development required for participation in exercises and force-on-force analysis in support of the warfighter/ Combatant Commands (CCMDs) - Provide Aegis BMD M&S support for Operational Test (OT) Runs for Record (RFR)planning - Provide Aegis BMD M&S support for BMDS assessments and perform OSF/BMDS requirements development and analysis - Provide Aegis BMD M&S planning and integration in preparation for continuous Tier 2 Digital events - Continue research/development of a common Aegis BMD M&S framework to enable plug and play configurations and common M&S tools and processes across Aegis BMD M&S - Conduct BMDS-level Validation & Verification activities and provide results to MDA System Verification Team and the Operational Test Agency (OTA) in support of BMD system level accreditation for BMDS events - Execute Critical Experiments for proposed capability development efforts requiring HWIL verification. Proposed capabilities requiring HWIL include: Sensor Coordination & Planning, Electro-Optical/Infrared (EO/IR) Sensor Integration, and Infrared/Radio Frequency (IR/RF) Data Fusion and Correlation - Continue to improve the design of critical components to alleviate limiting legacy assumptions and caveats; provide a stronger basis for subsequent design initiatives 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p>-Aegis BMD will complete development of discrimination improvements: Implement threat data and modeling updates Field enterprise improvements to detect, track, discriminate and correlate threats -Continue Far-term countermeasure mitigation capability development: Execute system requirements review for radar electronic protection improvements</p>				
<p>Title: Fielding - Aegis Weapon System (AWS)</p> <p>Articles:</p>		12.922	0.000	0.000
<p>Description: See Description below.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Installed three (3) AMOD (Aegis Modernization program) BMD 5.0CU DDGs shipsets inline. - Updated BMD 4.0 to 4.1 software for current ships. <p>FY 2016 Plans:</p> <p>No funding requested for FY 2016 under this program element. All Aegis BMD Weapon System Fielding efforts and hardware purchases have transitioned to Aegis Procurement account captured in PE 0208866C.</p> <p>FY 2017 Plans:</p> <p>N/A</p>		-	-	-
<p>Title: Program Operations</p> <p>Articles:</p>		108.892	113.734	113.038
<p>Description: This activity funds the Government, contractor, and Federally Funded Research and Development Center (FFRDC) workforce that manage the overall Aegis Ballistic Missile Defense (BMD) program and enable the program to develop, build, and test standard missiles and the associated Aegis Weapon Systems. Includes all operations support for the Aegis program office in Engineering, Testing, Logistics, Acquisition, Safety, Quality Assurance, Finance, Budget Formulation and Execution, Cost Estimation, and Earned Value Management in support of development activities.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Ensured Aegis BMD program complied with internal and external directives, policies, laws and regulations - Conducted Internal Baseline Reviews (IBRs) that align with the MDA approved baselines - Conducted a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management (CM), Manufacturing, Engineering, Security, and Safety - Provided Quality Safety and Mission Assurance operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety, and reliability to ensure high quality products are delivered for BMDS test events 		-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Provided program management, subcontract management, quality assurance, verification of hardware and software development, technical oversight and testing execution - Provided technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, Configuration Management and integration activities <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Ensure Aegis BMD program compliance with internal and external directives, policies, laws and regulations - Conduct Internal Baseline Reviews (IBRs) that align with the MDA approved baselines - Conduct a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management (CM), Manufacturing, Engineering, Security, and Safety - Provide Quality Safety and Mission Assurance operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety, and reliability to ensure high quality products are delivered for BMDS test events - Provide program management, subcontract management, quality assurance, verification of hardware and software development, technical oversight and testing execution - Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, Configuration Management and integration activities <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Ensure Aegis BMD compliance with internal and external directives, policies, laws and regulations - Conduct Internal Baseline Reviews (IBRs) that align with the MDA approved baselines - Conduct a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management (CM), Manufacturing, Engineering, Security, and Safety - Provide Quality Safety and Mission Assurance operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety, and reliability to ensure high quality products are delivered for BMDS test events - Provide program management, subcontract management, quality assurance, verification of hardware and software development, technical oversight and testing execution - Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities 				
<p>Title: Fleet Integration</p> <p align="right">Articles:</p> <p>Description: Provide Fleet operations and mission support to enable the conduct of sustained BMD operations; advocate war fighter requirements and fleet feedback in baseline development and capability upgrades to Aegis BMD weapon system; provide analysis and Mission Planning support for Geographic Combatant Commanders for operational application of Maritime BMD capabilities; and provide BMD Capabilities Analysis and Exercise Support for Aegis BMD baselines under development or currently employed in the Operational Fleet.</p>		5.797	0.000	0.000
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p><i>FY 2015 Accomplishments:</i></p> <ul style="list-style-type: none"> - Provided In-service Engineering support to Aegis BMD - Provided leadership and engineering/technical support to conduct Aegis BMD Combat System Readiness - Responded to Fleet issues related to Aegis BMD installations, BMD operations and BMD events. - Provided reach back analytical support to the CCMDs for real world operations - Provided maintenance and update of Force on Force Modeling and Simulation - Provided BMD specific training to BMD ships, CCMD/Fleet Staffs; prepare/coordinate training documents for new BMD baselines. <p><i>FY 2016 Plans:</i> All efforts for this accomplishment have transitioned to Budget Project, MX09 Fleet Integration.</p> <p><i>FY 2017 Plans:</i> N/A</p>				
<p><i>Title:</i> SM-3 Manufacturing</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Purchase of FY 2016 SM-3 Block IIA All Up Round (AUR) for the purposes of flight testing and delivery to the fleet as operational assets prior to an initial production decision.</p> <p><i>FY 2015 Accomplishments:</i></p> <ul style="list-style-type: none"> - Began purchase of hardware material needed to support the manufacture of SM-3 Block IIA missile components. - Established purchase orders for hardware material including, but not limited to, power devices, raw materials, lower level assemblies, and optics hardware. <p><i>FY 2016 Plans:</i> Increase from FY 2015 is to allow for the award of the follow-on full scope of effort to produce SM-3 Block IIA missiles in support of flight testing and delivery to fleet for initial deployment in FY 2018</p> <p>- Continue funding for SM-3 Block IIA All Up Rounds (AURs) for use in support of flight test events (FTO-03 E1, FT0-03 E2, FTX-23 etc) as reflected in the Integrated Master Test Plan (IMTP), and initial deployment in support of European Phased Adaptive Approach (EPAA) Phase III. SM-3 Block IIA AURs validate the Engineering Manufacturing Readiness Level 3 criteria for an Initial Production Decision in FY 2017</p> <p>Funding for DoD Civilian and Contractor support moved to Project MD09, Program Operations</p>		18.368 -	136.217 -	254.654 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<p>Funding for Aegis Systems Engineering efforts moved to Project MD09, Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion</p> <p>FY 2017 Plans: Increase in FY 2017 is attributed to the following: - Incremental funding increased from FY2016 levels to match manufacturing expenditure profile for seventeen FY16 contracted SM-3 Block IIA All Up Rounds (AUR)'s, funding requirements aligned with next FY2017 increment of component, sub-section and section manufacturing and delivery schedules to support AUR deliveries beginning FY2018 - Realignment of funding from IIA Development to support for manufacturing, assembly, test, and missile integration issues and assessing vendor non-conformances, process changes, variances, change notices, drawing changes, deviations and compliance actions</p> <p>- Continue funding for quantity 17 SM-3 Block IIA AUR's (delivered FY 2018 through FY 2020) for use in flight test events (FTO-03 E1, FTO-03 E2, FTX-23, etc) as reflected in the IMTP, and initial deployment of EPAA Phase III. SM-3 Block IIA AURs validate the Engineering Manufacturing Readiness Level 3 criteria for an Initial Production Decision in 4Q FY 2017.</p>				
<p>Title: Modeling & Simulation HWIL Framework, Simulations, Models</p> <p align="right">Articles:</p> <p>Description: The M&S Hardware-in-the-Loop (HWIL) Framework, Models and Simulations effort develops, maintains and deploys the HWIL framework hardware and software for use at element laboratories and Combatant Command (CCMD) locations to support IMTP events, BMDS capability delivery assessments, Warfighter training, exercises, and wargames.</p> <p>FY 2015 Accomplishments: - Transitioned Single Stimulation Framework (SSF) support for Post Flight Reconstruction activities to the initial version of the Objective Simulation Framework (OSF). - Continued Optimistic Sensor Model (OSM) integration into OSF. - Began OSF sustainment, maintenance and product support for use in activities supporting MDA stakeholders and allies/coalition partners. - Delivered improved debris and phenomenology modeling capabilities to support Aegis future baselines. - Continued deployment and integration of BMDS Hardware-in-the-loop (HWIL) SSF and OSF Objective Hardware for MDA Elements and a releasable configuration for Allied and Coalition partners.</p> <p>FY 2016 Plans: - Develop Objective Simulation Framework (OSF) upgrades to incorporate advanced tracking, discrimination, engagement and associated upper tier debris mitigation capabilities, as well as other requirements and capabilities to meet MDA's evolving system level Modeling and Simulation Enterprise needs.</p>		35.293	41.580	40.084
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Begin implementation of new capabilities needed to support MDA's Tier 2 Digital requirements, including hardware and software, data storage and transmission, and verification tools. - Control and maintain M&S Integration and Development Laboratories for Element M&S. - Develop plans, procedures and documentation for scheduled events including Wargames and CCMD Exercises and the Distributed, Focused and Integrated Hardware-In-the-Loop Events as presented in the Integrated Master Test Plan (IMTP). - Develop, maintain, test, field, and operate model representations for use in system level events and other MDA M&S stakeholder application areas. Deploy hardware and software updates to CONUS and OCONUS distributed sites. Perform regular maintenance and critical repairs of hardware and software. <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Develop, maintain, test, field, and operate model representations for use in events and other MDA M&S stakeholder application areas. Deploy hardware and software updates to Continental U.S. (CONUS) and Outside CONUS (OCONUS) distributed sites. Perform regular maintenance and critical repairs of hardware and software - Enhance and publish the OSF framework interface to facilitate element integration in support of the GT-07 campaign - Evolve the OSF product to integrate and take advantage of new Core Truth Models in support of the GT Re-architecture efforts - Implement OSF into the Flight Test and Warfighter Training venues - Sustain and enhance framework products to maintain capabilities supporting stakeholders - Control and maintain the Modeling and Simulation Integration and Development Laboratories for Element M&S - Implement Objective Simulation Framework capabilities to incorporate advanced tracking, discrimination, engagement and associated upper tier debris mitigation capabilities, as well as other requirements and capabilities to meet MDA's evolving Modeling and Simulation Enterprise needs 				
<p>Title: Systems Engineering & Integration</p> <p align="right">Articles:</p> <p>Description: Perform requirements development, engineering analysis, capability integration, and performance verification for Aegis BMD development and BMDS integration, including Aegis BMD compliance with the BMDS Specification, BMDS Description Document, and Master Integration Plan (MIP).</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Identified BMDS architecture alternatives that improve the system's performance and are complementary to and interoperable with NATO systems and theaters around the world. - Developed and refined Capability Planning specifications for future BMDS Elements/Components. - Developed functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs. - Conducted system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts. 		15.033	19.109	19.405
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
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- Responded to Warfighter, CCMD and other requests for analyses and requests for information; provided analytical support for real-world events.

