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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	5,296.966	587.689	554.201	569.662	-	569.662	570.632	587.929	618.050	651.885	Continuing	Continuing
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	3,351.148	370.102	336.417	342.318	-	342.318	335.968	342.430	367.759	394.504	Continuing	Continuing
MC01: <i>Cyber Operations</i>	92.055	8.194	8.261	8.189	-	8.189	8.344	8.511	8.683	8.857	Continuing	Continuing
MT01: <i>C2BMC Test</i>	543.488	57.587	51.849	57.926	-	57.926	59.930	67.170	65.556	66.869	Continuing	Continuing
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	1,093.956	129.802	138.665	139.480	-	139.480	142.259	145.342	148.249	151.214	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	216.319	22.004	19.009	21.749	-	21.749	24.131	24.476	27.803	30.441	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

The increase from FY 2024 to FY 2025 provides for the establishment of secure and resilient networks/communications connections for the Defense of Guam.

A. Mission Description and Budget Item Justification

The C2BMC program is the integrating element of the Missile Defense System. It is a vital operational system that enables the U.S. President, Secretary of Defense and Combatant Commanders at strategic, regional and operational levels to systematically plan missile defense operations, to collectively see the battle develop, and to dynamically manage designated networked sensors and weapons systems to achieve global and regional mission objectives. Systems linked through C2BMC include Patriot, Terminal High Altitude Area Defense, Aegis Ballistic Missile Defense, Aegis Ashore, Ground-based Midcourse Defense, Army Integrated Air and Missile Defense Battle Command System, and sensors such as the Army Navy/Transportable Radar Surveillance and Control-2 Radar, Sea-Based X-Band Radar, Long Range Discrimination Radar, Homeland Defense, Space-Based Infrared System, and Ballistic Missile Defense Systems Overhead Persistent Infrared Architecture. The C2BMC program also works to increase coalition partners' capabilities and investigates concepts and explores system engineering issues associated with innovative space applications for a missile defense intercept and defeat system. C2BMC begins support to integrate existing sensor elements within Missile Defense Agency (MDA) and the Services into the Ballistic Missile Defense System Communications Network to establish a globally integrated sensor architecture to provide enhanced, dynamic space capabilities, and extend existing Ballistic Missile Defense System Communications Network and cybersecurity management to cover the expanded architecture. Under the MDA's Defense of Guam Program, the C2BMC program is integrating Missile Defense and Joint systems, establishing an expeditionary and permanent Command Center and providing required communication support throughout the island.

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	589.374	554.201	574.275	-	574.275
Current President's Budget	587.689	554.201	569.662	-	569.662
Total Adjustments	-1.685	0.000	-4.613	-	-4.613
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-7.684	0.000			
• Other Adjustment	5.999	0.000	-4.613	-	-4.613

Change Summary Explanation

The decrease in FY 2025 from PB 2024 to PB 2025 reflects the rephrasing of C2BMC support for Guam architecture and schedule as part of the Pacific Deterrence Initiative (PDI).

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency										Date: March 2024		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>				Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	3,351.148	370.102	336.417	342.318	-	342.318	335.968	342.430	367.759	394.504	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Provides incremental development, deployment, and operational support of C2BMC capabilities required for Missile Defense System planning, situational awareness, sensor management, and engagement coordination. The FY 2019 National Defense Authorization Act section 869 recognized C2BMC for its implementation of this iterative practice and directed C2BMC's inclusion in a Community of Practice to advise on agile or iterative development.

C2BMC delivers capabilities incrementally with each software build (named as a Spiral or Capability Build), adding to or enhancing the capability of the previous build. C2BMC incremental delivery of Spiral 8.2 provides critical Homeland Defense for increased Ground-based Midcourse Defense (GMD) battlespace, improved threat tracking using multiple sensors communicating via Link 16, enhanced sensor tasking to meet track quality and discrimination timeliness requirements, Space Domain Awareness (SDA) tasking support, and improved cyber capabilities. Enhanced Homeland Defense also integrates the Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA) with the Missile Defense System to enhance system level missile-tracking capabilities through earlier cueing of radars and weapon systems.

European Phased Adaptive Approach Phase 3/Engage-on-Remote (EOR) (Spiral 8.2-3) provides critical sensor management capability, greater engagement flexibility, improved OPIR-based cueing, and enhanced Aegis Ballistic Missile Defense (BMD) defended area by enabling Aegis to use Army Navy/Transportable Radar Surveillance and Control-2 Radar (AN/TPY-2) data for EOR engagements, providing a five-fold increase in defended area coverage in the US Central Command and US European Command area of responsibility compared to individual weapon system organic capability. Spiral 8.2-3 also includes SDA and integrates Mobile Sensor Integration Phase 1 and BOA data into the Missile Defense System.

