

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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>
---	--

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	4,957.099	861.809	639.549	600.072	-	600.072	658.798	574.014	570.018	580.496	Continuing	Continuing
MD09: <i>Aegis BMD</i>	3,319.686	360.367	344.490	344.239	-	344.239	405.239	333.068	302.775	295.098	Continuing	Continuing
MM09: <i>Aegis BMD SM-3 Development</i>	545.580	303.832	124.708	86.633	-	86.633	66.010	48.265	70.835	85.089	Continuing	Continuing
MC09: <i>Cyber Operations</i>	37.404	8.544	3.750	4.431	-	4.431	4.682	4.882	4.842	4.938	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	678.923	158.251	136.506	142.980	-	142.980	160.210	165.334	169.313	172.442	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	375.506	30.815	30.095	21.789	-	21.789	22.657	22.465	22.253	22.929	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note
Decrease from FY 2022 to FY 2023 reflects the elimination of the Layered Homeland Defense program; A change in Ballistic Missile Defense (BMD) 6.x focus to continue major development functionality, testing and certification; Reduction of development activities for Standard Missile (SM)-3 (SM-3) Block IIA Enhanced Aegis Data Link and SM-3 Block IB Threat Upgrade (TU)/Technology Refresh (TR); Completion of Guidance Electronics Unit (GEU) Engineering Change Proposal (ECP) and Software Upgrade (SWUP) Build 8 efforts and transition of SWUP Build 8 into the production line.

A. Mission Description and Budget Item Justification
The Sea-Based Weapon Systems 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 Missile Defense System (MDS) upgrades. The Sea-Based Weapon Systems element of the MDS capitalizes upon and evolves from the existing United States Navy Aegis Weapons System (AWS) and SM infrastructures. Sea-Based Weapon Systems 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. Sea-Based Weapon Systems also provides a Long Range Surveillance and Track (LRS&T) capability to the MDS. Upgrades to both the Aegis BMD Weapon System and the SM-3 configuration enable Sea-Based Weapon Systems to provide effective, supportable defensive capability against longer range, threats and an enduring Aegis Ashore defensive capability.

This Program Element includes MDS threat discrimination improvements, which will enhance MDS effectiveness against the evolving adversary threat. The result will be a MDS architecture more capable of discriminating and destroying reentry vehicles with a higher degree of confidence, improving Warfighter shot doctrine, and more efficiently using interceptor inventory. MDS threat discrimination improvements are funded from the Enabling (0603890C), Midcourse (0603882C), BMD Sensors (0603884C), Command and Control, Battle Management, and Communications (C2BMC)(0603896C), and Aegis BMD (0603892C) PEs.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Missile Defense Agency	Date: April 2022
---	-------------------------

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>
---	--

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	877.336	732.512	0.000	-	0.000
Current President's Budget	861.809	639.549	600.072	-	600.072
Total Adjustments	-15.527	-92.963	600.072	-	600.072
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-98.963			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	6.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-15.527	0.000			
• Missile Defeat and Defense Enhancement	0.000	0.000	0.000	-	0.000
• Other Adjustment	0.000	0.000	600.072	-	600.072

Change Summary Explanation

Decrease of \$98.9 million in FY 2022 reflects the Congressional reduction of Layered Homeland Defense lack of validated requirement and acquisition strategy. Increase of \$6 million in FY 2022 provides Congressional add for Lightweight Telescope for Advanced Aegis Interceptor.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD09: <i>Aegis BMD</i>	3,319.686	360.367	344.490	344.239	-	344.239	405.239	333.068	302.775	295.098	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2022 to FY 2023 reflects the following:

- Reduction of the Layered Homeland Defense program.
- Shift in Ballistic Missile Defense (BMD) 6.x focus to continue major development functionality, testing and certification.
- Reduction of development activities for Standard Missile (SM)-3 Block IIA Enhanced Aegis Data Link.

A. Mission Description and Budget Item Justification

Sea-Based Weapon Systems continues development of a Sea-Based BMD capability in support of the Missile Defense Agency's (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.

Systems Engineering & Integration performs requirements development, engineering analysis, capability integration, and performance verification for Aegis BMD development and Missile Defense System (MDS) integration.

Aegis BMD Technology Design and Insertion enables cross-baseline specification management and capability assessments to ensure consistent application of technical standards, processes, and procedures across the Aegis BMD program. Aegis BMD specific efforts include: systems engineering and architecture (process and execution); modeling and simulation (M&S); Verification and Validation (V&V) test and evaluation support; ship integration; quality; safety and mission assurance M&S. V&V efforts in this accomplishment are performed at the Aegis BMD element level, which feed into the overall MDS system level.

Aegis Baseline (BL) 5.4.1 (BMD 4.2) is a joint effort with the U.S. Navy that refurbishes existing ship AN/SPY-1 radar arrays with the installation of antenna Low Noise Amplifiers (LNAs). It builds upon the recently certified Aegis BL 5.4.0 (BMD 4.1.2) program, which is a single Aegis Weapon System that merges BMD 4.1 and Aegis BL 5.3 computer programs within the current BMD 4.x weapon systems architecture. Additional capabilities provide Anti-Air Warfare (AAW) improvements, SM-6 Dual I Extended Range AAW/Anti-Surface Warfare (ASUW), interoperability improvements, and updated BMD threat adaptation data. BMD 4.2 will provide updates to the Flight I/II Destroyers (DDG's) with increased capability to maintain relevance through End of Service Life (50% Navy BMD Capability). Capabilities delivered include discrimination improvements, expanded threat set, increased stand-off range, expanded ship operating area, Sea Based Terminal INC II (via Ballistic Missile Defense Computing Suite, Computing Suite upgrade (BMDCS CS)), Space Domain Awareness, Diminishing Manufacturing Sources and Material Shortages (DMSMS) - Mission Planner Consoles, power supply etc.) as well as war fighter requested improvements. BMD 4.2 Capabilities developed under BL 5.4.1 lay the foundation for Aegis BL 9 improvements.

Aegis BL 9 (BMD 5.1.4 and BMD 5.1.5) software spirals align with U.S. Navy Aegis Baseline 9 Capability Packages 2022 and 2024, respectively. The software spirals provide enhanced detection, track, report, and defeat capabilities of additional medium, intermediate, and long range threats with increasingly complex engagement scenes and increased raid sizes. Through a series of unique Capability Insertion Packages, BMD 5.X capability spirals provides continuous software updates to

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

the original BMD 5.1.0 architecture to incorporate emerging MDS capabilities, War fighter improvements, SM-3 software updates, and improved Weapon System performance necessary to pace the threat. Includes support for AN/SPY-1 RADAR sensitivity, improvements, technology maturation, and prototyping that will demonstrate enhanced Missile Defense tracking performance against longer range and more sophisticated threats in challenging and complex environments.

Aegis BL 10 (BMD 6.0) incorporates the solid state Air and Missile Defense Radar (AMDR), now designated AN/SPY-6(v)1, for introduction on the first Flight III DDG. Aegis BL 10 (BMD 6.0) will provide deployed assets enhanced IAMD capability, while enabling MDS element utilization of SPY-6 data for remote engagement. Enhancements include significant improvements in IAMD planning, search, track, discrimination and force level (multi-asset) raid defense. Aegis BL 10 (BMD 6.0) will enable U.S. Navy ships to maintain greater stand-off range while increasing performance against complex threats.

This Program Element also provides the development of the Aegis Weapon System Software configuration for land based Defense of Guam, including the capabilities of the Sea Based Terminal Defense Increment 3 capability for defense against advanced ballistic and hypersonic threats and integration of the Land Based Radar configuration.

Aegis Layered Homeland Defense includes Aegis Weapon System and SM-3 Block IIA software modifications to existing systems to support a phased delivery of operational capability against expanded threat/mission space.

M&S Objective Simulation Framework (OSF) effort develops, maintains and deploys the framework hardware and software for use at element laboratories and Combatant Command (CCMD) locations to support Integrated Master Test Plan (IMTP) events, MDS capability delivery assessments, War fighter training, exercises, and wargames.

M&S MDS Simulations & Tools effort provides development and sustainment of digital products and the architecture framework, and delivery/maintenance of infrastructure for MDS performance assessments.

MDS System Assessment and VV&A includes activities to support MDS Operational Capability Baseline (OCB) delivery decisions and Technical Capability Declarations (TCDs), and anchor System M&S.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
<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 MDS integration, including Aegis BMD compliance with the MDS Specification and MDS Description Document.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Conduct system level performance analyses to support ongoing MDS Architecture and Systems Engineering efforts 	<p>18.308</p> <p align="center">-</p>	<p>19.721</p> <p align="center">-</p>	<p>19.818</p> <p align="center">-</p>

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
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 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Perform top-down system level engineering analysis, capability integration, and performance verification for Aegis BMD development and MDS integration, including Aegis BMD compliance with the MDS System Specification and MDS System Description Document - Identify architecture alternatives that improve the MDS System's performance and are complementary to and interoperable with NATO systems and theaters around the world - Define MDS technical content expectations and develop system requirements, to include integration of new capabilities - Develop functional performance, interface, and design suitability requirements in collaboration with Aegis BMD engineers to ensure correct flow-down and allocation of MDS System-level requirements to Aegis BMD - 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 MDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Theater/Regional BMD) - Conduct extensive analysis of data collected in MDS test events to evaluate MDS System operations and performance <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>				
Title: Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion		53.989	52.290	49.774
		Articles:	-	-
<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. Aegis BMD specific efforts include: systems engineering and architecture (process and execution), M&S, V&V, test and evaluation support, and ship integration. M&S V&V efforts in this accomplishment are performed at the Aegis BMD element level, which feed into the overall MDS system level.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Conduct U.S. Navy and Joint Link certifications required for Baseline certifications for operational deployment - Support Ground Test Campaign for MDS to achieve OCB declaration - Execute V&V activities and provide results to MDA System Verification Team and the Operational Test Agency (OTA) in support of System-level accreditation for BMDS events 				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Provide M&S Requirements Management and Development - Conduct further development of Aegis BMD System Architecture and overarching system concepts - Conduct MDS system level requirements allocation and Aegis BMD system requirements development, trace, validation and verification, and configuration management for coordination with all participating external agencies and organizations - Perform Command, Control, Computer, Communications and Intelligence (C4I) systems engineering to further develop Aegis BMD requirements, and to identify and resolve MDS interoperability issues - Define and coordinate development and implementation of C4I capabilities in U.S. Navy C4I programs of record to meet Aegis BMD requirements - Conduct Threat Engineering analysis and Requirements Assessment - Conduct Systems Engineering for Aegis BMD system-level M&S development and interfaces to the MDS architecture - Provide verified, validated, accredited models in support of U.S. Navy certification, MDA characterization of system-level performance, OTA assessment of operational capabilities, and representation of Aegis BMD capabilities in MDS test and exercise venues - Provide target engineering, test planning activities, and IMTP process/inputs for Aegis BMD - Conduct Performance Assessment and Verification (PAV) processes which assess the sufficiency of Objective Quality Evidence (OQE) to provide a traceable evidence to verify Element Specification (ES) requirements traced to MDS requirements - Provide oversight of all Aegis BMD analysis in support of systems assessment and verification supporting test and analysis requirements and test planning inputs to align with MDA and U.S. Navy test programs - Provide consolidated analysis and reporting for firing events <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Implement Interface Change Proposals (ICPs) into Command and Control Processor (C2P) - Perform Independent Verification and Validation (IV&V) of ICPs into C2P - Implementation of ICPs supporting Army Integrated Battle Command System (IBCS) and C2BMC integration - Execute Aegis BMD feasibility analysis in support of MDS future architecture strategies and War fighter needs - Transition feasible weapon system improvements into Baseline development efforts - Continue to transition mature Regional Sensor Advanced Discrimination solutions and M&S into Baseline development efforts - Execute analysis and concept exploration to meet the MDS discrimination needs and objectives - Execute a System Requirements Review (SRR) for BMD 6.0.1. BMD 6.0.1 is planned to update the BMD 6.0 to meet Ballistic Missile Defense System Support (BMDSS) requirements beyond Increment 8 - Complete verification analysis and Objective Quality Evidence for OCB report out of Aegis BMD 5.1.4 - Execute a System Requirements Review (SRR) for BMD 5.2.1. BMD 5.2.1 is an update to BMD 5.2 to meet MDS System Specification requirements through Increment 9. 			
---	--	--	--