- Conducted non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Defense of the Homeland, Defense of Israel and Theater/Regional BMD)

- Conducted extensive analysis of data collected in BMD test events to evaluate BMD operations and performance.

FY 2016 Plans:
FY 2016 increase is due to increased capability integration and assessment support for Aegis BMD/BMDS leading to EPAA Phase II Technical Capability Declaration.

- Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts.

- Perform top-down system level engineering analysis, capability integration, and performance verification for Aegis BMD development and BMDS integration, including Aegis BMD compliance with the BMD System Specification, BMD System Description Document, and Master Integration Plan (MIP).

- Identify architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world.

- Develop functional performance, interface, and design suitability requirements in collaboration with Aegis BMD engineers to ensure correct flow-down and allocation of BMD System-level requirements to Aegis BMD.

- Respond to Warfighter, CCMD and other requests for analyses and requests for information; provide analytical support for real-world events.

- Conduct non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Theater/Regional BMD)

- Conduct extensive analysis of data collected in BMD test events to evaluate BMD System operations and performance.

FY 2017 Plans:

- Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts

- Perform top-down system level engineering analysis, capability integration, and performance verification for Aegis BMD development and BMDS integration, including Aegis BMD compliance with the BMD System Specification, BMD System Description Document, and Master Integration Plan (MIP)

- Identify architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world

- Define BMDS technical content expectations and develop system requirements, to include integration of new capabilities, such as the Navy's Air and Missile Defense Radar (AMDR)

- Develop functional performance, interface, and design suitability requirements in collaboration with Aegis BMD engineers to ensure correct flow-down and allocation of BMD System-level requirements to Aegis BMD

FY 2015	FY 2016	FY 2017

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Respond to Warfighter, Combatant Command and other requests for analyses and requests for information; provide analytical support for real-world events - Conduct non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Theater/Regional BMD) - Conduct extensive analysis of data collected in BMD test events to evaluate BMD System operations and performance 				
<p>Title: M&S Digital Framework, Simulation, Models</p> <p align="right">Articles:</p>		4.071	4.989	4.978
<p>Description: The Modeling and Simulation (M&S) Digital Framework, simulation, and models effort includes: development and sustainment of digital products and the architecture framework, and delivery/maintenance of infrastructure for BMDS performance assessments.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Continued the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaigns. - Provided integrated and functionally qualified end to end BMDS simulations supporting various events (utilizing the OSF and Element-provided medium/high-resolution models) enabling full-envelope BMDS Digital Performance Assessments. <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Continue re-architecting of MDA's BMD International Simulation (I-SIM) to adapt to growing distributed event requirements in support of CCMD and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, M&S demonstrations, and the Joint Functional Component Command for Integrated Missile Defense (JFCC IMD) Material & Fielding Requirements List (MFRL). - Integrate, test, functionally qualify, and deliver BMDS M&S tools for use in MDA test events, Wargames, and exercises - Continue the transition of real-time digital simulation capability to the OSF to support BMD System and Element Intended Uses. - Provide threat representations (kinematic trajectories, radar cross section (RCS), and infrared (IR) signature data) for use in real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD. - Perform operational planning for the FY 2017 BMDS assessment events. <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Integrate, test, and verify the M&S enterprise supporting BMDS testing, assessment, exercises, and wargaming, including testing infrastructure. Guide and facilitate integration testing of MDA's M&S frameworks and core truth models, and all M&S components into virtual representations of the BMDS that are credible, affordable, and provide decision makers with the data needed - Integrate, test, functionally qualify, and deliver M&S tools and complex test architectures to provide system test capabilities to support MDA IMTP based test events, wargames, and exercises - Continue the transition of real-time digital simulation capability to the OSF to support Intended Uses 		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD		Project (Number/Name) MD09 / Aegis BMD
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2015
<ul style="list-style-type: none"> - Provide HWIL/M&S Benchmarking/Integration documentation and coordination - Conduct M&S system integration and verification to support M&S system architecture development. Provide developmental integration testing to support M&S system architecture integration 				FY 2016
<p>Title: BMDS Verification, Validation & Assessment (VV&A)</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted verification and validation (V&V) in support of MDA BMD system level accreditation for Ground Test and Performance Assessment events. - Developed integrated VV&A and V&V event plans and reports for events as reflected in the IMTP and the Exhibit R-4 schedule. - Conducted system pre-mission testing events, system post-flight reconstructions, and element post-flight reconstructions to optimize the body of evidence and analysis for BMD System-level accreditation. Performed all system-level V&V associated with these events as reflected in the IMTP and the Exhibit R-4 schedule. - Conducted system-level V&V of threat trajectory and signature end-to-end environmental implementation; ensured that communications and architecture behaved properly and that interoperability was adequately addressed. <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> -FY 2016 increase is due to increased assessment and validation activities supporting capability declaration for EPAA phase II. <p>- Conduct extensive analysis of data collected in BMDS ground and flight test events, instrumental to understanding BMD System operations and performance and anchoring models and simulations.</p> <ul style="list-style-type: none"> - Identify mitigation approaches for BMDS performance issues uncovered during system level analysis and assessment. - Monitor development and recommend improvements to the Missile Defense Agency wide simulation enterprise based on an evaluation of the validity of Component, Element and System-level models, frameworks, and participation in system level assessment activities and Modeling and Simulation events. - Conduct verification and validation (V&V) in support of MDA BMD System level accreditation process in support of BMDS Ground Test and performance assessment events. - Develop integrated Verification, Validation and Accreditation (VV&A) and V&V event Plans and Reports for events as reflected in the Integrated Master Test Plan (IMTP) and the Exhibit R-4 schedule. - Conduct specified BMD System post-flight reconstructions, element 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 V&V associated with these events as reflected in the IMTP and the Exhibit R-4 schedule. <p>FY 2017 Plans:</p>				21.362
				16.146
				-
				20.724
				-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Verify BMDS performance, and produce BMDS verification status reports - Conduct extensive analysis of data collected in BMDS ground and flight test events, instrumental to understanding BMD System operations and performance and anchoring models and simulations - Identify mitigation approaches for BMDS performance issues uncovered during system level analysis and assessment - Maintain M&S Verification, Validation and Accreditation (VV&A) database, and verification data for BMD System Specification Change Notices - Develop, maintain, and update the M&S VV&A tool kit - Provide recommendations for improving assessment confidence, including M&S and testing issue resolutions - Conduct verification and validation (V&V) in support of MDA BMD System level accreditation process in support of BMDS Ground Test and performance assessment events - Conduct specified BMD System post-flight reconstructions, element post-flight reconstructions, and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation 			
Accomplishments/Planned Programs Subtotals	669.587	719.565	846.028

