Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Missile Defense Agency	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	166.509	131.012	137.783	95.756	-	95.756	80.684	94.138	146.910	137.601	Continuing	Continuing
MT09: *AEGIS BMD Test*	164.084	127.014	132.091	92.533	-	92.533	77.119	89.177	142.504	133.198	Continuing	Continuing
MD40: *Program Wide Support*	2.425	3.998	5.692	3.223	-	3.223	3.565	4.961	4.406	4.403	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

FY 2019 decrease reflects flight tests consistent with the Integrated Master Test Plan (IMTP).

FY 2017 MISSILE DEFEAT ENHANCEMENT REPROGRAMMING (FY17-26 PA): $46.000 million was required to address emergency warfighting requirements in support of additional SM-3 IIA missile testing. Additional classified details will be provided under a separate cover.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: $3.315 million is required to address emergency warfighting requirements in support of Aegis SM-3 Block IIA Missile Test.

A. Mission Description and Budget Item Justification

The Aegis Ballistic Missile Defense (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 Ballistic Missile Defense System (BMDS) upgrades. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U.S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges and the ability to destroy Short-Range Ballistic Missiles (SRBMs), Medium-Range Ballistic Missiles (MRBMs), and Intermediate-Range Ballistic Missiles (IRBMs) in the midcourse phase of flight in addition to 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 SM-3 configuration enable Aegis BMD to provide effective and supportable defensive capability against longer range more sophisticated threats and an enduring Aegis Ashore defensive capability.

Proving Missile Defense:
- Working with all U.S. Armed Services that participate in the BMDS level Operational Test Agency (OTA) Team, with the support of the Director of Operational Test and Evaluation (DOT&E), MDA has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the warfighter are operationally effective, suitable, and survivable.
- As part of the MDA's rigorous test program, System Pre-Flight predictions provide confidence in test execution by predicting element performance and exercising element interfaces. System Post-Flight Reconstruction replicates the BMDS configuration, actual environmental conditions, and target dynamics observed in flight to anchor Modeling and Simulation (M&S) results.
- The IMTP is event-oriented and extends until the collection of all identified data is completed ensuring adequate test investments.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Missile Defense Agency	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	95.012	134.468	73.059	-	73.059
Current President's Budget	131.012	137.783	95.756	-	95.756
Total Adjustments	36.000	3.315	22.697	-	22.697
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-10.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• FY 2017 Request for Additional Appropriations	0.000	0.000	0.000	-	0.000
• Missile Defeat and Defense Enhancement	46.000	3.315	0.000	-	0.000
• Other Adjustment	0.000	0.000	22.697	-	22.697

Change Summary Explanation

The increase in FY 2019 from PB18 to PB19 reflects the support of the flight test schedule consistent with the IMTP.

FY 2017 MISSILE DEFEAT ENHANCEMENT REPROGRAMMING (FY17-26 PA): $46.000 million was required to address emergency warfighting requirements in support of additional SM-3 IIA missile testing. Additional classified details will be provided under a separate cover.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: $3.315 million is required to address emergency warfighting requirements in support of Aegis SM-3 Block IIA Missile Test.

PB19 reflects approved out year Missile Defeat and Defense Enhancement (MDDE) tails.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency												Date: February 2018
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604878C / *Aegis BMD Test*				Project (Number/Name) MT09 / *AEGIS BMD Test*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
MT09: *AEGIS BMD Test*	164.084	127.014	132.091	92.533	-	92.533	77.119	89.177	142.504	133.198	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Budget Accomplishments are structured for direct traceability to the IMTP and efficient management of testing execution efforts. Test funding falls under the following accomplishments: Aegis BMD Flight Test Execution, Aegis BMD Ground Test Execution, Aegis BMD Test Resources and Engineering & Analysis.

A. Mission Description and Budget Item Justification

The FY 2019 Aegis BMD Test Program will concentrate on critical IMTP flight tests that support the U.S. Navy and European Phased Adaptive Approach (EPAA), Weapon System Certification, and Missile Production Decision requirements. Aegis BMD will concentrate on Aegis BL 9.C2 (BMD 5.x) and Standard Missile SM-3 Block IIA operational testing in FY 2019 to include FTO-03 E2 demonstrating BMDS engagement of an IRBM with CMs using a Regional/Theater BMDS architecture.