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Execute threat analysis to define Aegis BMD Element Specifications (ES) requirements to support MDS System Specification Defended Area (DA) and Integrated Engagement Plan (IEP) requirements. Task addresses existing MDS System Specification performance widows. - Execute threat analysis to support MDS Increment 9 and 10 advanced threats beyond current Aegis BMD threat space. - Expand automated test and verification capabilities, to include automated performance verification and SM-3 test and verification - Complete Final VV&A, test and Accreditation for EDISS Increment 2 - Complete element design, development, requirements and system functional analysis, and system integration, test and VV&A for EDISS Increment 3 - Begin Requirements, element design, development, integration and System functional analysis for EDISS Increment 4 - Continue to Integrate and test GTISS Phase 2 M&S - Deploy Phase 2 of GTISS improvements to the MDA Ground Test Architecture to address MDS OTA identified issues - Provide engineering and software development of GTISS Phase 3, including in-progress technical reviews - Conduct design and engineering activities for an advanced telescope assembly with an evaluation of the capabilities for an SM-3 Blk IIA application <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue providing residual capability analysis of deployed Aegis Ballistic Missile Defense Systems and SM-3 versus threats not covered in design requirements, specifically to improve response time to Combatant Command (COCOM) and Fleet requests for analysis - Integrate and improve threat data development tools with Prime contractor M&S - Maintain and expand dedicated analysis work force to support large-scale global analysis case matrix execution - Expand infrastructure to support large data library of performance analysis for read access upon request by COCOM and the Fleet while maximizing use of tactical code - Develop and deploy Artificial Intelligence/Machine Learning (AI/ML) tools in a swarm learning environment to manage M&S input parameters and post-processing of large data sets - Continue Combat System Test Bed (CSTB) IAMD capability integration for M&S planning and VV&A of SM-3 Block IIA, SM-3 Block IB and SM-6 missile models using Aegis BMD 5.x performance assessment as risk reduction for Aegis BMD 6.x efforts - Fabricate and test the advanced telescope assembly and compare with SM-3 baseline program capabilities to inform the program on capability roadmap improvements against advanced threats. <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
---	--	--	--

Title: Aegis BMD 4.x Development			
Articles:	84.937	56.713	29.699
	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
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 2021	FY 2022	FY 2023
<p>Description: Aegis Baseline 5.4.0 (BMD 4.1.2) incorporates the BMD 5.0 Capability Upgrade (CU) of European Phased Adaptive Approach (EPAA) Phase II ENDO/EXO requirements including EPAA Phase II Exo-atmospheric threats, integration of the SM-3 Block IB TU, and reintroduction of other Aegis capabilities integrated with the SM-6 Dual I (Endo only). It provides Aegis Modernization capabilities comparable to the BMD 4.0 ships with legacy computer processing architecture. Aegis Baseline 5.4.1 (BMD 4.2) baseline development takes advantage of refurbished and upgraded AN/SPY-1 radar arrays with LNAs by increasing BMD capabilities with improved radar sensitivity, discrimination, threat upgrades, and more efficient radar resource utilization.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Update Critical Item Development (CIDS), Interface Description Specifications (IDS) and all supporting engineering documents and plans - Conduct design studies and concepts supporting development and integration - Conduct Aegis BMD performance analysis supporting In-Process Reviews (IPR) - Participate in program leadership and technical forums including Program Management Team, System Engineering Team, and Cross Product Teams for Integration and Test, M&S, Test, Evaluation & Certification, and Fleet Integration and Design - Provide Weapon System updates to include MIL-SPEC UYK-43, Commercial Off-The-Shelf (COTS) BMD Signal Processor, and COTS adjunct processor updates - MDA/Navy co-funded effort to provide BMD capability on Flight I/II DDGs <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: For Aegis Baseline 5.4.1 (BMD 4.2):</p> <ul style="list-style-type: none"> - Complete computer program integration efforts, capability development and coding; unit test and element computer program integration and test; and Engineering Test and Evaluation (ET&E), and Multi-Element Integration and Test (MEIT) with regression testing to support: - In-Process Review (IPR) #5 - AEGIS BL 5.4.1 Engineering Evaluation (EE) - AEGIS BL 5.4.1 (BMD 4.2) Engineering Assessment (EA) - Continue increased threat sensitivity runs in MEDUSA to account for new additional threats - Complete the incorporation of new baseline requirements as a result of an FY 2020 SRR - Conduct prototype install on first ship to finalize Ship Change Notice development in support of future ship installs in preparation of At-Sea testing and tracking event - Conduct testing on first ship to test LNAs in a shipboard environment <p>FY 2023 Plans: For Aegis Baseline 5.4.1 (BMD 4.2) with LNA:</p>			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
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 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Begin system Integration Testing at Surface Combat System Center, Wallops Island - Continue prototype Install on first ship to finalize Ship Change Notice development in support of future ship installs in preparation of At-Sea testing and tracking event - Develop final baseline updates , Engineering Test and Evaluation (ET&E), and Multi-Element Integration and Test (MEIT) with regression testing to support: <ul style="list-style-type: none"> - AEGIS BL 5.4.1 Engineering Evaluation (EE) - AEGIS BL 5.4.1 (BMD 4.2) Engineering Assessment (EA) - Continue increased threat sensitivity runs in MEDUSA to account for new additional threats - Complete the incorporation of new baseline requirements as a result of an FY 2020 SRR <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY2022 to FY2023 reflects transition from baseline development efforts to test ship installation and At-Sea testing in support of baseline certification.</p> <p>Title: Aegis BMD 5.x Development</p> <p align="right">Articles:</p> <p>Description: In alignment with U.S. Navy Aegis Baseline 9 Capability Packages (CP)(2022 and 2024), Aegis BMD 5.X will develop a series of unique Capability Insertion Packages (CIP) and AN/SPY-1 RADAR sensitivity technology maturation and prototyping that expand detection, track, report, and defeat capabilities of emerging threat systems with increasingly complex engagement scenes and raid sizes. Aegis BMD capability packages are focused towards Aegis Baseline 9 DDGs and Aegis Ashore Missile Defense Systems (AAMDS). Annual capability upgrades are necessary to pace the evolving threat, improve system reliability, and incorporate technological growth. Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: Deliver Aegis BMD 5.1.4 (Aligned with Navy Aegis Baseline 9 Capability Package 2022): CIP Includes:</p> <ul style="list-style-type: none"> - Expanded Aegis BMD Threat Space: Provides integration of additional threats to the Aegis weapon system (aligns with SM-3 Block IIA Build 8.0/8.1 software updates and threat set) - Hypersonic TDL Upgrades: Incorporates two (2) TDL Interface Change Proposals (ICP) in support of BMDS Hypersonic track and reporting requirements - Electronic Attack/Electronic Protection (EA/EP) Increment 1: Provides initial weapon system improvements for operations in complex EA environments - MPAN Increment 2: Builds upon Increment 1 (BMD 5.1.3) by providing parallel processing and multi-cycle reprogramming, which decreases software update cycle times for the SM3 Block IIA missile 	50.024	46.165	78.247
	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
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 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Aegis Ashore TI-12 Hybrid (TI-12H) Integration: Provides weapon system updates and integration of TI-12H architecture in Aegis Ashore Missile Defense Systems - Doppler Data Collection System: Provides capability to collect Doppler data on RADAR tracks - 5th Fleet Urgent Operational Need (UON): Incorporate additional threat systems in support of 5th Fleet UON <p>Continue Aegis BMD 5.1.5 (Aligned with Navy Aegis Baseline 9 2023): CIP Includes:</p> <ul style="list-style-type: none"> - Expanded Hypersonic Track and Report (Increment 2): Continues development and delivery of Hypersonic tracking and reporting with MDS performance requirements - Expanded Aegis BMD Threat Space: Provides integration of additional threats to the Aegis weapon system (aligns with SM-3 Block IIA Build 8.2/8.3 software updates and threat set) - Aegis BMD Warfighter Improvements: Incorporates/Integrates Warfighter feedback through enhancements to existing functionality - Enhanced Aegis Data Link: Provides interface update between SPY-1 RADAR and SM3 missile - Aegis Remote Engagement (ARE): Integrates interface updates with the MDS to use additional remote data sources for Aegis BMD engagements <p>Continue Aegis BMD 5.1.6 (Aligned with Navy Aegis Baseline 9 2024): CIP Includes:</p> <ul style="list-style-type: none"> - Full Active Sensor Bias (Increment 2): Provides updates to improve radar tracking performance and report tracking bias to the MDS - Increased Boost Phase Communications (9-State Plus): Provides additional position, velocity, and acceleration track covariance over the TDL for boosting track in support of the GMD mission - Expanded Aegis BMD Threat Space: Provides integration of additional threats to the Aegis weapon system (aligns with SM-3 Block IIA Build 9.0 software updates and threat set) - Aegis BMD Warfighter Improvements: Incorporates/Integrates Warfighter feedback through enhancements to existing functionality <p>FY 2023 Plans: Continues Aegis BMD 5.1.5 (Aligned with Navy Aegis Baseline 9 2024): CIP Includes:</p> <ul style="list-style-type: none"> - Expanded Hypersonic Track and Report (Increment 2): Continues development and delivery of Hypersonic tracking and reporting with MDS performance requirements - Expanded Aegis BMD Threat Space: Provides integration of additional threats to the Aegis weapon system (aligns with SM-3 Block IIA Build 8.2/8.3 software updates and threat set) 			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
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 2021	FY 2022	FY 2023
<p>- Aegis BMD Warfighter Improvements: Incorporates/Integrates Warfighter feedback through enhancements to existing functionality</p> <p>AN/SPY-1 RADAR sensitivity improvement technology maturation and prototyping of Digital Low Noise Amplifier (dLNA):</p> <p>- Demonstrate improved tracking performance, resource utilization, and performance against longer range and more sophisticated threats through implementation of digital receive technologies</p> <p>Support includes:</p> <p>- Maturation of critical RADAR technologies necessary to digitize receive chain of in-service AN/SPY-1 RADAR</p> <p>- Procure prototype hardware and assemble prototype array</p> <p>- Develop RADAR calibration techniques</p> <p>- Assess System performance against existing and emerging threat systems</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Increase from FY 2022 to FY 2023 provides for technology maturation and prototyping support for AN/SPY-1 RADAR sensitivity improvement.</p>				
Title: Aegis BMD 6.x Development		80.858	84.443	59.954
		Articles:	-	-
<p>Description: The U.S. Navy is developing the Advance Capability Build (ACB) 20 Combat System (CS) and the AMDR, now designated SPY-6(V)1, for introduction on the first DDG Flight III. Aegis BMD 6.0 and Aegis 6.0.1 will integrate Aegis BMD 5.1 capability with the ACB 20 Combat System, to include new SPY-6 requirements. Aegis BMD 6.0 and 6.0.1 exploit SPY-6 radar improvement to enhance Engagement and Search and Track capabilities to include discrimination, raid defense and expanded threat space. This will enable MDS element utilization of AN/SPY-6(V)1 data for remote engagements and will supplement deployed assets with simultaneous multi-mission capabilities (e.g. IAMD). AMDR will support a force-level (multi-asset) approach to raid defense and will enable U.S. Navy ships to have a greater stand-off range from threat environments.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - CIDS, IDS and all supporting engineering documents and plans - Conduct design studies and concepts supporting development and integration - Conduct Aegis BMD performance analysis supporting In-Process Reviews(IPR) - Participate in program leadership and technical forums including Program Management Team, System Engineering Team, and Cross Product Teams for Integration and Test, M&S, Test, Evaluation & Certification, and Fleet Integration and Design - Develop computer program for Aegis BMD 6.0 supporting Software Increment Reviews (SWIR) - MDA/Navy co-funded effort to provide BMD capability on Flight III DDGs - Expanded BMD Tracking and reporting updates <p>Specific and/or unique accomplishments to each FY are as follows:</p>				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
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 2021	FY 2022	FY 2023
<p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Continue Aegis BMD 6.0 concurrent engineering across Mission Planner (Polygon Defended Area/Launch Area/Weapons Doctrine & Real-Time Plan Response), IAMD/BMD Search & Track, Engagement Scheduling, Engagement Capacity, Raid and Dual Tier/Remote Engagement areas - Continue SPY-6 integration efforts, capability development, and performance analysis with focus shifted to on-ship/at-sea - Continue Aegis BMD 6.0 design, code, test and performance analysis across the BMD Mission area with focus shifted to on-ship/at-sea - Conduct EA against BMD 6.0 capabilities - Perform on-ship Aegis Light Off (ALO) and begin Sea Trials <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Continue Aegis BMD 6.0 software development (Aligned with AEGIS baseline 10.0) <p>Capabilities include:</p> <ul style="list-style-type: none"> - Improved Mission Planner - Provides an Integrated Air and Missile Defense mission planner with increased accuracy, and engagement control functionality - Increased Organic Engagement Capacity - Provides increased ship operating areas by utilizing the increased radar performance of AN/SPY-6(V)1 - Kill Assessment Improvements - Provides improved analysis of intercept to better determine whether the intercept was successful - Increased IAMD Raid Performance - Exploits functionality of AN/SPY-6(V)1 to improve raid performance - BMD Coordinator Submode - Warfighter improvement consolidating all BMD related display functionality under a single submode - Increased IAMD performance with Sea Based Terminal Increment 2 Capability Upgrade - Continue AN/SPY-6(V)1 integration efforts, capability development, and performance analysis with focus shifted to on-ship/at-sea - Continue Aegis BMD 6.0 design, code, test and performance analysis across the BMD Mission area with focus shifted to on-ship/at-sea - Commence baseline certification preparation and mission readiness assessment - Support ship sailaway from building yard, arrival at homeport, and preparation for the start of test and evaluation activities. <ul style="list-style-type: none"> - Commence Aegis BMD 6.0.1 software development (Aligned with AEGIS baseline 10.1) <p>Capabilities include:</p> <ul style="list-style-type: none"> - BMD Engagement Control - Limit the number of simultaneous BMD engagements and weapons expended - Mobile Platform Planning - Off-ship IAMD plan development and on-ship mission plan import/export 			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<p>- Raid Evaluator - Capability to evaluate against raid and display predicted raid performance for a mission plan solution</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023 reflects a shift in BMD 6.x focus to continue major development functionality, testing and certification.</p>			
---	--	--	--