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

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0604878C: <i>Aegis BMD Test</i>	88.041	78.468	95.012	-	95.012	127.720	91.461	88.217	98.525	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	121.413	34.970	43.293	-	43.293	29.045	19.259	21.294	21.646	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	259.278	172.645	106.038	-	106.038	0.000	0.000	0.000	0.000	0	537.961

Remarks

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 and the Aegis BMD Weapon System, respectively.

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

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
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additional technical standards and engineering oversight provided by Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs).

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4					PE 0603892C / AEGIS BMD					MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev -MD09- Aegis Techrep	MIPR	AEGIS Techrep : Moorestown, NJ	0.676	1.438		0.000		1.324	Nov 2016	-		1.324	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - Corona	MIPR	NSWC Corona : CA	0.676	1.134		3.746	Nov 2015	0.146	Nov 2016	-		0.146	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - MD09 - D	MIPR	MDA : VA	20.309	0.000		5.342	Nov 2015	2.122	Jul 2017	-		2.122	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - MD09 - Dahlgren	MIPR	NSWC/DD : DAHLGREN, VA	77.939	4.304		9.711	Nov 2015	1.184	Nov 2016	-		1.184	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - MD09 - JHU/APL	MIPR	JHU/APL/MD : COLUMBIA, MD	29.994	1.944		2.803	Nov 2015	0.386	Nov 2016	-		0.386	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - MD09 - Lockheed Martin	SS/CPIF	LOCKHEED MARTIN : MOORESTOWN, NJ	716.579	37.122		6.415	Nov 2015	22.996	Nov 2016	-		22.996	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - MD09 - Raytheon	SS/CPAF	RAYTHEON/AZ : TUCSON, AZ	12.411	3.220		11.966	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x Development - BMD 4.0 Dev. - MD09 -NSWC PHD	MIPR	NSWC/PHD : PT. HUENEME, CA	13.896	1.301		0.000		0.106	Nov 2016	-		0.106	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.x	MIPR	NAVSEA -LM : Washington DC	0.000	22.147		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency												Date: February 2016			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603892C / AEGIS BMD				MD09 / Aegis BMD					
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development - BMD 4.0 Dev. - NAVSEA															
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09	SS/CPIF	LOCKHEED MARTIN : MOORESTOWN, NJ	707.201	49.799		13.016	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 -	MIPR	MITRE : CECOM	1.829	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316263	MIPR	NSWC/DD : DAHLGREN, VA	83.056	17.934		3.220	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316266	MIPR	NSWC/PHD : PT. HUENEME, CA	4.987	2.105		0.142	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316267	MIPR	JHU/APL/MD : COLUMBIA, MD	39.852	8.973		2.998	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316272	C/CPAF	RAYTHEON/AZ : TUCSON, AZ	0.030	0.422		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278 - 2012628495024	MIPR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - Tech Rep	MIPR	Aegis Tech Rep : Moorestown, NJ	0.000	1.354		0.094		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0	MIPR	Various : VA, IN, CA, AZ	0.000	1.290		0.474		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development - MD09 Various															
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09-MIT/LL	MIPR	MIT/LL : MA	0.000	1.133		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - NAVSEA	MIPR	NAVSEA : Washington DC	0.000	1.286		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - AA Development	MIPR	PMRF : Hawaii	0.000	0.000		5.967		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09	MIPR	AEGIS BMD : AZ, VA, CA	55.673	4.349		0.906	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - 20117142323680	MIPR	NSWC/DD : DAHLGREN, VA	39.308	0.000		7.237	Nov 2015	9.863	Nov 2016	-		9.863	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - 20117142323684	MIPR	NSWC/PHD : PT HUENEME, CA	1.947	0.866		5.060	Nov 2015	4.858	Nov 2016	-		4.858	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - 20117142323686	MIPR	JHU/APL/MD : COLUMBIA, MD	34.054	6.075		6.169	Nov 2015	5.808	Nov 2016	-		5.808	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - 20117142323689	SS/CPAF	LOCKHEED MARTIN : MOORESTOWN, NJ	332.216	125.416		133.685	Nov 2015	68.130	Nov 2016	-		68.130	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - 20126284501509	MIPR	SPAWAR : CA	6.829	3.504		3.079	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - AG	SS/CPAF	RAYTHEON/AZ : TUCSON, AZ	35.714	0.000		16.745	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - AW	MIPR	Aegis Tech Rep : Moorestown, NJ	0.000	2.049		0.000		3.705	Nov 2016	-		3.705	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - NAVSEA	MIPR	NAVSEA : Washington, DC	0.000	31.774		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - TD	MIPR	Various : MA, MD, VA, NJ	27.255	4.258		1.780	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09 - Wallops	MIPR	SCSC Wallops : VA	0.000	2.153		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.x Development - MD09-SEG	MIPR	SEG : CA	0.000	3.305		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense 6.x Development - D	MIPR	Various : VA,AL	0.000	0.000		0.000		2.123	Jul 2017	-		2.123	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense 6.x Development - Hanscom AFB - MIT/LL - TD	MIPR	Hanscom AFB - MIT/LL : MA	0.000	0.000		0.000		0.406		-		0.406	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense 6.x Development - JHU/APL	SS/CPFF	JHU/APL : MD	0.000	0.000		0.000		7.241	Nov 2016	-		7.241	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense 6.x Development - Lockheed Martin	C/CPFF	Lockheed Martin : NJ	0.000	0.000		0.000		12.260	Nov 2016	-		12.260	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense 6.x Development - MD09 - DD	MIPR	NSWC/DD : Dahlgren, VA	0.000	0.000		0.000		3.971	Nov 2016	-		3.971	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense 6.x Development - NSWC DD - TD	MIPR	NSWC DD : VA	0.000	0.000		0.000		0.304		-		0.304	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09	SS/CPAF	Raytheon : Tucson, AZ	992.494	15.413		41.242	Nov 2015	0.972	Nov 2016	-		0.972	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332255	MIPR	NSWC/DD : Dahlgren, VA	36.121	0.900		0.000		0.059	Nov 2016	-		0.059	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332256	MIPR	JHU/APL/MD : Columbia, MD	49.831	3.062		0.000		0.217	Nov 2016	-		0.217	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332259	MIPR	NSWC/PHD : Port Hueneme, CA	14.082	0.000		0.000		0.335	Nov 2016	-		0.335	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332261	MIPR	NSWC Carderock : MD	18.282	0.921		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - AFRL	MIPR	AFRL : Edward AFB, CA	0.000	1.560		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - Aegis Tech Rep	MIPR	TechRep : Tucson, AZ	0.000	1.022		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - Aerojet	SS/CPAF	Aerojet : TBD	0.000	12.290		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - Corona	MIPR	NSWC Corona : Corona, CA	1.349	0.000		0.000		0.375	Nov 2016	-		0.375	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Standard Missile-3 (SM-3) Block IB Development - MD09 - Various	MIPR	Various - MDA : MD, NJ, CA	0.000	1.461		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09-AFMETCAL	MIPR	AFMETCAL : Heath, OH	0.000	1.616		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - IDT	MIPR	IDT : VA	0.000	0.145		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - MD09 - SM-3 BLK IIA AFFORDABILITY DEVELOPMENT	SS/CPIF	Raytheon : Tucson, AZ	0.000	0.000		12.100	Nov 2015	25.424	Nov 2016	-		25.424	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - MD09 - SM-3 BLK IIA INTEGRATION	SS/CPIF	Raytheon : Tucson, AZ	0.000	60.992		42.900	Nov 2015	159.247	Nov 2016	-		159.247	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - MD09 - SM-3 BLK IIA INTEGRATION - APL	MIPR	JHU/APL : Laurel, MD	0.000	0.225		13.400	Nov 2015	14.300	Nov 2016	-		14.300	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - MD09 - SM-3 BLK IIA INTEGRATION - DD	MIPR	NSWC DD : Dahlgren, VA	0.000	0.401		9.846	Nov 2015	10.000	Nov 2016	-		10.