Proving Missile Defense:
- Working with the U.S. Navy Integrated Warfare System (IWS) Services' Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), MDA has developed a test program to improve missile defense capabilities under development and ensure the capabilities transferred to the warfighter are operationally effective, suitable, and survivable
- As part of MDA's rigorous test program, System Pre-Flight predictions provide confidence in test execution by predicting element performance and exercising element interfaces. System Post-Flight Reconstruction replicates the Ballistic Missile Defense System configuration and actual environmental conditions and target dynamics observed in flight to anchor M&S results
- The IMTP is event-oriented and extends until the collection of all identified data is completed ensuring adequate test investments

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Aegis BMD Flight Test Execution	83.680	62.455	33.707
Articles:	-	-	-
Description: Aegis BMD Ground Test Program performs comprehensive testing of Aegis BMD Components and their interoperability with the BMDS using accredited M&S that provides the evidence required for the MDA and Combatant Commanders to transition the capability to the Operational Capacity Baseline. More specifically, ground testing is used to collect data for Aegis BMD characterization and assessment, flight test risk reduction, and exploration of scenarios where flight testing is either impracticable or impossible. Recurring Accomplishments include: -Participate in BMD System Ground Tests to include pre-mission analysis, mission execution, and post-mission analysis.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
-Conduct planning to ensure BMDS Test Site (BTS) capabilities support Aegis BMD testing, exercises, flight tests, and demonstration requirements. This includes upgrades to the ground testing labs to ensure compliance with operational and test baselines. -Continue testing of U.S. Navy C4I systems and Aegis BMD baselines to ensure BMDS interoperability. -Continue to participate in System Level Ground Testing as an element of the layered BMDS to collect data for Aegis BMD characterization and assessment and exploration of scenarios where flight testing is either impracticable or impossible. -Continue operation support of HWIL M&S for Element ground testing. -Prepare and conduct a Hardware Ground Test of cooled gas Attitude Control System (ACS). -Aegis BMD HWIL lab participation align to the IMTP Ground Test schedule and early integration to provide risk reduction for Ground Test runs for the record and implementation of Continuous Integration and Continuous Agile Testing Concept of Operations (CONOPS) pathfinders. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** Decrease from FY 2017 to FY 2018 support the flight test schedule and consistent with the IMTP and emergency warfighting requirements. ***FY 2019 Plans:*** Support of flight tests scheduled in the IMTP and Aegis BMD 5.0 with Counter Measures. These operational tests support the U.S. Navy, BMDS Increment 5 - Robust IRBM Defense, and the EPAA for the defense of Europe. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease from FY 2018 to FY 2019 is in support of reflects support of the flight test schedule consistent with the IMTP.			
Title: Aegis BMD Ground Test Execution	11.489	29.680	27.935
Articles:	-	-	-
Description: Aegis BMD Ground Test Program performs comprehensive testing of Aegis BMD Components and their interoperability with the BMDS using accredited M&S that provides the evidence required for the MDA and Combatant Commanders to transition the capability to the Operational Capacity Baseline. More specifically, ground testing is used to collect data for Aegis BMD characterization and assessment, flight test risk reduction, and exploration of scenarios where flight testing is either impracticable or impossible. Recurring Accomplishments include: -Participate in BMD System Ground Tests to include pre-mission analysis, mission execution, and post-mission analysis. -Conduct planning to ensure BMDS Test Site (BTS) capabilities support Aegis BMD testing, exercises, flight tests, and demonstration requirements. This includes upgrades to the ground testing labs to ensure compliance with operational and test baselines.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
-Continue testing of U.S. Navy C4I systems and Aegis BMD baselines to ensure BMDS interoperability. -Continue to participate in System Level Ground Testing as an element of the layered BMDS to collect data for Aegis BMD characterization and assessment and exploration of scenarios where flight testing is either impracticable or impossible. -Continue operation support of HWIL M&S for Element ground testing. -Prepare and conduct a Hardware Ground Test of cooled gas Attitude Control System (ACS). -Aegis BMD HWIL lab participation align to the IMTP Ground Test schedule and early integration to provide risk reduction for Ground Test runs for the record and implementation of Continuous Integration and Continuous Agile Testing Concept of Operations (CONOPS) pathfinders. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** Increase in funding from FY 2017 to FY 2018 is due to evolving Aegis BMD HWIL lab participation in early integration for Ground Tests, Implementation of Continuous Integration and Continuous Agile Testing Concept of Operations (CONOPS) pathfinders. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The decrease in funding from FY 2018 to FY 2019 is due to decreased Aegis BMD HWIL lab participation in early integration for Ground Tests, Implementation of Continuous Integration and Continuous Agile Testing Concept of Operations (CONOPS) pathfinders.			