<p>Title: Aegis Layered Homeland Defense Development</p>	12.022	0.000	0.000
---	--------	-------	-------

<p align="right">Articles:</p> <p>Description: AWS and SM-3 Block IIA software modifications to existing systems to support a phased delivery of operational capability. The planned phased updates will build on the proven residual capability demonstrated in FTM-44 in CY 2020. The second phase of planned capability will increase system performance against moderate threats for Aegis BMD to provide an initial under layer capability to GMD in support of Homeland Defense. The third phase of planned capability will expanded threat/mission space and increase system performance against more complex threats to provide a robust under layer capability to GMD in support of Homeland Defense. In addition to increasing the performance capability of Aegis BMD, assess deployment options to include both transportable and persistent approaches.</p>	-	-	-
--	---	---	---

FY 2022 Plans:

- Refine system level requirements and facilitate system development to expanded threat/mission space and increase system performance against moderate threats
- Conduct System Requirements Review
- Execute design and implementation of Weapon System and Standard Missile (SM-3 Block IIA) software upgrades in support of the phased delivery of operational capability against expanded threat/mission space and increase system performance against moderate threats to provide an initial under layer capability to GMD in support of Homeland Defense
- Refine concepts for alternate SM-3 deployment methods to achieve both transportable and persistent deployment in support of Global Regional Defense Operations and Layered Homeland Defense, excluding any activities to increase system performance against moderate threats
- Refine transportable deployment concept and execute design modifications to the following components: C2 component with Virtualized Aegis Weapon System (VAWS), Launcher component capable of firing SM-3 Block IIA and an Interceptor Communications component with antenna for in-flight uplink/downlink between VAWS and SM-3 Block IIA
- Execute integration activities (e.g., communication antenna systems) required to meet planned demonstration objectives and resolve integration challenges of components
- Continue to refine test plan for demonstration of transportable deployment concept
- Conduct analysis addressing MDS Layered Homeland Defense Mid-term (FY2025-FY2029) Capability Evolution goals to include integrated battle management concepts and feasibility analysis for Aegis BMD system level performance

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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 2021	FY 2022	FY 2023
---	---------	---------	---------

<p>- Conduct evaluation of enabling software and hardware technologies for both the AWS and the SM-3 in support of a future operational capability against expanded threat/mission space and increase system performance against more complex threats</p> <p>FY 2023 Plans: No funding is requested for Layered Homeland Defense in FY 2023 and the out-years.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY 2022 to FY 2023 reflects reduction of the Layered Homeland Defense program.</p>			
--	--	--	--

<p>Title: Modeling & Simulation Objective Simulation Framework</p> <p>Description: This effort develops, maintains and deploys the framework hardware and software for use at element laboratories and CCMD locations to support IMTP events, MDS capability delivery assessments, Warfighter training, exercises, and Wargames.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Develop and implement 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 M&S Enterprise needs - Sustain and enhance framework products to maintain capabilities to support stakeholders - Develop plans, procedures and documentation for scheduled events including Wargames and Combatant Command Exercises and the Distributed, Focused and Integrated hardware in the loop (HWIL) Events as presented in the IMTP. Provide event architecture integration and checkout of Wargames for these same IMTP scheduled events - Provide the ground test architecture integration expertise to meet the testing requirements of the IMTP. Support delivery of integrated architectures for test across all test venues using the MDS test framework to integrate distributed architectures in support of MDS - 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 distributed sites. Perform regular maintenance and critical repairs of hardware and software. - Control and maintain the M&S Integration and Development Laboratories for Element M&S. Maintain venue for stakeholders to conduct early integration efforts and identification of issues prior to event architecture integration to support system development. - Maintain System-level M&S framework <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans:</p>	<p>Articles:</p> <p>31.465</p> <p>-</p>	<p>33.366</p> <p>-</p>	<p>34.326</p> <p>-</p>
--	--	------------------------	------------------------

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
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 2021	FY 2022	FY 2023
- SEE ABOVE.				
FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: M&S BMDS Simulations & Tools		4.343	4.455	4.383
		Articles: -	-	-
Description: This effort includes: development and sustainment of digital products and the architecture framework, and delivery/maintenance of infrastructure for MDS performance assessments. Recurring Accomplishments: - Integrate, test, and verify the M&S enterprise supporting MDS 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 MDS 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 - 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 Specific and/or unique accomplishments to each FY are as follows: FY 2022 Plans: - SEE ABOVE. FY 2023 Plans: - SEE ABOVE. FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: BMDS Verification, Validation & Assessment (VV&A)		20.596	19.912	20.781
		Articles: -	-	-
Description: This activity includes MDS System Assessment and VV&A activities to support MDS OCB delivery decisions, and anchor System modeling and simulation. Recurring Accomplishments: - Verify MDS performance, and produce MDS verification status reports				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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 2021	FY 2022	FY 2023
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Conduct extensive analysis of data collected in MDS ground and flight test events, instrumental to understanding MDS System operations and performance and anchoring models and simulations - Identify mitigation approaches for MDS performance issues uncovered during system level analysis and assessment - Maintain M&S VV&A database, and verification data for MDS 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 V&V in support of MDA MDS System level accreditation process in support of MDS Ground Test and performance assessment events - Conduct specified MDS 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 MDS accreditation. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans: - SEE ABOVE.</p> <p>FY 2023 Plans: - SEE ABOVE.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>			
---	--	--	--

<p>Title: RF Link Improvements</p> <p>Description: Design, develop, and deliver Radio Frequency (RF) Link Security Improvements that implement advance communications between Aegis BMD Weapon System and SM-3 Block IB and IIA missile variants. Product development and implementation will enable missile hardware enhancements in order to achieve the full requisite Missile RF Link Security Improvements. Priority will be on the BL 9 and SM-3 BLK IIA followed by BL 9/10 and SM-3 BLK IB.</p> <p>FY 2022 Plans: All efforts for this accomplishment have transitioned from Budget Project, MC09 Cyber Operations</p> <ul style="list-style-type: none"> - Begin software development and hardware prototype efforts to include initial integration testing - Conduct analysis and design trades to define encryption scheme for the weapon system, including backwards compatibility with missiles without RF Link Security upgrades 	<p>Articles:</p> <p>3.825</p> <p>-</p>	<p>27.425</p> <p>-</p>	<p>2.257</p> <p>-</p>
---	---	------------------------	-----------------------

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
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 2021	FY 2022	FY 2023
<p>- Update Aegis BMD Weapon System requirements and interface specifications to incorporate changes between the weapon system and missile message link</p> <p>FY 2023 Plans:</p> <p>- Complete final integration and test of RF Link updates between the Aegis BL 9 Weapon System (BMD 5.1.5) and the SM-3 Block IIA Missile</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Decrease from FY 2022 to FY 2023 reflects the completion of development activities for SM-3 Block IIA Enhanced Aegis Data Link.</p>				
<p>Title: Guam Defense Aegis Fire Control Software Upgrades</p> <p align="right">Articles:</p> <p>Description: This accomplishment provides the development of the Aegis Weapon System Software configuration for land based Defense of Guam (DoG) including the capabilities of the Sea Based Terminal Defense Increment 3 capability for defense against advanced ballistic and hypersonic threats and integration of the Land Based SPY-7 Radar configuration.</p> <p>FY 2022 Plans:</p> <p>N/A</p> <p>FY 2023 Plans:</p> <p>-Define DoG Architecture and develop requirements to support a distributed Aegis network (remote radars, remote launchers)</p> <p>-Conduct platform engineering studies and hardware/software prototyping required for a relocatable array</p> <p>-Develop new weapon system specifications for relocatable array and distributed weapon system/launchers</p> <p>-Conduct element level, as well as Multi-Element level integration testing</p> <p>-Develop Aegis compliance threat space and conduct early performance analysis to optimize Aegis system performance</p> <p>-Design and code new electronic protection techniques that take advantage of solid state radar technologies</p> <p>-Develop Aegis system requirements compliant with MDS requirements and conduct a system requirements review</p> <p>-Begin design and development of new radar adaptation data, fire control calculation changes to support remote launchers, encrypted communication methods between Aegis Combat System components, and modular Guam Defense System Operations Center components.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Increase from FY 2022 to FY 2023 initiates the Aegis-specific Department of Defense architecture solution for DoG.</p>		0.000 -	0.000 -	45.000 -
Accomplishments/Planned Programs Subtotals		360.367	344.490	344.239

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

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

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: MD09: Aegis BMD O&M	79.913	68.293	69.071	-	69.071	70.303	75.240	87.513	91.726	Continuing	Continuing
• 0208866C: MD09: Aegis BMD Procurement	353.896	334.621	402.235	-	402.235	378.685	362.834	496.857	506.794	Continuing	Continuing
• 0208866C: MD73: Aegis Ashore Procurement	34.629	25.866	30.056	-	30.056	2.390	0.976	0.000	0.000	0.000	93.917
• 0208866C: MD90: Aegis Hardware and Software Procurement	104.241	81.791	78.181	-	78.181	115.776	116.026	61.748	32.695	Continuing	Continuing
• 0604878C: Aegis BMD Test	71.481	111.206	182.776	-	182.776	173.492	159.125	203.851	187.494	Continuing	Continuing
• 0604880C: Land Based SM-3 (LBSM3)	52.804	43.158	27.678	-	27.678	26.896	26.021	26.842	27.385	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Sea-Based Weapon Systems 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 Sea-Based Weapon Systems 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 additional technical standards and engineering oversight provided by Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs).