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - MIT/LL	MIPR	MIT/LL : MA	0.000	0.000		0.000		0.600	Oct 2016	-		0.600	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - NSWC IH	MIPR	NSWC IH : Indianhead, MS	0.000	0.000		0.000		0.450	Oct 2016	-		0.450	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - NSWC Corona	MIPR	NSWC Corona : Corona, CA	0.000	0.010		0.000		0.400	Oct 2016	-		0.400	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Standard Missile-3 (SM-3) Block IIA Development - NSWC PHD	MIPR	NSWC PHD : CA	0.000	0.046		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - NSWC/Crane	MIPR	NSWC/Crane : IN	0.000	0.000		0.000		0.300	Oct 2016	-		0.300	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Various	MIPR	Various : CA, VA, MD	0.000	0.000		0.000		2.550	Oct 2016	-		2.550	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - ATK	MIPR	ATK : Elkton MD	0.000	0.000		0.000		7.995	Sep 2017	-		7.995	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - NAVSEA	MIPR	NAVSEA : Tewksbury, MA	0.000	0.000		1.100	Nov 2015	1.237	Feb 2017	-		1.237	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD APL	MIPR	JHU/APL : Columbia, MD	0.000	3.336		5.737	Nov 2015	5.311	Nov 2016	-		5.311	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD LM	C/CPFF	Lockheed Martin : Moorestown, NJ	0.000	3.375		4.700	Nov 2015	4.441	Nov 2016	-		4.441	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD MIT	MIPR	Hanscom AFB - MIT/LL : Lexington, MA	0.000	3.085		2.200	Nov 2015	1.982	Dec 2016	-		1.982	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD MITRE	MIPR	CECOM - MITRE : Dahlgren, VA	0.000	0.000		0.345	Nov 2015	0.338	Dec 2016	-		0.338	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD NSWCCD	MIPR	NSWC DD : Dahlgren, VA	0.000	1.390		7.087	Nov 2015	7.236	Feb 2017	-		7.236	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 Raytheon	SS/CPAF	Raytheon : AZ	0.000	0.857		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Technology Design and Insertion - FT DIHD Support (DE)	MIPR	Various - MDA : AL,VA	0.000	0.000		2.000	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Various - MDA	MIPR	Various - MDA : AL,VA,CA	0.000	0.303		0.000		1.805	Jan 2017	-		1.805	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - Japan	MIPR	Ship Repair Facility : Japan	0.000	3.500		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - SUPSHIP	MIPR	SUPSHIP - Bath : Bath, ME	0.000	1.120		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - Various	MIPR	Various : AL, VA, IN, CA, MD	0.000	1.395		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - LM	SS/CPIF	Lockheed Martin : Moorestown, NJ	259.221	3.813		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - NSWC PHD	MIPR	NSWC/PHD : Port Hueneme, CA	53.610	3.094		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fleet Integration - 20098185191945	MIPR	NSWC/PHD : Port Hueneme, CA	17.366	0.222		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MD09	MIPR	SMDC/ARSTRST : Huntsville, AL	9.062	0.391		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 20117142371317	MIPR	CSCS : Dahlgren, VA	12.123	1.614		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 20117142371318	MIPR	JHU/APL/MD : Columbia, MD	8.073	1.133		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 2011714237132	MIPR	NSWC/DD : Dahlgren, VA	17.974	2.437		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 2012723031274	MIPR	MDA : VA	2.072	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
SM-3 Manufacturing - MIT/LL	MIPR	MIT/LL : MA	0.000	0.000		0.000		0.500	Nov 2016	-		0.500	Continuing	Continuing	Continuing
SM-3 Manufacturing - NSWC/DD	MIPR	NSWC/DD : Dahlgren, VA	0.000	0.000		0.000		1.500	Nov 2016	-		1.500	Continuing	Continuing	Continuing
SM-3 Manufacturing - SM-3 MANUFACTURING - MD09	SS/CPAF	Raytheon : Tucson, AZ	337.105	18.368		136.217	Dec 2015	251.154	Nov 2016	-		251.154	Continuing	Continuing	Continuing
SM-3 Manufacturing - Various	MIPR	Various : CA, VA, MD	0.000	0.000		0.000		1.500	Nov 2016	-		1.500	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering	Various	MDA : AL, VA	0.000	4.569		4.467	Nov 2015	4.269	Nov 2016	-		4.269	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - CSS Support	C/CPFF	Sparta : AL, CO	11.165	2.345		2.588	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - Engineering Support	C/CPAF	Northrop Grumman : CO	7.723	5.221		4.700	Nov 2015	6.222	Nov 2016	-		6.222	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - Integration	MIPR	AMRDEC : AL	6.417	5.691		4.347	Nov 2015	4.043	Nov 2016	-		4.043	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - Prime	C/CPFF	Teledyne Brown Engineering : AL, CO	49.182	17.467		25.478	Nov 2015	25.550	Nov 2016	-		25.550	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering	MIPR	MDA : VA, AL	40.396	8.324		6.852	Nov 2015	6.787	Nov 2016	-		6.787	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - CSS	C/CPFF	CSC : VA	10.930	2.073		1.224	Nov 2015	1.533	Nov 2016	-		1.533	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - Industry	C/CPAF	Boeing : VA	22.271	4.636		11.033	Nov 2015	11.085	Nov 2016	-		11.085	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Architecture - CSS	C/CPFF	Teledyne Brown Engineering : AL, CO	0.000	0.000		0.000		0.950	Nov 2016	-		0.950	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Architecture - MD09	C/CPAF	Northrop Grumman : CO	19.982	4.071		4.989	Nov 2015	4.028	Nov 2016	-		4.028	Continuing	Continuing	Continuing
BMDs Verification, Validation & Assessment (VV&A) - Verification & Assessment - CSS Support	C/CPFF	CSC : AL	0.000	4.720		3.852	Nov 2015	3.960	Nov 2016	-		3.960	Continuing	Continuing	Continuing
BMDs Verification, Validation & Assessment (VV&A) - Verification & Assessment - CSS Support (2)	C/CPFF	Sparta : AL	0.000	0.505		0.525	Nov 2015	0.555	Nov 2016	-		0.555	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDs Verification, Validation & Assessment (VV&A) - Verification & Assessment - Industry	C/CPAF	Boeing : AL	0.000	1.075		6.914	Nov 2015	6.927	Nov 2016	-		6.927	Continuing	Continuing	Continuing
BMDs Verification, Validation & Assessment (VV&A) - Verification & Assessment - Labs	MIPR	MITRE : VA	0.000	3.632		1.476	Nov 2015	1.539	Nov 2016	-		1.539	Continuing	Continuing	Continuing
BMDs Verification, Validation & Assessment (VV&A) - Verification & Assessment - OGA	MIPR	AMRDEC : AL	0.000	5.095		7.957	Nov 2015	7.338	Nov 2016	-		7.338	Continuing	Continuing	Continuing
BMDs Verification, Validation & Assessment (VV&A) - Verification & Assessment - UARC	MIPR	GTRI : GA, AL	0.000	1.119		0.000		1.043	Nov 2016	-		1.043	Continuing	Continuing	Continuing
Subtotal			4,239.262	560.695		605.831		732.990		-		732.990	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - MD09 - Civ Sal	MIPR	MDA : Arlington, VA	0.000	25.282		35.328	Oct 2015	34.746	Nov 2016	-		34.746	Continuing	Continuing	Continuing
Program Operations - MD09 - DA/DAC	MIPR	MDA : Arlington, VA	0.000	2.379		0.264	Nov 2015	0.264	Nov 2016	-		0.264	Continuing	Continuing	Continuing
Program Operations - MD09 - DD PM	MIPR	NSWC DD : Dahlgren, VA	0.000	7.017		7.632	Nov 2015	8.792	Nov 2016	-		8.792	Continuing	Continuing	Continuing
Program Operations - MD09 - IT	MIPR	MDA : Arlington, VA	0.000	0.181		0.519	Nov 2015	0.500	Nov 2016	-		0.500	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Operations - MD09 - MDA Travel	MIPR	MDA : Arlington, VA	0.000	1.610		2.065	Oct 2015	3.100	Nov 2016	-		3.100	Continuing	Continuing	Continuing
Program Operations - MD09 - MIDAESS	MIPR	MDA : Arlington, VA	0.000	43.352		48.168	Oct 2015	47.523	Nov 2016	-		47.523	Continuing	Continuing	Continuing
Program Operations - MD09 - NAVSEA	MIPR	NAVSEA : Washington, D.C	0.000	10.200		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - MD09 - NAVSEA Civ Sal	MIPR	NAVSEA : Washington, DC	0.000	12.825		13.856	Oct 2015	12.503	Nov 2016	-		12.503	Continuing	Continuing	Continuing
Program Operations - MD09 - NAVSEA RB Sal	MIPR	NAVSEA : Washington, DC	0.000	1.161		2.109	Oct 2015	2.132	Nov 2016	-		2.132	Continuing	Continuing	Continuing
Program Operations - MD09 - NAVSEA Train	MIPR	NAVSEA : Washington, DC	0.000	0.055		0.069	Oct 2015	0.053	Nov 2016	-		0.053	Continuing	Continuing	Continuing
Program Operations - MD09 - NAVSEA Travel	MIPR	NAVSEA : Washington, DC	0.000	1.027		1.056	Oct 2015	1.056	Nov 2016	-		1.056	Continuing	Continuing	Continuing
Program Operations - MD09 - PCS	MIPR	MDA : Arlington, VA	0.000	0.092		0.105	Nov 2015	0.100	Nov 2016	-		0.100	Continuing	Continuing	Continuing
Program Operations - MD09 - PE Comms	C/CPAF	Lockheed Martin : Moorestown, NJ	0.000	1.395		0.960	Nov 2015	0.618	Nov 2016	-		0.618	Continuing	Continuing	Continuing
Program Operations - MD09 - Security	MIPR	Various : VA	0.000	1.165		1.603	Nov 2015	1.651	Nov 2016	-		1.651	Continuing	Continuing	Continuing
Program Operations - MD09-IU	MIPR	Various : VA	0.000	1.151		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	108.892		113.734		113.038		-		113.038	-	-	-