Title: Aegis BMD Test Resources	20.118	26.931	18.508
Articles:	-	-	-
Description: This effort provides resources to conduct ground and flight testing to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the warfighter are operationally effective, suitable, and survivable. Recurring Accomplishments include: - Provide Core Test and Evaluation support for Aegis BMD test and evaluation missions and laboratories, field activities, range support activities, analysis activities, and shipboard and land-based test site test teams. - Provide Test & Evaluation (T&E) infrastructure support for Aegis BMD Test Missions as reflected in the IMTP to collect truth data for post-event analysis. - Conduct core Element M&S validation and accreditation activities. - Exercise tactical communications during testing to ensure interoperability with the BMDS and Combatant Command (CCMD) systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Continue core test planning for FY 2017 and FY 2018 Aegis BMD test missions to include assessment of target requirements, development of M&S, and preparation of the range to ensure all missions are executable and apply to the technical program objectives. - Develop and execute risk-reduction activities to minimize or mitigate shipboard and missile test and programs risks. - Develop and execute data collection plans and supporting instrumentation requirements. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** Increase in funding from FY 2017 to FY 2018 is due to realignment and consolidation of core test functions including Continuous Agile Testing. ***FY 2019 Plans:*** Maintain core test and evaluation capability. Conduct ground and flight testing to improve the missile defense capabilities and ensure the capabilities transferred to the warfighter are effective. Begin Continuous Integration implementation in preparation for Continuous Agile Testing. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The decrease in funding from FY 2018 to FY 2019 is due to realignment and consolidation of core test functions including Continuous Agile Testing.			
Title: Engineering & Analysis	11.727	13.025	12.383
Articles:	-	-	-
Description: The Engineering and Analysis effort provides essential BMDS ground and flight test event planning, execution, and evaluation activities for each test event: Recurring Accomplishments: - Designing test architecture, defining test objectives and evaluation criteria, defining target requirements, and generating ground and flight test scenarios appropriate to the data collection requirements to assess BMDS performance and anchor M&S. - Producing the threat data for BMDS ground and flight tests. - Coordinating with BMDS OTA to address, coordinate, and disposition test issues to achieve closure through recommended action plans. - Delivering HWIL M&S integration test cases. - Conducting M&S HWIL Integration Benchmark and integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture. - Integrating, testing, functionally qualifying, and delivering end-to-end BMDS simulations supporting ground test missions. - Analyzing System-level interoperability. - Conducting modeling and technical analysis for Combatant Command wargames and exercises.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Utilizing M&S for pre-test assessment, post-test review, and M&S updates. - Providing test configuration management; risk assessments; and anomaly/deficiency review, assessment and closure. - Analyzing test results to identify verification and validation data collection shortfalls and reassigning objectives to future test events as required. - Documenting BMDS test observations for system-level test anomalies and coordinating the resulting BMDS Discrepancy Reports within the Failure Reporting, Analysis, and Corrective Action System (FRACAS) - Providing the Quick Look Brief, Mission Data Review (MDR), and Executive MDR. IMTP and infrastructure tasks include: - Providing long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration. - Upgrading test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS)) to enhance analysis capability and efficiency. - Populating the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments. - Providing engineering analysis process software to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), and ManPower Loading (MPL). - Incrementally improving and providing infrastructure, software, and MDA/IA compliance for the RApid Scenario Prototyping (RaSP) capability. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** FY 2018 increase keeps pace with projected FY 2018-FY 2022 IMTP events. - Validate test event data collection and conduct post-test analyses supporting the EPAA Phase 3 Technical Capability Declaration. ***FY 2019 Plans:*** Aligned to IMTP events. - Validate test event data collection and conduct post-test analyses supporting assessments and fielding decisions for BMDS Increments 5 and 6A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease from FY 2018 to FY 2019 keeps pace with projected FY 2019 - FY 2023 IMTP events.			
Accomplishments/Planned Programs Subtotals	127.014	132.091	92.533