The Layered Homeland Defense acquisition strategy leverages existing Sea-Based Weapon System program awarded sole source contracts with Raytheon and Lockheed Martin to continue development of the SM-3 and the Aegis BMD Weapon Systems. Acquisition requirements for the transportable deployment option will also use existing contracts within Sea-Based Weapon Systems or within the partner element on the project. Additional information can be provided at the appropriate classification level.

The acquisition strategy for Guam Defense consists of contract actions to industry, and agreements with DoD organizations and FFRDCs to develop, demonstrate, and field a MDS on Guam.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Systems Engineering & Integration - Systems Engineering - Architecture TEAMS	C/CPFF	Various : Various	0.000	5.242	Nov 2020	0.000		3.307	Nov 2022	-		3.307	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering	Allot	MDA Various : VA, AL	68.983	1.603	Nov 2020	0.936	Nov 2021	0.880	Nov 2022	-		0.880	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - CSS	C/CPFF	TEAMS : VA	26.864	0.000		5.485	Nov 2021	2.359	Nov 2022	-		2.359	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - Industry	C/CPAF	Boeing : VA	88.877	11.463	Nov 2020	13.300	Nov 2021	13.272	Nov 2022	-		13.272	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - ABY Telescope	SS/TBD	Various : TBD	0.000	0.000		6.000	Jun 2022	0.000		-		0.000	0.000	6.000	0.000
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD APL	SS/CPAF	JHU/APL : Columbia, MD	47.110	6.933	Nov 2020	6.660	Nov 2021	9.764	Nov 2022	-		9.764	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD LM	C/CPFF	Lockheed Martin : Moorestown, NJ	38.829	7.641	Nov 2020	7.730	Nov 2021	12.851	Nov 2022	-		12.851	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD MIT	MIPR	Hanscom AFB - MIT/LL : Lexington, MA	25.660	3.351	Nov 2020	3.651	Nov 2021	4.830	Nov 2022	-		4.830	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD MITRE	MIPR	CECOM - MITRE : Dahlgren, VA	4.061	0.562	Nov 2020	0.474	Nov 2021	0.481	Nov 2022	-		0.481	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	44.180	11.541	Nov 2020	8.354	Nov 2021	10.574	Nov 2022	-		10.574	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - MD09 - TD Raytheon	SS/IDIQ	RAYTHEON : AZ	0.000	1.683	Nov 2020	0.000		0.000		-		0.000	0.000	1.683	0.000
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - NIWC Pacific	MIPR	NIWC PAC : San Diego, CA	15.621	6.609	Nov 2020	9.186	Nov 2021	8.984	Nov 2022	-		8.984	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Technology Design and Insertion - Advanced Concepts	MIPR	Various : Various	0.000	2.402	Nov 2020	0.000		0.000		-		0.000	0.000	2.402	0.000
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Technology Design and Insertion - Discrimination	MIPR	Various - MDA : AL,VA	17.640	0.000		0.000		0.000		-		0.000	0.000	17.640	0.000
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Technology Design and Insertion - M&S improvements	MIPR	Various - MDA : AL, VA	8.913	11.275	Nov 2020	10.235	Nov 2021	2.290	Nov 2022	-		2.290	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Technology Design and Insertion - Various - MDA	MIPR	Various - MDA : AL,VA,CA	32.577	1.992	Nov 2020	0.000		0.000		-		0.000	0.000	34.569	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 BMD 4.x Development - BMD 4.0 Dev -MD09- Aegis Techrep	MIPR	AEGIS Techrep : Moorestown, NJ	4.447	1.435	Nov 2020	2.947	Nov 2021	1.543	Nov 2022	-		1.543	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - BMD 4.0 Dev. - MD09 - Dahlgren	MIPR	NSWC/DD : DAHLGREN, VA	160.786	9.508	Nov 2020	9.404	Nov 2021	4.925	Nov 2022	-		4.925	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - BMD 4.0 Dev. - MD09 - Lockheed Martin	SS/CPIF	LOCKHEED MARTIN : MOORESTOWN, NJ	890.313	70.937	Nov 2020	41.856	Nov 2021	21.919	Nov 2022	-		21.919	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - BMD 4.0 Dev. -MD09- BMD 4.0 Dev-	Various	Various : Various	46.730	1.838	Nov 2020	2.506	Nov 2021	1.312	Nov 2022	-		1.312	Continuing	Continuing	Continuing
Aegis BMD 4.x Development - BMD 4.0 Dev.-MD09-D	Allot	MDA : VA	31.834	1.219	Nov 2020	0.000		0.000		-		0.000	0.000	33.053	0.000
Aegis BMD 5.x Development - MD09 - 5.x	SS/CPAF	LOCKHEED MARTIN : MOORESTOWN, NJ	733.051	39.775	Nov 2020	33.595	Nov 2021	72.424	Nov 2022	-		72.424	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - 5.x APL	SS/CPFF	JHU/APL/MD : COLUMBIA, MD	54.663	1.791	Nov 2020	2.489	Nov 2021	0.685	Nov 2022	-		0.685	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - 5.x DD	MIPR	NSWC/DD : DAHLGREN, VA	78.586	4.515	Nov 2020	8.213	Nov 2021	3.768	Nov 2022	-		3.768	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - 5.x PHD	MIPR	NSWC/PHD : PT HUENEME, CA	12.392	1.296	Nov 2020	0.823	Nov 2021	0.514	Nov 2022	-		0.514	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - AW	MIPR	Aegis Tech Rep : Moorestown, NJ	6.285	2.647	Nov 2020	1.045	Nov 2021	0.856	Nov 2022	-		0.856	Continuing	Continuing	Continuing
Aegis BMD 5.x Development - MD09 - Various	MIPR	Various : MA, MD, VA, NJ	209.059	0.000		0.000		0.000		-		0.000	0.000	209.059	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 BMD 6.x Development - D - Strategic Investment	MIPR	Various : Various	0.000	0.000		4.786	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - JHU/APL	SS/CPFF	JHU/APL : MD	19.959	6.113	Nov 2020	7.006	Nov 2021	4.974	Nov 2022	-		4.974	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - Lockheed Martin	C/CPFF	Lockheed Martin : NJ	123.641	56.663	Nov 2020	53.270	Nov 2021	41.491	Nov 2022	-		41.491	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - MD09 - DD	MIPR	NSWC/DD : Dahlgren, VA	20.091	8.900	Nov 2020	9.634	Nov 2021	6.840	Nov 2022	-		6.840	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - Raytheon Integrated Defense Systems	MIPR	DOD - USN - NAVAL SEA SYSTEMS COMMAND (NAVSEA) : VA	0.000	0.000		4.579	Nov 2021	3.251	Nov 2022	-		3.251	Continuing	Continuing	Continuing
Aegis BMD 6.x Development - Various	MIPR	Various : MA, MD, VA, NJ, CA	36.391	9.182	Nov 2020	5.168	Nov 2021	3.398	Nov 2022	-		3.398	Continuing	Continuing	Continuing
Aegis Layered Homeland Defense Development - Aegis Engineering - APL	SS/CPFF	JHU/APL : MD	1.369	1.018	Nov 2020	0.000		0.000		-		0.000	0.000	2.387	0.000
Aegis Layered Homeland Defense Development - Aegis Engineering - DD	MIPR	NSWC DD : Dahlgren VA	1.712	0.667	Nov 2020	0.000		0.000		-		0.000	0.000	2.379	0.000
Aegis Layered Homeland Defense Development - Aegis Engineering - LM	SS/CPFF	Lockheed Martin : Moorestown NJ	0.327	5.595	Nov 2020	0.000		0.000		-		0.000	0.000	5.922	0.000
Aegis Layered Homeland Defense Development - Aegis Engineering - MIT/LL	MIPR	MIT/LL : Lexington MA	1.183	2.058	Nov 2020	0.000		0.000		-		0.000	0.000	3.241	0.000
Aegis Layered Homeland Defense Development - Aegis Engineering - RMS	SS/CPIF	Raytheon : AZ	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Aegis Layered Homeland Defense Development -	MIPR	Aegis Techrep : Moorestown NJ	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 Weapon System - MD09 - Aegis Techrep															
Aegis Layered Homeland Defense Development - Aegis Weapon System - MD09 - DD	MIPR	NSWC DD : Dahlgren VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Aegis Layered Homeland Defense Development - Aegis Weapon System - MD09 - LM	SS/CPFF	Lockheed Martin : Moorestown NJ	2.128	0.000		0.000		0.000		-		0.000	0.000	2.128	0.000
Aegis Layered Homeland Defense Development - Standard Missile - 3 (SM-3) Block IIA Development - MD09 - Raytheon	SS/CPIF	Raytheon : AZ	2.770	2.684	Nov 2020	0.000		0.000		-		0.000	0.000	5.454	0.000
Aegis Layered Homeland Defense Development - Strategic Investment	MIPR	Various : Various	0.106	0.000		0.000		0.000		-		0.000	0.000	0.106	0.000
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering	Various	MDA : AL, VA	18.734	4.957	Nov 2020	4.224	Nov 2021	3.888	Nov 2022	-		3.888	Continuing	Continuing	Continuing
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - CSS Support	C/CPFF	TEAMS : AL, CO	31.884	6.084	Nov 2020	5.547	Nov 2021	5.319	Nov 2022	-		5.319	Continuing	Continuing	Continuing
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Engineering Support	C/CPAF	Northrop Grumman : CO	41.660	0.000		0.000		0.546	Nov 2022	-		0.546	0.000	42.206	0.000
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Integration	MIPR	CCDC : AL	30.023	3.464	Nov 2020	3.398	Nov 2021	3.385	Nov 2022	-		3.385	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 Objective Simulation Framework - M&S OSF Engineering - Prime	C/CPFF	Teledyne Brown Engineering / TBD : AL, CO	173.883	0.000		0.000		0.000		-		0.000	0.000	173.883	0.000
Modeling & Simulation Objective Simulation Framework - M&S OSF Engineering - Prime 2	C/CPFF	Lockheed Martin : AL	0.000	16.960	Nov 2020	20.197	Nov 2021	21.188	Nov 2022	-		21.188	Continuing	Continuing	Continuing
M&S BMDS Simulations & Tools - Sims & Tools	C/CPFF	Teledyne Brown Engineering : AL, CO	3.558	0.000		0.000		0.000		-		0.000	0.000	3.558	0.000
M&S BMDS Simulations & Tools - Sims & Tools - Industry	C/CPAF	Northrop Grumman : CO	40.308	0.000		0.000		0.000		-		0.000	0.000	40.308	0.000
M&S BMDS Simulations & Tools - Sims & Tools - Industry (2)	C/CPAF	SWDC : CO	3.700	3.857	Nov 2020	3.355	Nov 2021	4.383	Nov 2022	-		4.383	Continuing	Continuing	Continuing
M&S BMDS Simulations & Tools - Sims & Tools - Various	Various	Various : AL, CO	1.419	0.486	Nov 2020	1.100	Nov 2021	0.000		-		0.000	0.000	3.005	0.000
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment	Various	MDA Various : AL, VA	7.395	0.000		0.000		0.000		-		0.000	0.000	7.395	0.000
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - CSS Support	C/CPFF	TEAMS : AL	16.864	2.362	Nov 2020	2.462	Nov 2021	2.512	Nov 2022	-		2.512	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - Industry	C/CPAF	Boeing : AL	34.157	8.161	Nov 2020	7.370	Nov 2021	7.591	Nov 2022	-		7.591	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - Labs	MIPR	MITRE : VA	11.853	1.255	Nov 2020	0.847	Nov 2021	1.282	Nov 2022	-		1.282	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
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 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - OGA	MIPR	CCDC : AL	41.132	6.891	Nov 2020	7.162	Nov 2021	7.325	Nov 2022	-		7.325	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) - Verification & Assessment - UARC2	MIPR	JHU/APL : AL, VA	5.978	1.927	Nov 2020	2.071	Nov 2021	2.071	Nov 2022	-		2.071	Continuing	Continuing	Continuing
RF Link Improvements - BL 9/ BL 10 Missile RF Link Improvements	MIPR	Various : TBD	0.000	0.000		1.357	Nov 2021	2.257	Nov 2022	-		2.257	Continuing	Continuing	Continuing
RF Link Improvements - RF Link Improvements - Dahlgren	MIPR	NSWC - Dahlgren : Dahlgren, VA	0.000	0.153	Nov 2020	2.009	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
RF Link Improvements - RF Link Improvements - SM-3	SS/CPFF	Raytheon : Tucson, AZ	0.000	3.672	Nov 2020	21.512	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
RF Link Improvements - RF Link Improvements - SM-3 APL	SS/CPFF	JHU/APL : Laurel, MD	0.000	0.000		1.511	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
RF Link Improvements - RF Link Improvements - WS	SS/CPIF	Lockheed Martin : Moorestown, NJ	0.000	0.000		1.036	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Guam Defense Aegis Fire Control Software Upgrades - JHU/APL	C/CPIF	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : MD	0.000	0.000		0.000		5.000	Nov 2022	-		5.000	Continuing	Continuing	Continuing
Guam Defense Aegis Fire Control Software Upgrades - Lockheed Martin	C/CPIF	LOCKHEED MARTIN CORPORATION : NJ	0.000	0.000		0.000		36.000	Nov 2022	-		36.000	Continuing	Continuing	Continuing
Guam Defense Aegis Fire Control Software Upgrades - NSWC Dahlgren	MIPR	Naval Surface Warfare Center (NSWC)/Dahlgren Division : VA	0.000	0.000		0.000		4.000	Nov 2022	-		4.000	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			3,319.686	360.367		344.490		344.239		-		344.239	Continuing	Continuing	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,319.686	360.367	344.490	344.239	-	344.239	Continuing	Continuing	N/A