Remarks
New accomplishment developed to align to Aegis Ballistic Missile Defense (BMD) FY 2014 restructure: - Funding was previously allocated within each budget accomplishment in Project MD09.

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4,239.262	669.587	719.565	846.028	-	846.028	-	-	-

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, MIPRs, and civilian salaries on the R-3.

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BMD 5.1 Demo											▲																	
BMD 5.1 Development	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦																
BMD 5.1 Critical Design Review (CDR)	△																											
BMD 5.0 CU Development	✦	✦																										
BMD 5.0 CU Certification			▲																									
BMD 4.0 Ship Installations	✦																											
BMD 5.0 Ship Installations	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦																
BMD 5.1 Certification													▲															
BL 5.3.x/BMD 4.x SDR/PDR									✦																			
BL 5.3.x/BMD 4.x CDR													✦															
BL 5.3.x/BMD 4.x EA																	✦											
BL 5.3.x/BMD 4.x Certification																					☆							
BMD 6.x SRR							✦																					
BMD 6.x SFR											✦																	
BMD 6.x PDR													✦															
BMD 6.x CDR																					✦							
BMD 6.x Demo																											▲	
BMD 6.x Certification																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 5.1 Demo	3	2017	3	2017
BMD 5.1 Development	1	2015	4	2017
BMD 5.1 Critical Design Review (CDR)	1	2015	1	2015
BMD 5.0 CU Development	1	2015	2	2015
BMD 5.0 CU Certification	3	2015	3	2015
BMD 4.0 Ship Installations	1	2015	1	2015
BMD 5.0 Ship Installations	1	2015	4	2017
BMD 5.1 Certification	3	2018	3	2018
BL 5.3.x/BMD 4.x SDR/PDR	2	2017	2	2017
BL 5.3.x/BMD 4.x CDR	1	2018	1	2018
BL 5.3.x/BMD 4.x EA	1	2019	1	2019
BL 5.3.x/BMD 4.x Certification	4	2019	4	2019
BMD 6.x SRR	4	2016	4	2016
BMD 6.x SFR	3	2017	3	2017
BMD 6.x PDR	1	2018	1	2018
BMD 6.x CDR	2	2019	2	2019
BMD 6.x Demo	2	2021	2	2021
BMD 6.x Certification	2	2022	2	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MC09 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
MC09: <i>Cyber Operations</i>	0.820	0.880	0.870	0.879	-	0.879	0.885	0.884	0.884	0.901	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2016 to FY 2017 is attributed contract cost adjustments.

A. Mission Description and Budget Item Justification

The funds in this project sustain Missile Defense Agency (MDA) DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager (PM/IAM) Plans of Action and Milestones (POA&Ms) for MDA Aegis Ballistic Missile Defense (BMD) mission systems. It maintains the Certification and Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&M on all MDA information systems.

This project supports the monitoring and tracking of cyber security mitigation detailed in Information Technology Security POA&Ms. Activities include preparation of C&A documentation and accreditation recommendations to the MDA Senior Information Assurance Officer (SIAO)/Certification Authority (CA) and DAA. Independent Verification and Validation (IV&V) team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities in the Project are necessary to comply with the Federal Information Security Management Act (FISMA).