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• 0603892C: *AEGIS BMD*	889.489	860.788	767.539	-	767.539	780.085	707.901	693.256	562.748	Continuing	Continuing
• 0604880C: *Land Based SM-3 (LBSM3)*	40.452	30.486	27.692	-	27.692	29.263	28.370	27.228	28.225	Continuing	Continuing
• 0604881C: *AEGIS SM-3 Block IIA Co-Development*	102.272	9.739	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	112.011

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution	MIPR	Various - DT : HI,VA,CA,MA,NC	0.000	0.000		11.825	Dec 2017	4.790	Dec 2018	-		4.790	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09 - CPF	MIPR	COMPACTFLT : HI	0.000	0.000		1.337	Dec 2017	1.300	Dec 2018	-		1.300	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09 - Corvid	SS/CPFF	Corvid : NC	0.000	1.911		1.322	Dec 2017	0.560	Dec 2018	-		0.560	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09 -JHU/APL	SS/CPFF	JHU/APL : Columbia MD	5.194	4.400	Dec 2016	12.315	Dec 2017	4.750	Dec 2018	-		4.750	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09- Corona	MIPR	NSWC Corona : CA	3.165	2.296	Nov 2016	3.200	Dec 2017	1.770	Dec 2018	-		1.770	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-DMEA	MIPR	DMEA : McClellan, CA	0.000	0.000		0.300		0.400		-		0.400	0.000	0.700	0.000
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-L3 Communications	C/CPFF	L3 Communications : Waco, TX	0.000	0.824	Apr 2017	2.100	Dec 2017	1.430	Dec 2018	-		1.430	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NAWC/AD	MIPR	NAWC/AD-PHX Air : Pax River, MD	2.058	0.880	Apr 2017	1.200	Dec 2017	1.870	Dec 2018	-		1.870	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NAWC/PM	MIPR	NAWC/PM : Pt. Mugu, CA	2.150	0.958	Oct 2016	3.505	Dec 2017	0.060	Dec 2018	-		0.060	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NRL	MIPR	Naval Research Lab : Washington, DC	0.000	0.000		0.450	Dec 2017	0.860	Dec 2018	-		0.860	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NSWC DD	MIPR	NSWC Dahlgren : Dahlgren, VA	1.531	1.262	Dec 2016	1.360	Dec 2017	0.670	Dec 2018	-		0.670	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-NSWCCR	MIPR	NSWC Carderock : Potomac, MD	0.000	0.248	Jan 2017	0.800	Dec 2017	6.820	Dec 2018	-		6.820	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-PHD	MIPR	NSWC PHD : Pt. Hueneme, CA	4.935	3.372	Oct 2016	5.420	Dec 2017	6.190	Dec 2018	-		6.190	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-PMRF	MIPR	PMRF Barking Sands : Kauai, HI	5.015	6.750	Oct 2016	8.780	Dec 2017	0.410	Dec 2018	-		0.410	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-SSCPAC	MIPR	SPAWAR : San Diego, CA	1.277	0.515	Nov 2016	1.250	Dec 2017	1.150	Dec 2018	-		1.150	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-Various	MIPR	Various : HI, VA, CA, MA, NC, NJ, AZ	17.297	46.003	Oct 2016	6.736	Dec 2017	0.327		-		0.327	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Aegis BMD Flight Test Execution - MT09-Xontech	C/CPFF	Xontech : Colorado Spring, CO	0.000	0.000		0.555	Dec 2017	0.350	Dec 2018	-		0.350	Continuing	Continuing	Continuing
Aegis BMD Flight Test Execution - Flight Test Execution	SS/CPFF	Lockheed Martin : NJ	1.140	11.167		0.000		0.000		-		0.000	0.000	12.307	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis BMD Flight Test Execution - Flight Test Execution - RMS	SS/CPFF	Raytheon : AZ	6.400	3.094		0.000		0.000		-		0.000	0.000	9.494	0.000
Aegis BMD Ground Test Execution - ATK	MIPR	ATK : Elkton MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - CORONA	MIPR	NSWC Corona : CA	1.450	0.650	Nov 2016	1.500	Nov 2017	0.982	Dec 2018	-		0.982	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - JHU/APL MDA	SS/CPFF	JHU/APL : MDA	0.500	0.000		3.000	Nov 2017	5.355	Dec 2018	-		5.355	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - LM	MIPR	Lockheed Martin : Moorestown, NJ	10.321	6.194	Oct 2016	8.802	Nov 2017	3.570	Dec 2018	-		3.570	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - MDA	MIPR	MDA : Arlington, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - PHD	MIPR	NSWC PHD : Pt. Hueneme, CA	1.003	0.331	Nov 2016	1.500	Nov 2017	1.636	Dec 2018	-		1.636	Continuing	Continuing	Continuing
Aegis BMD Ground Test Execution - Aegis BMD Ground Test Execution - MT09 - SSCPAC	MIPR	SPAWAR : San Diego, CA	7.626	4.314	Oct 2016	14.878	Nov 2017	16.392	Dec 2018	-		16.392	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - APL	SS/CPFF	JHU/APL : Columbia MD	25.484	4.300	Oct 2016	10.031	Nov 2017	6.405	Dec 2018	-		6.405	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD	MIPR	Aegis BMD : VA	0.745	0.000		0.000		0.000		-		0.000	0.000	0.745	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Resources - MT09 - Aegis															
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - CORONA	MIPR	NSWC Corona : CA	7.446	3.900	Oct 2016	4.000	Nov 2017	2.865	Dec 2018	-		2.865	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - NAVSEA	MIPR	NAVSEA : VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - NAWC/PM	MIPR	NAWC/PM : Pt. Mugu, CA	1.200	0.800	Oct 2016	0.830	Nov 2017	0.594	Dec 2018	-		0.594	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - NSWCDD	MIPR	NSWC Dahlgren : Dahlgren, VA	9.257	1.574	Nov 2016	3.500	Nov 2017	2.507	Dec 2018	-		2.507	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - PHD	MIPR	NSWC PHD : Pt. Hueneme, CA	9.050	5.215	Oct 2016	4.000	Nov 2017	2.865	Dec 2018	-		2.865	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - PMRF	MIPR	PMRF Barking Sands : Kauai, HI	1.130	1.245	Jan 2017	1.370	Nov 2017	0.981	Dec 2018	-		0.981	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - SSCPAC	MIPR	SPAWAR : San Diego, CA	3.965	2.157	Oct 2016	1.800	Nov 2017	1.289	Dec 2018	-		1.289	Continuing	Continuing	Continuing
Aegis BMD Test Resources - Aegis BMD Test Resources - MT09 - Various	MIPR	Various : HI, VA, CA, MA, MD	9.923	0.927	Apr 2017	1.400	Nov 2017	1.002	Dec 2018	-		1.002	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis -	C/CPAF	Northrop Grumman : AL, CO	3.087	1.136	Nov 2016	2.160	Nov 2017	2.121	Nov 2018	-		2.121	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Analysis - Engineering Support															
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - FFRDC/UARC	MIPR	Various : AL, CO, VA	10.523	1.991	Nov 2016	2.305	Nov 2017	2.347	Nov 2018	-		2.347	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : AL	1.781	1.915	Nov 2016	0.000		0.000		-		0.000	0.000	3.696	0.000
Engineering & Analysis - Engineering & Analysis - Engineering & Analysis - OGA	MIPR	AMRDEC : AL	9.431	6.063	Nov 2016	6.760	Nov 2017	6.411	Nov 2018	-		6.411	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis - NME	C/CPAF	Northrop Grumman-JRDC : CO, AL	0.000	0.000		0.500	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis NME Support	MIPR	SPAWAR : CA	0.000	0.622		1.300	Nov 2017	1.504	Nov 2018	-		1.504	Continuing	Continuing	Continuing
		Subtotal	164.084	127.014		132.091		92.533		-		92.533	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	164.084	127.014		132.091		92.533		-		92.533	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