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. Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

Activity	Element Test Complete			System Level Test Complete			Complete Activity															
	Element Test Planned			System Level Test Planned			Planned Activity															
	FY 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			
BMD 6.0 IPR #8																						
BMD 5.1.4.1 OCB																						
AN/SPY-1 dLNA Demo Hardware Design Review																						
BMD 5.1.5 EA																						
BMD 6.0 EA #3																						
Defense of Guam Weapon System SRR																						
AN/SPY-1 dLNA Demo Software Design Review																						
BL 5.4.1 (BMD 4.2) CERT																						
BMD 5.1.5 CSCP																						
BMD 5.1.5 OCB																						
AN/SPY-1 dLNA Demo System Design Review																						
BMD 6.0 EA #4																						
BL 5.4.1 (BMD 4.2) OCB																						
BMD 6.0 CSCP																						
BMD 6.0 OCB																						
AN/SPY-1 dLNA demo EA																						
AN/SPY-1 dLNA demo TRR																						
AN/SPY-1 dLNA Demo																						

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BL 5.4.1 (BMD 4.2) IPR #2	1	2021	1	2021
BMD 5.1.3 Certification	1	2021	1	2021
BMD 5.1.3 BMDS OCB Approval	2	2021	2	2021
BL 5.4.1 (BMD 4.2) IPR #3	3	2021	3	2021
BMD 6.0 IPR #6	3	2021	3	2021
BMD 5.1.5 PSRR	3	2021	3	2021
BMD 5.1.5 SRR	4	2021	4	2021
BMD 5.1.6 PSRR	4	2021	4	2021
BMD 6.0 EA #1	1	2022	1	2022
BL 5.4.1 (BMD 4.2) IPR #4	1	2022	1	2022
BMD 5.1.6 SRR	2	2022	2	2022
BL 5.4.1 (BMD 4.2) IPR #5	2	2022	2	2022
BMD 5.1.4.0 EA	3	2022	3	2022
BMD 5.1.4.0 CSCP	3	2022	3	2022
BMD 5.1.5 IPR #1/PDR	3	2022	3	2022
BMD 6.0 Capabilities EA	3	2022	3	2022
BMD 6.0 IPR #7	3	2022	3	2022
BMD 5.1.4.0 OCB	4	2022	4	2022
BMD 5.1.4.1 EA	4	2022	4	2022
BMD 5.1.5 CDR	4	2022	4	2022
BMD 5.1.5 IPR #2/CDR	4	2022	4	2022
BMD 5.1.6 IPR #1/PDR	4	2022	4	2022
BL 5.4.1 (BMD 4.2) EA	1	2023	1	2023

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 5.1.4.1 CSCP	1	2023	1	2023
BMD 6.0 IPR #8	1	2023	1	2023
BMD 5.1.4.1 OCB	2	2023	2	2023
AN/SPY-1 dLNA Demo Hardware Design Review	2	2023	2	2023
BMD 5.1.5 EA	3	2023	3	2023
BMD 6.0 EA #3	3	2023	3	2023
Defense of Guam Weapon System SRR	3	2023	3	2023
AN/SPY-1 dLNA Demo Software Design Review	4	2023	4	2023
BL 5.4.1 (BMD 4.2) CERT	4	2023	4	2023
BMD 5.1.5 CSCP	1	2024	1	2024
BMD 5.1.5 OCB	2	2024	2	2024
AN/SPY-1 dLNA Demo System Design Review	3	2024	3	2024
BMD 6.0 EA #4	3	2024	3	2024
BL 5.4.1 (BMD 4.2) OCB	3	2024	3	2024
BMD 6.0 CSCP	4	2024	4	2024
BMD 6.0 OCB	2	2025	2	2025
AN/SPY-1 dLNA demo EA	2	2025	2	2025
AN/SPY-1 dLNA demo TRR	3	2025	3	2025
AN/SPY-1 dLNA Demo	4	2025	4	2025

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development
--	---	---

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MM09: <i>Aegis BMD SM-3 Development</i>	545.580	303.832	124.708	86.633	-	86.633	66.010	48.265	70.835	85.089	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2022 to FY 2023 reflects the reduction of development activities including the SM-3 Blk IB TU/TR, GEU ECP, SWUP build 8, and incorporation of SWUP build 8 into the production line.

A. Mission Description and Budget Item Justification

Provides development of SM-3 Missiles, Upgrade Modifications, and Integration into the Aegis Weapon System.

The SM-3 Block IB improves Aegis BMD's ability to expand the BMD battlespace, 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 consists of an upgrade to a 21-inch diameter SM-3 missile and expands beyond the SM-3 Block IB battlespace to counter Intermediate Range Ballistic Missile (IRBM). SM-3 Block IIA provides an increased kinematic envelope through improved IR discrimination and divert capability that provide performance against the EPAA phase III expanded threat set. When combined with Aegis BMD 5.1 weapon system modifications, the SM-3 Block IIA will provide Engage on Remote (EoR) capability, which allows the use of remote off board sensor information to launch and guide the SM-3 Block IIA to final intercept. Aegis BMD 5.1 EoR capability with SM-3 Block IIA also frees up radar resources and increases the number and type of threats to be engaged simultaneously over previous baselines.

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

	FY 2021	FY 2022	FY 2023
Title: Standard Missile-3 (SM-3) Block IB Development	73.509	51.298	9.359
Articles:	-	-	-
Description: This effort modernizes the SM-3 Block IB missile, which improves on the SM-3 Block IA performance and enables engagement of more sophisticated ballistic missiles and larger raid sizes SM-3 Block IB TU/TR (previously IB Modernization) will provide the following: - Refreshed SM-3 KW Common Avionics Package will provide improved producibility and utilization of common components between the SM-3 Block IIA. SM-3 Block IB common components will be extendable to support different form/fit in circuit card assemblies across SM-3 Block IB and SM-3 Block IIA and will mitigate SM-3 Block IB hardware availability issues. Includes Back-fit of IIA GEU ECP into IB			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD		Project (Number/Name) MM09 / Aegis BMD SM-3 Development
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2021	FY 2022	FY 2023
<p>- Refreshed SM-3 Block IB Guidance Section (GS) with the integration of Digital Data Link (DDL) replacement of Plate 3A will resolve Plate 3A hardware availability issues</p> <p>Recurring Accomplishments:</p> <p>- Assess performance with weapons systems upgrades/modifications and against emerging threats</p> <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <p>- SEE ABOVE</p> <p>FY 2023 Plans:</p> <p>- SEE ABOVE</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Decrease from FY 2022 to FY 2023 reflects the completion of development activities for SM-3 Block IB TU/TR.</p>				
<p>Title: Standard Missile-3 (SM-3) Block IIA Development</p> <p align="right">Articles:</p>		230.323	73.410	77.274
<p>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> <p>Recurring Accomplishments:</p> <p>- 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 CDR</p> <p>- Conduct End to End Distributed Development System (ETEDDS) integration testing; and flight test support</p> <p>- 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)</p> <p>- Continue transition of KW hardware commonality effort (from design to material purchases) to system integration testing in order to demonstrate Technology Readiness Level (TRL) 7</p> <p>- Continue Engineering Manufacture Readiness Level (EMRL) 3 compliance to support life cycle progression</p> <p>Specific and unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <p>- Conduct improved BMD 5.1 Raid to meet BMD 5.1 requirements, discrimination improvements to support future threats, and other BMD System Capability improvements aligned with AWS Baseline Improvements.</p> <p>- Integration and engineering of the SM-3 BLK IIA Build 8 missile with BMD AWS Baselines 5.x.</p> <p>- Completion of program Transition to Production (EMRL 4 maturity).</p>		-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
- Complete GEU ECP qualification, integration and Transition to Production development.			
<i>FY 2023 Plans:</i> -SEE ABOVE			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Increase from FY 2022 to FY 2023 reflects continuation of GEU ECP and continuation of Build 8 efforts.			
Accomplishments/Planned Programs Subtotals	303.832	124.708	86.633