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

	FY 2015	FY 2016	FY 2017
Title: Network / System Certification and Accreditation (C&A)	0.880	0.870	0.879
Articles:	-	-	-
Description: See Description below.			
FY 2015 Accomplishments:			
- Conducted cyber security / information assurance engineering and architecture planning for Aegis BMD information technology systems.			
- Planned and tested the IA controls for Ballistic Missile Defense System (BMDS) Aegis BMD systems.			
- Developed Aegis BMD DIACAP certification and accreditation packages.			
- Conducted Controls Validation Testing (CVT) of Aegis BMD mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.			
- Conducted annual information assurance reviews on the Aegis BMD enclaves to assess compliance in implementing and maintaining IA controls.			
FY 2016 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
Increase from FY 2015 is due to all cyber security efforts being moved from MD09 to MC09 to match execution. FY 2015 amounts will be updated accordingly to match actual costs at the end of FY 2015.			
<ul style="list-style-type: none"> - Conduct cybersecurity engineering and architecture requirements planning for Aegis BMD systems - Plan and test the Risk Management Framework (RMF) controls for Ballistic Missile Defense System (BMDS) in regards to Aegis BMD systems to comply with new directive, RMF for DoD Information Technology (DoDI 8510.01) to replace the DoD Information Assurance Certification and Accreditation Process (DIACAP). - Coordinate the development of Aegis BMD Risk Management Framework (RMF) accreditation packages - Conduct Controls Validation Testing (CVT) of Aegis BMD systems and provide a Risk Assessment Report (RAR) to mitigate cybersecurity deficiencies - Conduct annual cybersecurity reviews on the Aegis BMD systems to assess compliance in implementing and maintaining RMF controls 			
<p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Continue cybersecurity engineering and architecture requirements planning for Aegis BMD systems - Continue to plan and test the Risk Management Framework (RMF) controls for Ballistic Missile Defense System (BMDS) in regards to Aegis BMD systems to comply with new directive, RMF for DoD Information Technology (DoDI 8510.01) to replace the DoD Information Assurance Certification and Accreditation Process (DIACAP) - Continue coordination of the development of Aegis BMD RMF accreditation packages - Conduct regular Controls Validation Testing (CVT) of Aegis BMD systems and provide a Risk Assessment Report (RAR) to mitigate cybersecurity deficiencies - Conduct annual cybersecurity reviews on the Aegis BMD systems to assess compliance in implementing and maintaining RMF controls 			
Accomplishments/Planned Programs Subtotals	0.880	0.870	0.879

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	863.965	1,269.913	862.080	-	862.080	701.311	585.079	600.710	535.614	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	260.347	228.392	230.077	-	230.077	144.893	141.815	171.644	158.421	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and</i>	420.516	429.853	439.617	-	439.617	413.198	432.763	454.601	462.065	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Control, Battle Management & Communication</i>											
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	44.220	47.898	47.776	-	47.776	49.621	50.564	53.151	54.042	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	53.972	47.939	54.750	-	54.750	53.894	55.524	58.100	59.029	Continuing	Continuing
• 0604878C: <i>Aegis BMD Test</i>	88.041	78.468	95.012	-	95.012	127.720	91.461	88.217	98.525	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	121.413	34.970	43.293	-	43.293	29.045	19.259	21.294	21.646	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	259.278	172.645	106.038	-	106.038	0.000	0.000	0.000	0.000	0	537.961
• 0901598C: <i>Management HQ - MDA</i>	35.598	35.871	31.160	-	31.160	29.814	27.889	27.131	27.737	Continuing	Continuing

Remarks

D. Acquisition Strategy

Full and Open contract support through Missile Defense Agency Program Management Office.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - BOOZ ALLEN HAMILTON INC	C/CPIF	MDA : MCLEAN, VA	0.643	0.000		0.640	Nov 2015	0.644	Oct 2016	-		0.644	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies : Huntsville, AL	0.177	0.880		0.230	Nov 2015	0.235	Oct 2016	-		0.235	Continuing	Continuing	Continuing
Subtotal			0.820	0.880		0.870		0.879		-		0.879	-	-	-

Remarks
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.820	0.880	0.870	0.879	-	0.879	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity +
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✦

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MC09 Cyber Operations					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦				

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC09 Cyber Operations	1	2016	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MX09 / Aegis BMD Development Support			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
MX09: Aegis BMD Development Support	-	32.016	73.118	68.283	-	68.283	66.770	70.406	63.884	64.285	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Aegis Ballistic Missile Defense (BMD), in accordance with negotiated agreements between the United States Navy and the Missile Defense Agency (MDA) has identified and segregated funding for Developmental Support of Aegis BMD specific elements resident aboard Aegis capable Navy ships. Computer Program Support consists of, but is not limited to, reviews of Technical Observation Reports (TORs) that are generated by ship crews during exercises or deployments, determination of root causes and preparation of Computer Program Change Request (CPCR) to correct TORs, updates to the in-service computer program to apply, test and certify multiple CPCRs, and tests installation of Aegis Weapon System (AN/SPY-radar/Fire Control Section (FCS)) alignment updates as required. Aegis BMD provides support to Annual Integration Events (AIEs) to ensure any updated Aegis Combat System (ACS) computer programs do not degrade BMD equipped ships and provides distance and technical support for BMD equipped ships. Additionally, Aegis BMD continues to analyze the Ballistic Missile Defense System (BMDS) elements to ensure that any and all interoperability impacts are captured and resolved to eliminate any impact to the warfighter. Aegis continues to work with Program Executive Office (PEO) Integrated Warfare Systems (IWS) and PEO Command, Control, Communications, Computers, & Intelligence (C4I), Aegis' Navy counterparts, in order to maintain common C4I top level requirements for all Aegis BMD Baselines.

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

	FY 2015	FY 2016	FY 2017
Title: Fleet Integration	0.000	6.132	6.552
Articles:	-	-	-
Description: Provide Fleet operations and mission support to enable the conduct of sustained BMD operations; advocate war fighter requirements and fleet feedback in baseline development and capability upgrades to Aegis BMD weapon system; provide analysis and Mission Planning support for Geographic Combatant Commanders for operational application of Maritime BMD capabilities; and provide BMD Capabilities Analysis and Exercise Support for Aegis BMD baselines under development or currently employed in the Operational Fleet.			
FY 2015 Accomplishments: N/A			
FY 2016 Plans: Beginning in FY 2016, transferred from Project MD09, Fleet Integration - Provide In-service Engineering support to Aegis Ballistic Missile Defense (BMD) ships and resolve any identified issues.			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016		FY 2017
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<ul style="list-style-type: none"> - Provide leadership, engineering, and technical support to conduct Aegis BMD Combat System Readiness to resolve any identified issues. - Respond to Fleet training, analysis, and operational integration of maritime capabilities as part of Aegis BMD installations, BMD operations and BMD events and resolve any interoperability issues. - Provide reach back analytical support to the Combatant Commanders (COCOMs) for real world operations and resolve any readiness issues Aegis BMD ships might encounter. - Provide maintenance and updates for Force on Force Modeling and Simulation to ensure accurate characterization of capability is provided to the warfighter community. - Prepare and coordinate training documents for new BMD baselines to ensure that operators are provided current BMD baseline material for training. - Provide BMD specific training to BMD ships, COCOM, and Fleet Staffs to ensure full interoperability between Aegis BMD ships and Fleet staffs. <p>FY 2017 Plans: Increase from FY 2016 to FY 2017 is due to transition of responsibility for Aegis Scenario Development System to Fleet Integration from Aegis BMD Weapon System Support. This system enables Aegis BMD shipboard training for developmental Aegis BMD baselines.</p> <ul style="list-style-type: none"> - Research and define certification and warfighter acceptance requirements for Aegis BMD baselines to ensure successful capability transition to warfighter and baseline acceptance into MDA Operational Capacity Baseline (OCB) - Execute Aegis BMD capabilities analysis for Combatant Commanders and Fleet staffs - Define, develop and review Joint and Fleet Doctrine for incorporation of Aegis BMD capability - Develop Aegis BMD training simulations and scenarios to support shipboard training for developmental Aegis BMD baselines, including BMD Qualifications(BMDQ) and higher level exercises - Develop and execute warfighter feedback process to enhance Aegis BMD functional capability development and influence future Aegis BMD requirements - Support MDA Test Community and Combatant Commanders in BMD Exercises and Wargames using Extended Air Defense Simulation(EADSim), a portable simulation of Aegis BMD capability 				
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<p>Title: Infrastructure Upgrades</p> <p style="text-align: right;">Articles:</p> <p>Description: Special Access Program (SAP) infrastructure labor to include Contractor Program Security Officers, Information Assurance Officers, and System Administrators that will oversee the data transfer efforts. Funds IT services in support of the Aegis RDT&E mission. This includes: IT help-desk services; portal and data services; records management; business automation services; and desktop and Special Purpose Processing Nodes (SPPNs) maintenance and licenses. In addition,</p>	1.877	18.658		20.439
	-	-		-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2015	FY 2016	FY 2017
funds will be used to replace critical IT infrastructure at end-of-life and to implement DoD mandated projects in support of the Joint Information Environment (JIE) initiative.				
<p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Began transfer of necessary data between collateral and SAP environments to comply with Federal and DoD mandates (Cybersecurity and Joint Information Environment) - Coordinated configuration and data management to ensure Modeling and Simulation (M&S) and software builds are identical in collateral and SAP environment <p>FY 2016 Plans:</p> <p>Increase from FY 2015 to FY 2016 is attributed to new security efforts as directed by the Security Classification Guide (SCG) and the consolidation and realignment of funds from MD09, MD40 and MT09 for IT services in support of the Aegis RDT&E mission.</p> <ul style="list-style-type: none"> - Transfer necessary data between collateral and SAP environments to comply with Federal and DoD mandates (Cybersecurity and Joint Information Environment) - Configuration and data management to ensure Modeling and Simulation (M&S) and software builds are identical in collateral and SAP environment - Fund Aegis IT services such as IT help-desk services; portal and data services; records management; business automation services; and desktop and SPPN maintenance and licenses. - Fund critical end-of-life IT equipment replacements - Fund IT infrastructure upgrade planning and implementation efforts to accomplish DoD mandated IT projects (JIE and DoD CIO Information Resources Management (IRM) initiatives) <p>FY 2017 Plans:</p> <p>Increase from FY 2016 to FY 2017 is attributed to additional security efforts as directed by the Security Classification Guide (SCG)</p> <ul style="list-style-type: none"> - Transfer necessary data between collateral and SAP environments to comply with Federal and DoD mandates (Cybersecurity and Joint Information Environment) - Configuration and data management to ensure Modeling and Simulation (M&S) and software builds are identical in collateral and SAP environment - Fund Aegis IT services such as IT help-desk services; portal and data services; records management; business automation services; and desktop and SPPN maintenance and licenses. - Fund critical end-of-life IT equipment replacements - Fund IT infrastructure upgrade planning and implementation efforts to accomplish DoD mandated IT projects (JIE and DoD CIO IRM initiatives) 				
Title: Aegis Ballistic Weapon System Support		30.139	48.328	41.292