Long Range Discrimination Radar (LRDR) Control for Homeland Defense Increment 6B.1/6B.2 (Spiral 8.2-5) enables increased homeland and regional defense by providing LRDR sensor management, creation and dissemination of a BMD System track inclusive of LRDR sensor data, hypersonic threat tracking, significant capability expansion of track and reporting Advance Threats for warfighter SDA; implements Link-16 reporting, integration of system level discrimination data, transmission of LRDR-based information to GMD Fire Control and other Missile Defense System elements; and operationalization of Space-based Kill Assessment (SKA) hit assessment for Homeland Defense.

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Expanded Regional and Homeland Defense Increment 7 (Spiral 8.2-7) will provide BMDS System Track (BST) with System Level Discrimination Integration for GMD engagements; Expanded Active Sensor Bias Monitoring and Full Reporting; Refined Space and Intelligence Data; Expanded Hypersonic Tracking and Link-16 Reporting and Enhanced Aegis BMD Space Domain Awareness.

Expanded Defense of Guam will provide C2BMC and BOA support to Guam including a C2BMC Downloadable Unified Client (DUC) on Island and Cruise Missile Indications and Warnings while preparing for Enhanced Integrated Air and Missile Defense upgrades for Guam defense.

Increased BOA Raid Handling Increment 8/9 (BOA 8.1) will integrate and process additional OPIR sensors as well as improve performance to support detection and tracking of increased threat capabilities.

Integration of GMD Next Generation Interceptor and Initial Homeland Defense Threat Space Increment 10 will support GMD with BST, Sensor Resource Management, Battle Management, and System Level Discrimination to support integration of new GMD interceptor with initial updated homeland ballistic missile threat space for GMD engagements.

Additional Ballistic Missile Defense of Guam Increment 11 to support integration of Aegis Guam Weapon System including Guam Radar with established on-island systems with on-island C2BMC mission node to enable secure and resilient communications.

C2BMC continues to develop incremental improvements to the Missile Defense System to keep pace with emerging threats worldwide by investing in the development, integration, and testing of advanced algorithms to improve track and discrimination capabilities and enhancing use of space based sensor data from sources such as the Space Based Infrared System, using the BMDS OPIR architecture. Related disciplines provide development and deployment support to C2BMC system capabilities. In support of Hypersonic Defense, C2BMC will provide contingency capability to demonstrate, develop and deploy a detection and warning for advanced threats. C2BMC continues Protected Anti-Jam/Anti-Scintillation Wideband Net-Centric System (PAAWNS) modem integration, installations, and technical refresh globally of the threat based communication network modernization against the advanced threat, while maintaining efficiencies in cost.

C2BMC International Partner system engineering ensures allies and partners are integrated to the fullest extent possible with U.S. Missile Defense System capabilities. Collaborative system engineering, testing, and fielding facilitate interoperability with North Atlantic Treaty Organization (NATO) and partner nations such as Israel and Japan. C2BMC works with these nations to define and document international interfaces that are compatible with international standards and traceable to U.S. Missile Defense System requirements. C2BMC participates in test events and live fire exercises hosted by international partners to ensure U.S. missile defense weapons, sensors, and Space Command and Control (C2) systems are interoperable with international systems. C2BMC maintains and upgrades the U.S./NATO secure data sharing gateways located at Ramstein Air Base, Germany, for missile defense operations and training. C2BMC also supports development of Japan's BMD requirements to ensure interoperability of Japanese and U.S. BMD systems (sensors, shooters, C2) resulting in an integrated regional, operational, and strategic defense of Japan.

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C2BMC Modeling and Simulation (M&S) maintains Missile Defense System simulation/stimulation tools and federated models to support development and verification of deployed C2BMC and BOA Spirals. The BMDS C2BMC Model (BCM) is used for Flight Test pre-mission analysis and exercises to represent a second C2 Suite for Cross-Area of Responsibility functionality, Early Digital Product for C2BMC performance assessment, and supports development and integration of GMD, AN/TPY-2, and Aegis software and models. The OPIR sensor M&S is used in the Ground Test Integrated System-level Simulation as the stimulus for BOA. The BCM program provides a cost effective means to assess and explore the performance space of the Missile Defense System beyond what can be physically tested via Flight Tests and Target of Opportunity collections.

C2BMC develops, integrates, and tests advanced algorithms to improve discrimination capabilities and enhance the use of space-based sensor data. In support of Missile Defense Agency (MDA) discrimination improvements effort, C2BMC demonstrates, develops, and deploys multiple techniques to improve BMD System ability to identify lethal and non-lethal objects.