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0208866C MD09: SM-3 Block IB Procurement	353.896	334.621	402.235	-	402.235	378.685	362.834	496.857	506.794	Continuing	Continuing
• 0208866C MD09: Aegis BMD O&M	79.913	68.293	69.071	-	69.071	70.303	75.240	87.513	91.726	Continuing	Continuing
• 0208866C MD14: SM-3 Block IIA Procurement	318.322	488.022	337.975	-	337.975	458.224	479.190	460.468	457.932	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development
--	---	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - Standard Missile-3 (SM-3) Block IB Development - MM09 Carderock	MIPR	NSWC Carderock : Bethesda, MD	0.882	0.000		0.000		0.000		-		0.000	0.000	0.882	0.000
Standard Missile-3 (SM-3) Block IB Development - Standard Missile-3 (SM-3) Block IB Development - MM09	SS/CPIF	Raytheon : Tuscon, AZ	88.898	70.770	Dec 2020	49.606	Dec 2021	8.871	Dec 2022	-		8.871	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - Standard Missile-3 (SM-3) Block IB Development - MM09 - 20117142332259	MIPR	NSWC/PHD : Port Hueneme, CA	0.199	0.000		0.000		0.000		-		0.000	0.000	0.199	0.000
Standard Missile-3 (SM-3) Block IB Development - Standard Missile-3 (SM-3) Block IB Development - MM09 - Various	MIPR	NSWC Corona : Corona, CA	0.720	0.333	Nov 2020	0.260	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - Standard Missile-3 (SM-3) Block IB Development - MM09 MIT	MIPR	Hanscom AFB - MIT/LL : Lexington, MA	1.105	0.000		0.000		0.000		-		0.000	0.000	1.105	0.000
Standard Missile-3 (SM-3) Block IB Development - Standard Missile-3 (SM-3) Block IB Development - MM09 DD	MIPR	NSWC Dahlgren : Dahlgren, VA	1.608	0.316	Nov 2020	0.420	Nov 2021	0.058	Nov 2022	-		0.058	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - Standard Missile-3 (SM-3) Block IB Development - MM09 JHU/APL	SS/CPFF	JHUAPL : Laurel, MD	2.172	2.090	Nov 2020	1.012	Nov 2021	0.430	Nov 2022	-		0.430	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development -	MIPR	Various : CA, VA, MD	23.528	8.701	Nov 2020	1.588	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development
--	---	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - CA,VA, MD															
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA INTEGRATION	SS/CPIF	Raytheon : Tucson, AZ	351.588	183.393	Mar 2021	63.733	Oct 2021	67.024	Nov 2022	-		67.024	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA INTEGRATION - APL	MIPR	JHU/APL : Laurel, MD	30.899	11.279	Dec 2020	4.017	Nov 2021	2.294	Dec 2022	-		2.294	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA INTEGRATION - DD	MIPR	NSWC DD : Dahlgren, VA	16.065	7.461	Nov 2020	2.398	Nov 2021	7.206	Dec 2022	-		7.206	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - NSWC Corona	MIPR	NSWC Corona : Corona, CA	6.563	0.000		1.188	Nov 2021	0.500	Dec 2022	-		0.500	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - NSWC/Crane	MIPR	NWSC/Crane : IN	2.466	0.355	Nov 2020	0.486	Nov 2021	0.250	Dec 2022	-		0.250	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA	MIPR	Brookhaven Lab - DOE : Uptown NY	3.830	0.000		0.000		0.000		-		0.000	0.000	3.830	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development
--	---	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - Standard Missile-3 (SM-3) Block IIA Development - MM09 - SM-3 BLK IIA Draper	SS/CPIF	Draper Laboratory : Cambridge MA	4.133	0.934	Nov 2020	0.000		0.000		-		0.000	0.000	5.067	0.000
Standard Missile-3 (SM-3) Block IIA Development - Standard Missile-3 (SM-3) Block IIA Development - NJ	C/CPFF	Lockheed Martin : Moorestown NJ	10.924	18.200	Nov 2020	0.000		0.000		-		0.000	0.000	29.124	0.000
Subtotal			545.580	303.832		124.708		86.633		-		86.633	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	545.580	303.832		124.708		86.633	-	86.633	Continuing	Continuing	N/A

Remarks
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development
--	---	---

	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 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			
Build 8.1 Operational Capability Baseline (OCB)	▲																					
Build 8.1 MPAN WSERB	▲																					
IBTU Tech Refresh PDR		▲																				
Build 8.3 with BMD 5.1.5 SRR				▲																		
Build 8.2 Formal Qualification Testing (FQT)					△																	
IBTU Tech Refresh Qualification							△															
Build 8.2 and BMD 5.1.4 OCB								△														
GEU-ECP (1st AUR Delivery with ECP)								△														
Build 8.3 FQT									△													
IBTU Tech Refresh CDR										△												
GEU-ECP Transition to Production										△												
Build 8.3 and BMD 5.1.5 OCB											△											

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MM09 / Aegis BMD SM-3 Development
--	---	---

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Build 8.1 Operational Capability Baseline (OCB)	1	2021	1	2021
Build 8.1 MPAN WSERB	1	2021	1	2021
IBTU Tech Refresh PDR	2	2021	2	2021
Build 8.3 with BMD 5.1.5 SRR	4	2021	4	2021
Build 8.2 Formal Qualification Testing (FQT)	1	2022	1	2022
IBTU Tech Refresh Qualification	4	2022	4	2022
Build 8.2 and BMD 5.1.4 OCB	1	2023	1	2023
GEU-ECP (1st AUR Delivery with ECP)	1	2023	1	2023
Build 8.3 FQT	3	2023	3	2023
IBTU Tech Refresh CDR	3	2023	3	2023
GEU-ECP Transition to Production	3	2023	3	2023
Build 8.3 and BMD 5.1.5 OCB	2	2024	2	2024

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MC09: <i>Cyber Operations</i>	37.404	8.544	3.750	4.431	-	4.431	4.682	4.882	4.842	4.938	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2022 to FY 2023 provides monitoring requirements in support of the Host Based Security System, Assurance Compliance Assessment Solution (ACAS) Vulnerability scanning, and System Information and Event Management (SIEM) (i.e. ArcSight) requirements at remote sites.

A. Mission Description and Budget Item Justification

Sustain the DoD Risk Management Framework (RMF) Certification and Accreditation process and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Systems Security Manager (PM/ISSM).

This project supports the monitoring and tracking of Cybersecurity mitigation detailed in Information Technology Security Plan of Action and Milestones (POA&Ms). Activities include preparation of C&A documentation and accreditation recommendations to the MDA Authorizing Official (AO). Independent Verification and Validation (IV&V) team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the AB mission and non-mission systems, which includes test and remote site administrative systems. Activities in the Project are necessary to comply with the Federal Information Security Management Act (FISMA).

The SM-3 Block IB and IIA missiles and corresponding Aegis BMD weapon systems communication requires hardware and software development and integration testing to enable new cyber security capabilities. Activities include Encoder/Decoder, Plate 3 CCAs and Mission Computer CCA updates. After missile and baseline specific efforts are complete, significant integration testing is required.

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

	FY 2021	FY 2022	FY 2023
Title: Network / System Certification and Accreditation (C&A)	8.544	3.750	4.431
Articles:	-	-	-
Description: Network/System Certification and Accreditation (C&A) includes recurring efforts such as cybersecurity engineering and architecture requirements planning for Aegis BMD systems, plan and test the Risk Management Framework (RMF) controls for the BMDS in regards to Aegis BMD systems to comply with the new directive, RMF for DoD Information Technology (DoDi 8510.01) to replace the DoD Information Assurance Certification and Accreditation process (DIACAP) and conduct Controls Validation Testing (CVT). Recurring Accomplishments: - Continue coordination and development of new and existing accreditation packages that comply with new directive, RMF for DoD Information Technology (DoDi 8510.01) process - CVT and cooperative risk assessments to mitigate cybersecurity deficiencies			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
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 2021	FY 2022	FY 2023
- Develop and deploy Hardware and Software HW/SW implementation strategies for Continuous Monitoring activities at remote sites and Aegis BMD assets - Monthly reviews of systems through the eMass System - Daily management of eMass System Plan of Action and Milestones (POAMs)			
FY 2022 Plans: - SEE ABOVE.			
FY 2023 Plans: - SEE ABOVE.			
FY 2022 to FY 2023 Increase/Decrease Statement: Increase from FY 2022 to FY 2023 provides monitoring requirements in support of the Host Based Security System, ACAS Vulnerability scanning, and SIEM (i.e. ArcSight) requirements at remote sites.			
Accomplishments/Planned Programs Subtotals	8.544	3.750	4.431

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	1,195.853	724.028	667.524	-	667.524	870.817	802.617	781.973	765.733	Continuing	Continuing
• 0603884C: Ballistic Missile Defense Sensors	259.605	254.962	231.134	-	231.134	250.028	274.705	276.254	257.575	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	639.027	564.946	589.374	-	589.374	575.883	588.824	612.853	605.801	Continuing	Continuing
• 0603898C: Ballistic Missile Defense Joint Warfighter Support	49.261	50.594	50.269	-	50.269	51.849	55.960	56.488	54.980	Continuing	Continuing
• 0603904C: Missile Defense Integration and Operations Center (MDIOC)	54.026	52.403	49.367	-	49.367	51.744	56.502	57.833	59.006	Continuing	Continuing
• 0604878C: Aegis BMD Test	71.481	111.206	182.776	-	182.776	173.492	159.125	203.851	187.494	Continuing	Continuing
• 0604880C: Land Based SM-3 (LBSM3)	52.804	43.158	27.678	-	27.678	26.896	26.021	26.842	27.385	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0901598C: <i>Management HQ - MDA</i>	26.902	24.102	25.259	-	25.259	25.836	26.438	26.984	27.524	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603892C / AEGIS BMD				MC09 / Cyber Operations					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies : Huntsville, AL	2.747	0.000		0.000		0.000		-		0.000	0.000	2.747	0.000
Network / System Certification and Accreditation (C&A) - Cyber TEAMS MC09 - BMDS CSM/CND	C/CPFF	SYSTEM HIGH CORPORATION : TBD	0.000	0.000		0.000		0.505	Nov 2022	-		0.505	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cyber TEAMS MC09 - CCRM	C/CPFF	DECISIVE ANALYTICS CORPORATION : TBD	0.000	0.000		0.000		3.104	Nov 2022	-		3.104	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Cyber TEAMS - MC09	C/CPFF	Booz Allen and Hamilton : McLean, VA	11.128	3.573	Nov 2020	2.757	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (C&A) - Network System Certification and Accreditation - RMS	SS/CPAF	Raytheon : Tucson, AZ	0.000	4.106	Nov 2020	0.000		0.000		-		0.000	0.000	4.106	0.000
Network / System Certification and Accreditation (C&A) - Network System Certification and Accreditation	SS/CPAF	Lockheed Martin : Moorestown NJ	11.813	0.000		0.000		0.000		-		0.000	0.000	11.813	0.000
Network / System Certification and Accreditation (C&A)	MIPR	DISA : Falls Church, VA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency												Date: April 2022			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603892C / AEGIS BMD				MC09 / Cyber Operations					
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
- Network System Certification and Accreditation - DISA															
Network / System Certification and Accreditation (C&A) - Network System Certification and Accreditation - PHD	MIPR	NSWC/PHD : Port Hueneme CA	0.501	0.000		0.000		0.000		-		0.000	0.000	0.501	0.000
Network / System Certification and Accreditation (C&A) - Network/System Certification and Accreditation - DD	MIPR	NSWC - DD : Dahlgren VA	1.300	0.000		0.000		0.000		-		0.000	0.000	1.300	0.000
Network / System Certification and Accreditation (C&A) - Program Operations - MC09 - CivSal	Allot	MDA : VA	0.343	0.601	Nov 2020	0.156	Nov 2021	0.161	Oct 2022	-		0.161	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Security Operations - Secure Communications/ Equipment	C/CPFF	Jacobs Technology : TN	0.682	0.264	Nov 2020	0.837	Nov 2021	0.661	Dec 2022	-		0.661	Continuing	Continuing	Continuing
RF Link Improvements - RF Link Improvements - SM-3	SS/CPFF	Raytheon : Tucson, AZ	8.390	0.000		0.000		0.000		-		0.000	0.000	8.390	0.000
RF Link Improvements - RF Link Improvements - SM-3 APL	SS/CPFF	JHU/APL : Laurel, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
RF Link Improvements - RF Link Improvements - WS	SS/CPFF	Lockheed Martin : Moorestown, NJ	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	0.000
Subtotal			37.404	8.544		3.750		4.431		-		4.431	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.404	8.544	3.750	4.431	-	4.431	Continuing	Continuing	N/A