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<p align="right">Articles:</p> <p>Description: This project provides Command, Control, Computer, Communications and Intelligence (C4I) systems engineering for the development and fielding of Aegis Ballistic Missile Defense (BMD) communications systems which includes Aegis BMD and BMDS interoperability, integration of space and joint sensors systems with Aegis BMD and Aegis BMD baseline certifications; Integrated Air and Missile Defense (IAMD) planning; and maintaining Top Level Requirements (TLR) between the Missile Defense Agency and the Navy. It also provides Aegis BMD Mission and Quality Assurance, supporting assessment of flight test readiness and ensuring identification of root causes of failures/non conformances and sufficiency of corrective actions.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Provided Sustainment of Standard Missile-3 (SM-3) to include recertification, transportation, integrated logistics support, VLS Canister support, quality and reliability, minor repairs, and surveillance. - Provided In-service Engineering support to Aegis BMD configured ships and sites - Provided engineering/technical support necessary to achieve Aegis BMD Combat System Readiness - Provided assistance/engineering support to resolve Fleet issues related to casualties on Aegis BMD hardware/software - Provided reach back analytical support to the Fleets/COCOMs for real world operations - Provided software/hardware maintenance updates to Aegis BMD ships/sites - Provided BMD specific training to BMD ships, COCOM/Fleet Staffs, and Regional Maintenance Centers - Developed, certified, fielded BMD 4.0.3 which corrected software errors and incorporated Discrimination Improvements for Homeland Defense <p>FY 2016 Plans:</p> <p>Increase from FY 2015 to FY 2016 attributed to funding for Computer Program Development Support efforts previously transferred from Project MX09, Aegis BMD Operations and Support</p> <ul style="list-style-type: none"> - Conduct Command, Control, Computer, Communications and Intelligence (C4I) systems engineering for the development of Aegis BMD requirements, analysis of development efforts by other BMDS element for potential Aegis BMD interoperability issues, and resolve any identified interoperability problems - Implement C4I systems for operational deployment by Aegis BMD ships and elements - Maintain C4I Top Level Requirements (TLRs) for development of systems supporting command and control, and communications equipment between Navy and MDA Program Executive Offices - Certify Deterministic Routing for Aegis Ashore and Aegis BMD ships, including development of Concepts of Operation (CONOPS), and Tactics for use of this capability, and deployment of operational assets - Conduct Navy and Joint Link certifications required for BMD Baseline certifications for operational deployment - Certify overhead satellite data sources to meet Aegis BMD fire control capabilities in support of dual path requirement in Aegis BMD 5.1 	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency	Date: February 2016
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Develop and implement collaborative Integrated Air and Missile Defense (IAMD) planning tools for ensuring effective Strategic Homeland, Regional, and Theater Aegis BMD employment - Implement and manage C4I aspects of the BMDS Test Site (BTS) San Diego upgrade plan to maintain fleet representative C4I configurations to support testing, troubleshooting, and Fleet operations - Conduct Mission and Quality Assurance (QA) reviews for failures and non-conformance for the SM-3 Block IIA - Support all phases of computer program baseline functionality by providing engineering development testing, certification testing, and special testing - Perform system troubleshooting and maintenance as required for Aegis BMD related systems - Provide preventative and corrective maintenance services and upgrades in support of Aegis BMD systems and associated support systems - Support the fielded Aegis BMD computer programs baselines approved as an Operational Capability Baseline - Provide engineering support to Operationally Capable Baseline ships that participate in BMD test events - Conduct test event analysis to investigate Technical Observation Reports (TORs) and BMD Deficiency Reports (BDRs) in order to provide an engineering solution for impacts to Aegis BMD capabilities - Develop Computer Program Change Requests (CPCRs) and determine appropriate baseline for insertion - Monitor and address Fleet feedback concerns raised during waterfront technical exchanges and ship visits - Update threat adaptation data to keep pace with emergent threats - Provide support for contingency operations of National interest <p>FY 2017 Plans: Decrease in funding from FY 2016 to FY 2017 is due to: -Completion of Operational Testing for BMD 3.6 and BMD 4.0 transferred computer program sustainment activities for these baselines to Operations & Maintenance appropriation</p> <p>FY 2017 requirement supports: - Prior to completion of operational testing, sustain Aegis BMD computer program baseline variants of Baseline 9 Common Source Library (CSL) - Provide one Baseline 9 maintenance build - Sustain the Beowulf classified computing infrastructure - Sustain the Automated Test and Analysis (ATA) / Automated Test and Retest (ATRT) tool - Provide test site usage for maintenance and support of baselines under development - Provide C4I Systems Engineering for the development of requirements, analysis of BMDS elements, and interoperability - Certify Deterministic Routing of Aegis Ashore and Aegis BMD including Concepts of Operations(CONOPS)/Tactics, Techniques, and Procedures (TTP) - Implement and certify BMD capabilities in C4I systems</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency **Date:** February 2016

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Conduct Navy and Joint Link certifications required for BMD baseline certifications - Certify Overhead Persistent Infrared (OPIR) for dual path requirement in BMD 5.1 - Develop and implement IAMD planning capabilities and BMD collaborative planning concepts - Provide FFRDC) and URDC evaluation of technical proposals and proposed technical solutions by small industry business partners; Provide feasibility analysis of proposed solutions and testing of hardware prototypes - Facilitate preliminary integration efforts to incorporate Space Based Infrared Systems (SBIRS) and Future Naval Capability (FNC) projects into Aegis BMD architecture 			
Accomplishments/Planned Programs Subtotals	32.016	73.118	68.283