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 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
IMTP v19.1 flight and ground test event details are at a higher classification.	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, **RDT&E Schedule Details:** PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MT09 / *AEGIS BMD Test*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IMTP v19.1 flight and ground test event details are at a higher classification.	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MD40 / *Program Wide Support*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MD40: *Program Wide Support*	2.425	3.998	5.692	3.223	-	3.223	3.565	4.961	4.406	4.403	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) reflects proportional changes as a result of budget changes in the Aegis BMD Test program element. Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests 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 2017	FY 2018	FY 2019
Title: Program Wide Support	3.998	5.692	3.223
Articles:	-	-	-
Description: N/A			
FY 2018 Plans: N/A			
FY 2019 Plans: N/A			
FY 2018 to FY 2019 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	3.998	5.692	3.223

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, VA	0.036	0.081	Jul 2017	0.150	Jul 2018	0.049	Jul 2019	-		0.049	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA, VA,	0.000	2.353	Nov 2016	2.784	Nov 2017	2.500		-		2.500	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (FFP)	C/FFP	Various : Multi: AL, CA, CO, VA	2.389	1.563	Jun 2017	2.725	Jun 2018	0.674	Apr 2019	-		0.674	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPR)	MIPR	Various : Multi: AL, CA, CO, VA	0.000	0.001	Dec 2016	0.033	Dec 2017	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	2.425	3.998		5.692		3.223		-		3.223	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.425	3.998		5.692		3.223		-		3.223	Continuing	Continuing	N/A

Remarks
N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

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 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
MD40 Program-Wide Support	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, **RDT&E Schedule Details:** PB 2019 Missile Defense Agency		**Date:** February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604878C / *Aegis BMD Test*	**Project (Number/Name)** MD40 / *Program Wide Support*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MD40 Program-Wide Support	1	2017	4	2023