Remarks
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

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

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 ◇														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 12.5%;">FY 2021</th> <th style="width: 12.5%;">FY 2022</th> <th style="width: 12.5%;">FY 2023</th> <th style="width: 12.5%;">FY 2024</th> <th style="width: 12.5%;">FY 2025</th> <th style="width: 12.5%;">FY 2026</th> <th style="width: 12.5%;">FY 2027</th> </tr> </thead> <tbody> <tr> <td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td> </tr> </tbody> </table>					FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	◇	◇	◇	◇	◇	◇	◇
FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027												
◇	◇	◇	◇	◇	◇	◇												

MC09 Cyber Operations

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC09 Cyber Operations	1	2021	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MX09: Aegis BMD Development Support	678.923	158.251	136.506	142.980	-	142.980	160.210	165.334	169.313	172.442	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2022 to FY 2023 provides:

- Development of virtual AWS M&S solutions to support Wargames and Exercises to replace the existing low fidelity M&S solutions which require regular development and maintenance to stay current with Fleet capabilities.
- Automation of doctrine development and management of Aegis BMD documentation for the Fleet.
- Integration of Fleet feedback processes with the Forge development program to increase the throughput and speed to resolve Warfighter feedback items.
- Addition of BMDS Test Site (BTS) Hardware.

A. Mission Description and Budget Item Justification

This includes the Government, contractor, and Federally Funded Research and Development Center (FFRDC) workforce that manage the overall Sea-Based Weapon Systems program and enables the program to develop, build, and test standard missiles and associated Aegis Weapons Systems. Sea-Based Weapon Systems, in accordance with negotiated agreements between the U.S. Navy and the Missile Defense Agency (MDA) has identified and segregated funding for Developmental Support of Sea-Based Weapon Systems specific elements resident aboard Aegis capable U.S. 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 System (FCS)) alignment updates as required. Sea-Based Weapon Systems 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. Provides Fleet operations and mission support to enable the conduct of sustained BMD operation.

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

	FY 2021	FY 2022	FY 2023
Title: Program Operations	87.408	85.575	88.366
Articles:	-	-	-
<p>Description: This activity includes the Government, contractor, and FFRDC workforce that manage the overall Sea-Based Weapon Systems program and enables the program to develop, build, and test standard missiles and the associated Aegis Weapon Systems. This project 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>Specific and/or unique accomplishments to each FY are as follows:</p>			
<p>FY 2022 Plans:</p>			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
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 2021	FY 2022	FY 2023
- SEE ABOVE				
FY 2023 Plans: - SEE ABOVE.				
FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: Aegis Ballistic Weapon System Support		31.120	22.123	21.766
		Articles: -	-	-
Description: Provides system engineering for fielded Sea-Based Weapon Systems from warfighter feedback, investigation of BMDS Discrepancy Reports, and BMDS ground test observation analysis. It includes computer program defect corrections and supports assessment of flight test readiness. Recurring Accomplishments: - Update threat adaptation data to keep pace with emergent threats - Provide operation and sustainment of land based test sites used for the development of Aegis BMD baselines. Operation and sustainment includes Engineering, Logistics, Quality Assurance, Configuration Management and other support activities to both baseline development and the sites. - Provide support for contingency operations of national interest - Support upgrades to 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 - Provide test site usage for maintenance and support of baselines under development - Sustain the classified computing infrastructure needed for development efforts Specific and/or unique accomplishments to each FY are as follows: FY 2022 Plans: SEE ABOVE FY 2023 Plans: SEE ABOVE FY 2022 to FY 2023 Increase/Decrease Statement: N/A				
Title: Fleet Integration		23.740	17.444	19.268
		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;				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022		
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 2021	FY 2022	FY 2023
<p>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 deployed in the Operational Fleet.</p> <p>Recurring Accomplishments:</p> <ul style="list-style-type: none"> - Define, develop and review Joint and Fleet Doctrine for incorporation of Aegis BMD capability transition to warfighter and baseline acceptance into MDA OCB - Research and define certification and warfighter acceptance requirements for Aegis BMD baselines to ensure successful capability delivery - Develop Aegis BMD training simulations and scenarios to support shipboard training including BMD Qualification (BMDQ) and higher level exercises - Execute warfighter feedback process to enhance Aegis BMD functional capability development and influence future Aegis BMD requirements and support MDA Test Community and Combatant Commanders in BMD Exercises and Wargames - Provide analysis for Anti-Ship Ballistic Missile Defense - Provide analysis on parametric organic sensor sensitivity - Provide analysis on up-range ship/sensor support for Launch on Remote (LoR), Engage on Remote (EoR), and Cued engagements - Provide analysis on impacts of countermeasures - Provide analysis on developing threats <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - SEE ABOVE. <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p> <p>Increase from FY 2022 to FY 2023 provides:</p> <ul style="list-style-type: none"> - Development of virtual AWS M&S solutions to support Wargames and Exercises to replace the existing low fidelity M&S solutions which require regular development and maintenance to stay current with Fleet capabilities. - Automation of doctrine development and management of Aegis BMD documentation for the Fleet. - Integration of Fleet feedback processes with the Forge development program to increase the throughput and speed to resolve Warfighter feedback items. 				
Title: Infrastructure Upgrades		15.983	11.364	13.580
Articles:		-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency		Date: April 2022
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 2021	FY 2022	FY 2023
<p>Description: Provides management of C4I aspects of the BTS San Diego upgrade plan to maintain Fleet representative C4I configurations to support testing, troubleshooting, and Fleet operations. Includes IT services in support of the Aegis RDT&E mission to include: 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, replaces critical IT infrastructure at end-of-life and to implement DoD mandated projects in support of the Joint Information environment (JIE) initiative.</p> <p>Recurring accomplishments:</p> <ul style="list-style-type: none"> - Procure and installation of two TI-16 Mod 1 Baseline 10 labs to support MDA Ground Testing commencing in FY22 - Procure and installation of two Detection Simulation (DETSIM) Emulators to support AN/APY-6 testing commencing in FY22 - Procure and installation of three Virtual Twin/VTE - IDIQ Contract # N002418F8622 / PR# 1300855404 commencing in FY22 - Establishment of Cooperative Engagement Capability (CEC) lab and interaction to Aegis BMD labs - Conduct Aegis IT services such as IT help-desk; portal and data services; records management; business automation services; and desktop and SPPN maintenance and licenses - Replacement of critical end-of-life equipment - Upgrades to IT infrastructure planning and implementation efforts to accomplish DoD mandated IT Projects (JIE and DoD Chief Information Officer (CIO) Information Resources Management (IRM) initiatives. <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Develop, procure and install Combined Federated Battle Laboratories Network (CFBLNet) allowing MDACNET chat and voice capability - Develop, procure and install Program Executive Office Integrated Warfare Systems-Cyber (PEO IWS-C) Integrated Air and Missile Defense (IAMD) Risk Reduction Testing with IFF Sensor and Tactical Air (TACAIR) capabilities <p>FY 2023 Plans: SEE ABOVE</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase from FY 2022 to FY 2023 reflects addition of BTS Hardware.</p>			
Accomplishments/Planned Programs Subtotals	158.251	136.506	142.980

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0208866C MD09: <i>MD09 Aegis BMD O&M</i>	79.913	68.293	69.071	-	69.071	70.303	75.240	87.513	91.726	Continuing	Continuing
• 0604878C: <i>Aegis BMD Test</i>	71.481	111.206	182.776	-	182.776	173.492	159.125	203.851	187.494	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