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

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0604878C: <i>Aegis BMD Test</i>	88.041	78.468	95.012	-	95.012	127.720	91.461	88.217	98.525	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	121.413	34.970	43.293	-	43.293	29.045	19.259	21.294	21.646	Continuing	Continuing
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	259.278	172.645	106.038	-	106.038	0.000	0.000	0.000	0.000	0	537.961

Remarks

D. Acquisition Strategy

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

Competition will be maximized for purchase of any products or services as appropriate.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fleet Integration - MX09 - Fleet APL	C/CPAF	JHU/APL/MD : Columbia, MD	0.000	0.000		1.342	Nov 2015	1.681	Nov 2016	-		1.681	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet DD	MIPR	NSWC DD : Dahlgren, VA	0.000	0.000		2.913	Nov 2015	2.863	Nov 2016	-		2.863	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet PHD	MIPR	NSWC PHD : Port Huenmene	0.000	0.000		0.432	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet SMDC	MIPR	SMDC/ARSTRST : Huntsville, AL	0.000	0.000		0.369	Nov 2015	0.529	Nov 2016	-		0.529	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet CSCS	MIPR	CSCS : Dahlgren, VA	0.000	0.000		1.076	Nov 2015	1.479	Nov 2016	-		1.479	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - ICT Funding	SS/CPAF	Northrop Grumman : AL,CA,CO,NM,VA,HI	0.000	0.000		11.832	Oct 2015	9.771	Oct 2016	-		9.771	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S APL	SS/CPAF	JHU/APL : Laurel, MD	0.000	0.000		0.400	Nov 2015	0.650	Nov 2016	-		0.650	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S Corona	MIPR	NSWC Corona : Corona, CA	0.000	0.000		0.630	Nov 2015	1.000	Nov 2016	-		1.000	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S LM	C/CPAF	Lockheed Martin : Moorestown, NJ	0.000	0.928		1.296	Nov 2015	2.410	Nov 2016	-		2.410	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S MIT	C/CPAF	MIT : Lexington, MA	0.000	0.000		0.120	Nov 2015	0.200	Nov 2016	-		0.200	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S RMS	C/CPAF	Raytheon : Tucson, AZ	0.000	0.000		3.720	Nov 2015	2.100	Nov 2016	-		2.100	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S DD	MIPR	NSWC DD : Dahlgren, VA	0.000	0.949		0.660	Nov 2015	0.710	Nov 2016	-		0.710	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Upgrades - MX09- TD SPAWAR	MIPR	SPAWAR : CA	0.000	0.000		0.000		3.598	Jan 2017	-		3.598	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW APL	SS/CPFF	JHU/APL : Columbia, MD	0.000	2.890		0.900	Nov 2015	0.945	Nov 2016	-		0.945	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW DD	MIPR	NSWC DD : Dahlgren, VA	0.000	8.991		5.000	Nov 2015	3.156	Nov 2016	-		3.156	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW LM	C/CPFF	Lockheed Martin : Moorestown, NJ	0.000	10.740		12.000	Nov 2015	8.856	Nov 2016	-		8.856	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW NAVSEA	MIPR	NAVSEA : Washington, DC	0.000	0.863		17.038	Nov 2015	17.953	Nov 2016	-		17.953	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW SSCPAC	MIPR	SPAWAR : San Diego, CA	0.000	0.000		2.390	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW TECH REP	MIPR	Tech Rep : Moorestown, NJ	0.000	0.000		0.600	Nov 2015	0.345	Nov 2016	-		0.345	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW Wallops	MIPR	SCSC : Wallops Island, VA	0.000	0.000		2.000	Nov 2015	0.299	Nov 2016	-		0.299	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - D	MIPR	MDA : Arlington, VA	0.000	0.000		1.037	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - IH	MIPR	NSWC Indian Head : MD	0.000	0.249		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - Raytheon	SS/CPAF	Raytheon : AZ	0.000	5.644		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - TD Corona	MIPR	NSWC Corona : Corona, CA	0.000	0.762		0.240	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Weapon System Support - MX09 - TD JHU/APL	SS/CPFF	JHU/APL : Columbia, MD	0.000	0.000		0.750	Nov 2015	0.906		-		0.906	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - TD MITRE	MIPR	CECOM - MITRE : Dahlgren, VA	0.000	0.000		0.900	Nov 2015	1.328		-		1.328	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - TD NSWC DD	MIPR	NSWC DD : Dahlgren, VA	0.000	0.000		0.820	Nov 2015	1.110		-		1.110	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - TD PHD	MIPR	NSWC PHD : Port Hueneme, CA	0.000	0.000		0.250	Nov 2015	0.319		-		0.319	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - TD SSCPAC	MIPR	SPAWAR : San Diego, CA	0.000	0.000		3.903	Nov 2015	5.388		-		5.388	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW PHD	MIPR	NSWC PHD : Port Hueneme, CA	0.000	0.000		0.500	Nov 2015	0.687	Nov 2016	-		0.687	Continuing	Continuing	Continuing
Subtotal			0.000	32.016		73.118		68.283		-		68.283	-	-	-

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	32.016	73.118	68.283	-	68.283	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Significant Event Complete	Milestone Decision Complete	Element Test Complete	System Level Test Complete	Complete Activity
Significant Event Planned	Milestone Decision Planned	Element Test Planned	System Level Test Planned	Planned Activity

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MX09 Aegis BMD Development Support																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MX09 Aegis BMD Development Support	1	2016	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	136.633	59.163	37.094	43.876	-	43.876	40.899	35.763	30.610	28.116	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2016, Program Wide Support (PWS) reflects a proportional change as a result of decreases in BMD Aegis and in FY 2017, reflects a proportional change as a result of increases in BMD Aegis.
 Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

A. Mission Description and Budget Item Justification

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire BMDS. It Includes Government Civilians, and Contract Support Services. This provides integrity and oversight of the BMDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes Global Deployment personnel and support performing deployment site preparation and activation and, provides facility capabilities for MDA Executing Agent locations. Other MDA wide costs includes: physical and technical security; civilian drug testing; audit readiness; the Science, Technology, Engineering, and Mathematics (STEM) program; legal services and settlements; travel and agency training; office, equipment, vehicle, and warehouse leases; utilities and base operations; data and unified communications support; supplies and maintenance; materiel and readiness and central property management of equipment; and similar operating expenses. PWS is allocated on a pro-rata basis and therefore, fluctuates by year based on the adjusted RDT&E profile (which excludes: 0305103C Cyber Security Initiative, 0603274C Special Programs, 0603913C Israeli Cooperative Program and 0901598C Management Headquarters).

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

	FY 2015	FY 2016	FY 2017
Title: Program Wide Support	59.163	37.094	43.876
Articles:	-	-	-
Description: See description below			
FY 2015 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2016 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2017 Plans: - See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	59.163	37.094	43.876

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance SRM (MIPR)	MIPR	Various : Multi: AL, CO, CA, VA, AK	0.000	0.174		0.000		1.220	Jan 2017	-		1.220	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	0.108	1.245		0.000		0.876	Jul 2017	-		0.876	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various/Multi: AL, CA, CO, : NM, VA, various	0.000	0.623		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries	Allot	MDA : Multi: AK, AL, CO, CA, VA	95.790	38.391		33.229	Nov 2015	36.828	Nov 2016	-		36.828	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various : Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	18.017	12.962		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	21.661	4.645		3.621	Nov 2015	4.705	Aug 2017	-		4.705	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support, International, and materiel and Readiness	MIPR	Naval Surface Warfare Center : AL, VA	0.000	1.123		0.244	Mar 2016	0.247	Mar 2017	-		0.247	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	MIPR	Various : Multi: AL, CA, CO, VA	1.057	0.000		0.000		0.000		-		0.000	1.615	2.672	0
Subtotal			136.633	59.163		37.094		43.876		-		43.876	-	-	-

Remarks

N/A

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	136.633	59.163	37.094	43.876	-	43.876	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support
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	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks N/A									
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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ✦
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✧

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MD40 Program-Wide Support					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧				

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Missile Defense Agency **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2016	4	2020