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

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: Land Based SM-3 (LBSM3)	52.804	43.158	27.678	-	27.678	26.896	26.021	26.842	27.385	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Sea-Based Weapon Systems 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 Sea-Based Weapon Systems 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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - Program Operations - MX09 - GSA Procurement for MDA Historical Project	C/CPFF	Gryphon Technologies : VA	0.316	0.000		0.000		0.000		-		0.000	0.000	0.316	0.000
Program Operations - Program Operations - MX09 - Civ Sal	Allot	MDA : VA	91.700	34.623	Nov 2020	32.567	Nov 2021	33.869	Nov 2022	-		33.869	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - DD PM	MIPR	NSWC/DD : Dahlgren, VA	8.911	2.057	Nov 2020	0.000		0.000		-		0.000	0.000	10.968	0.000
Program Operations - Program Operations - MX09 - IT	Various	MDA : VA, AL	4.438	1.776	Nov 2020	1.255	Dec 2021	1.774	Dec 2022	-		1.774	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - MDA Travel	Allot	MDA : VA	5.103	0.784	Nov 2020	0.785	Oct 2021	1.139	Oct 2022	-		1.139	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - NAVSEA Civ Sal	MIPR	NAVSEA : Washington, DC	38.603	14.034	Nov 2020	14.688	Nov 2021	15.130	Nov 2022	-		15.130	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - NAVSEA RB Sal	MIPR	NAVSEA : Washington, DC	7.210	1.745	Nov 2020	1.797	Nov 2021	1.851	Nov 2022	-		1.851	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - NAVSEA Training, Various	MIPR	NAVSEA : Washington, DC	1.602	0.020	Nov 2020	0.030	Nov 2021	0.030	Nov 2022	-		0.030	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - Program Operations - MX09 - NAVSEA Travel	MIPR	NAVSEA : Washington, DC	2.496	0.000		0.000		0.000		-		0.000	0.000	2.496	0.000
Program Operations - Program Operations - MX09 - Security	MIPR	Various : VA	1.833	0.085	Nov 2020	0.300	Nov 2021	0.300	Nov 2022	-		0.300	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - TEAMS	C/CPFF	Various : VA, AL	131.634	31.284	Nov 2020	34.153	Nov 2021	4.314	Nov 2022	-		4.314	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 - USACE Litigation efforts	MIPR	Army Corps of Engineers : Various	0.000	1.000	Jun 2021	0.000		0.000		-		0.000	0.000	1.000	0.000
Program Operations - Program Operations - MX09 TEAMS Acquisition	C/CPFF	BCF SOLUTIONS, INC. : VA	0.000	0.000		0.000		2.315	Nov 2022	-		2.315	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 TEAMS Business Ops	C/CPFF	Veterans Technology, LLC : VA	0.000	0.000		0.000		3.679	Nov 2022	-		3.679	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 TEAMS MDS Engineering	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : VA	0.000	0.000		0.000		15.269	Nov 2022	-		15.269	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 TEAMS Office Admin	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : VA	0.000	0.000		0.000		2.085	Nov 2022	-		2.085	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 TEAMS Predictive Eng	C/CPFF	TORCH TECHNOLOGIES INC : TBD	0.000	0.000		0.000		1.348	Nov 2022	-		1.348	Continuing	Continuing	Continuing
Program Operations - Program Operations - MX09 TEAMS QMA	C/CPFF	AI SOLUTIONS, INC. : VA	0.000	0.000		0.000		2.174	Nov 2022	-		2.174	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 - Program Operations - MX09 TEAMS Warfighter Integration	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : VA	0.000	0.000		0.000		3.089	Nov 2022	-		3.089	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW APL	SS/CPFF	JHU/APL : Columbia, MD	7.088	0.767	Nov 2020	0.853	Nov 2021	0.744	Nov 2022	-		0.744	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW DD	MIPR	NSWC DD : Dahlgren, VA	24.110	3.288	Nov 2020	3.505	Nov 2021	3.223	Nov 2022	-		3.223	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW LM	C/CPFF	Lockheed Martin : Moorestown, NJ	57.692	17.794	Nov 2020	2.098	Nov 2021	4.215	Nov 2022	-		4.215	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW NAVSEA	MIPR	NAVSEA : Washington, DC	61.556	7.002	Nov 2020	14.861	Nov 2021	11.624	Nov 2022	-		11.624	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW TECH REP	MIPR	Aegis Tech Rep : Moorestown, NJ	1.538	0.056	Nov 2020	0.432	Nov 2021	0.210	Nov 2022	-		0.210	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - AW Wallops	MIPR	SCSC : Wallops Island, VA	4.780	1.713	Nov 2020	0.374	Nov 2021	1.750	Nov 2022	-		1.750	Continuing	Continuing	Continuing
Aegis Ballistic Weapon System Support - MX09 - TD Various	MIPR	Various : San Diego, CA	32.663	0.500	Nov 2020	0.000		0.000		-		0.000	0.000	33.163	0.000
Aegis Ballistic Weapon System Support - MX09 - AW PHD	MIPR	NSWC PHD : Port Hueneme, CA	0.956	0.000		0.000		0.000		-		0.000	0.000	0.956	0.000
Fleet Integration - MX09 - ABS	MIPR	NIWC : San Diego, CA	2.000	0.000		1.000	Nov 2021	1.019	Nov 2022	-		1.019	Continuing	Continuing	Continuing
Fleet Integration - MX09 - ABS APL	SS/CPFF	JHU/APL : Columbia, MD	0.000	0.000		5.939	Nov 2021	6.050	Nov 2022	-		6.050	Continuing	Continuing	Continuing
Fleet Integration - MX09 - ABS Fleet	C/CPFF	LM : VA	0.025	5.033	Nov 2020	0.000		0.000		-		0.000	0.000	5.058	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	SS/CPFF	JHU/APL/MD : Columbia, MD	41.378	12.891	Nov 2020	5.773	Nov 2021	6.456	Nov 2022	-		6.456	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet DD	MIPR	NSWC DD : Dahlgren, VA	12.552	2.415	Nov 2020	2.449	Nov 2021	3.160	Nov 2022	-		3.160	Continuing	Continuing	Continuing
Fleet Integration - MX09 - Fleet PEO C41	MIPR	PEO C41 : San Diego, CA	4.004	1.004	Nov 2020	0.000		0.000		-		0.000	0.000	5.008	0.000
Fleet Integration - MX09 - Fleet SMDC	MIPR	SMDC/ARSTRST : Huntsville, AL	2.957	0.825	Nov 2020	0.630	Nov 2021	0.930	Nov 2022	-		0.930	Continuing	Continuing	Continuing
Fleet Integration - MX09 - TG & Cerberus Integration	C/CPFF	NORTHROP GRUMMAN : AL	0.000	0.315	May 2021	0.000		0.000		-		0.000	0.000	0.315	0.000
Fleet Integration - MX09 - Fleet CSCS	MIPR	CSCS : Dahlgren, VA	5.618	1.257	Nov 2020	1.653	Nov 2021	1.653	Nov 2022	-		1.653	Continuing	Continuing	Continuing
Infrastructure Upgrades - Infrastructure Upgrades - MX-09 S Jacobs	C/CPAF	Jacobs Engineering : AL, CA, CO, NM, VA, HI	0.096	0.000		0.000		0.000		-		0.000	0.000	0.096	0.000
Infrastructure Upgrades - Infrastructure Upgrades MX-09 S Network	C/CPFF	Network Management Resources : Chantilly, VA	0.171	0.000		0.000		0.000		-		0.000	0.000	0.171	0.000
Infrastructure Upgrades - MX09 - ICT Funding	C/CPAF	Jacobs Engineering : AL, CA, CO, NM, VA, HI	59.171	11.649	Nov 2020	11.364	Nov 2021	11.509	Nov 2022	-		11.509	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09 - S	MIPR	DOD - USN - NAVAL INFORMATION WARFARE SYSTEMS COMMAND (NAVWAR) : CA	0.446	0.000		0.000		0.000		-		0.000	0.000	0.446	0.000
Infrastructure Upgrades - MX09 - S APL	SS/CPAF	JHU/APL : Laurel, MD	6.957	0.000		0.000		0.000		-		0.000	0.000	6.957	0.000
Infrastructure Upgrades - MX09 - S Corona	MIPR	NSWC Corona : Corona, CA	5.332	0.000		0.000		0.000		-		0.000	0.000	5.332	0.000
Infrastructure Upgrades - MX09 - S LM	C/CPAF	Lockheed Martin : Moorestown, NJ	21.629	0.000		0.000		0.000		-		0.000	0.000	21.629	0.000

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Infrastructure Upgrades - MX09 - S MIT	C/CPAF	MIT : Lexington, MA	1.306	0.000		0.000		0.000		-		0.000	0.000	1.306	0.000
Infrastructure Upgrades - MX09 - S RMS	C/CPAF	Raytheon : Tucson, AZ	6.920	0.000		0.000		0.000		-		0.000	0.000	6.920	0.000
Infrastructure Upgrades - MX09- D/TD	MIPR	DOD - USN - NAVAL INFORMATION WARFARE SYSTEMS COMMAND (NAVWAR) : CA	13.910	4.334	Nov 2020	0.000		2.071	Nov 2022	-		2.071	Continuing	Continuing	Continuing
Infrastructure Upgrades - MX09- S DD	MIPR	NSWC DD : Dahlgren, VA	3.843	0.000		0.000		0.000		-		0.000	0.000	3.843	0.000
Infrastructure Upgrades - MX09-Variou s	MIPR	Various : Various	1.579	0.000		0.000		0.000		-		0.000	0.000	1.579	0.000
Joint Emerging Operational Need (JEON) - Joint Emerging Operational Needs Statement (JEON) - MX09 AW JHU/APL	SS/CPFF	JHU/APL : Columbia, MD	0.480	0.000		0.000		0.000		-		0.000	0.000	0.480	0.000
Joint Emerging Operational Need (JEON) - Joint Emerging Operational Needs Statement (JEON) - MX09 AW Lockheed Martin	C/CPFF	Lockheed Martin : Moorestown, NJ	3.635	0.000		0.000		0.000		-		0.000	0.000	3.635	0.000
Joint Emerging Operational Need (JEON) - Joint Emerging Operational Needs Statement (JEON) - MX09 AW NSWC	MIPR	NSWC DD : Dahlgren, VA	0.685	0.000		0.000		0.000		-		0.000	0.000	0.685	0.000
Subtotal			678.923	158.251		136.506		142.980		-		142.980	Continuing	Continuing	N/A

Remarks
N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			-	-		-		-		-		-	-	-	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	678.923	158.251	136.506	142.980	-	142.980	Continuing	Continuing	N/A

Remarks
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Missile Defense Agency **Date:** April 2022

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development 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 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
MX09 Aegis BMD Development Support	◇	◇	◇	◇	◇	◇	◇

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency		Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MX09 Aegis BMD Development Support	1	2021	4	2027

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency										Date: April 2022		
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	375.506	30.815	30.095	21.789	-	21.789	22.657	22.465	22.253	22.929	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.

A. Mission Description and Budget Item Justification

PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: 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 across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; Facilities Sustainment, Restoration and Modernization (FSRM) program, (formerly Real Property Maintenance) to keep the Department's inventory of facilities in good working order; and similar operating expenses. PWS is allocated on a pro-rata basis across most Agency PEs and therefore fluctuates per PE by fiscal year based on the total Agency budget in that fiscal year.

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

	FY 2021	FY 2022	FY 2023
Title: Program Wide Support	30.815	30.095	21.789
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire MDS. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the MDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes personnel to support global deployments performing deployment site preparation and activation, and provides facility capabilities for MDA Executing Agent locations worldwide. Other MDA wide costs include: physical and technical security; civilian drug testing; audit readiness; the STEM program; legal services and settlements; travel and agency training; office, equipment, vehicle, and warehouse leases; utilities and base operations across multiple geographic locations; commercial and ancillary facility services; management of all facility aspects regardless of lifecycle stage; supplies and maintenance; compliance with statutory environmental requirements; data and unified communications support; materiel and readiness and central property management of equipment; the FSRM program (formerly Real Property Maintenance) to keep the Department's			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Missile Defense Agency	Date: April 2022
--	-------------------------

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023
inventory of facilities in good working order; and similar operating expenses. PWS is allocated on a pro-rata basis across most Agency PEs and therefore fluctuates per PE by fiscal year based on the total Agency budget in that fiscal year.			
<i>FY 2022 Plans:</i> - SEE ABOVE.			
<i>FY 2023 Plans:</i> - SEE ABOVE.			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> Decrease from FY 2022 to FY 2023 reflects the PWS allocation on a pro-rata basis across multiple Agency PE's each fiscal year based on the total Agency budget, and therefore fluctuates per PE by fiscal year.			
Accomplishments/Planned Programs Subtotals	30.815	30.095	21.789

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

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Missile Defense Agency **Date:** April 2022

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

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	Various : Various	0.000	0.000		0.000		0.239	Nov 2022	-		0.239	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	3.662	0.000		0.000		0.000		-		0.000	0.000	3.662	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries	Various	MDA : Multi: AK, AL, CO, CA, VA	295.041	25.101	Oct 2020	30.095	Oct 2021	17.826	Oct 2022	-		17.826	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	31.131	0.237	Oct 2020	0.000		0.924	Nov 2022	-		0.924	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	40.982	5.477	Jul 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/CPFF	021 - CDSA DAM NECK - DODN63273 : TBD	0.000	0.000		0.000		2.800	Nov 2022	-		2.800	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	4.690	0.000		0.000		0.000		-		0.000	0.000	4.690	0.000
Subtotal			375.506	30.815		30.095		21.789		-		21.789	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	375.506	30.815	30.095	21.789	-	21.789	Continuing	Continuing	N/A

Remarks
Award Date reflects date of first obligation. Additional obligations may incrementally occur throughout the year.

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Missile Defense Agency **Date:** April 2022

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2021	4	2027