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

	FY 2023	FY 2024	FY 2025
<p>Title: C2BMC Development and Deployment</p> <p align="right">Articles:</p> <p>Description: Provides funding for incremental development and deployment of C2BMC capabilities that link sensors and shooters to enable integrated Missile Defense System capabilities, integrate BOA with the Missile Defense System architecture to enhance missile tracking capabilities and enable much earlier cueing of radars and shooters, and fulfill Cybersecurity requirements. The Enterprise Sensors Laboratory (ESL) and Experimentation Laboratory produce key prototypes for further maturation in the C2BMC capability Spiral development process and enable integrated experimentation for C2BMC, ESL, OPIR products, and other Missile Defense System elements through robust connectivity to simulation frameworks, weapon systems, sensors, and operational assets. Expand capability to track and report Advanced Threats for warfighter Situational Awareness. Expanding SDA tasking and reporting to include AN/TPY-2, LRDR, and Aegis sensors.</p> <p>Recurring accomplishments include iterative development and procurement cycles for hardware, software, network capability system engineering tasks, and artifacts for technical engineering reviews; participation in test readiness reviews, pre-test engineering, and analysis of ground and flight test results, wargames, and exercises in accordance with the Missile Defense System Integrated Master Test Plan; site planning, scheduling, and hardware acquisition to support planned deployment of C2BMC Spirals/Capability Builds and BOA capabilities; updates and maintenance for BCM Missile Defense System simulation/stimulation (federated model) and verification scenarios for all C2BMC Spirals deployed and under development; Discrimination, operationalization of SKA Hit Assessment, and C2BMC capabilities; design and installation of operational sharing gateways; and collaboration with international partners to ensure future interoperability; and maintain Verification and Validation in support of Missile Defense System capability ground testing and participation in Missile Defense System ground tests. C2BMC will continue to design and prototype the next incremental capability addressing additional Homeland Defense and Mid-Term Discrimination requirements, inclusive of C2BMC Generation of BMD System Track (with System Level Discrimination Data Integration) for GMD</p>	<p>316.829</p> <p align="center">-</p>	<p>262.715</p> <p align="center">-</p>	<p>263.163</p> <p align="center">-</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>Homeland Defense Engagements and Expanded Regional and Homeland Defense, and an expanded interface with the OPIR enterprise, which yields additional raid handling capacity, enhanced Aegis BMD engage on capability, and expanded hypersonic defense tracking and reporting.</p> <p>C2BMC will begin to integrate existing MDA and Service elements with C2BMC and the Ballistic Missile Defense System Communications Network (BCN) to establish a globally integrated sensor architecture to provide enhanced, dynamic space capabilities, and extend existing BCN network and cybersecurity management to cover the expanded architecture. The expanded sensor architecture will integrate ground-based radars from the U.S. Space Force Space Surveillance Network, orchestrated by C2BMC, and develop algorithms to fuse and/or correlate the data provided by these sensors in support of missile defense and space C2 missions.</p> <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2024 Plans: LRDR for Homeland Defense (Spiral 8.2-5), homeland defense focus: - Continue operations and sustainment of Spiral 8.2-5 capabilities</p> <p>C2BMC Additional and Expanded Regional and Homeland Defense focus: - Continue development of next iteration BOA in support of updated raid performance needed for Increment 8/9 - Initiate development of next iteration of C2BMC to include integration with Next Generation Interceptor and incorporation of new algorithms and performance needed for updated ballistic missile threat space for GMD engagements</p> <p>FY 2025 Plans: - Incorporate updated raid performance in BOA development needed for Increment 8/9 - Continue BOA development to incorporate C2BMC enhancements for Next Generation Interceptor integration and incorporation of new algorithms to support performance needed for updated ballistic missile threat space for GMD engagements</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: N/A</p>			
<p>Title: C2BMC Communications</p> <p align="right">Articles:</p>	34.062 -	35.212 -	25.687 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>Description: The BCN ties together an expanding set of sensors and weapons systems to enable the National Command Authority and the commanders at the strategic, theater, and tactical levels to optimally engage missile threats. Recurring accomplishments include the following:</p> <ul style="list-style-type: none"> - Provide GMD Communications Network (GCN) Long Haul Communications Transport services and a robust, end-to-end, high availability, operational communications network infrastructure with diverse paths that quickly and unambiguously share information across the global Missile Defense System - Provide Missile Defense System communications via leased Defense Information Service Agency (DISA) circuits, and resolve real-time operational issues through DISA's Network Operations and Security Center - Provide effective network management to coordinate and integrate information across diverse equipment platforms, interface with other Department of Defense (DoD) communications systems, evolve information standards and capabilities, and adhere to the DoD Risk Management Framework - Complete the architecture design to establish BCN connectivity for Reagan Test Site and improve communications by adding a diverse, faster network around the Atoll. Assets to be connected include the Advanced Research Projects Office Long-Range Tracking and Instrumentation Radar, Space Fence, and Ground-Based Radar at Kwajalein Atoll. - Complete C-Band upgrade of terminals on the Sea-Based X-Band Radar (SBX). The Ka-Band terminal upgrade is scheduled to complete in Nov 2023. - Continue upgrade and technical refresh of the PAAWNS threat based communication network against the advanced threat of nuclear capabilities, while maintaining efficiencies in cost - Upgrade BCN capability by supporting all DoD teleports to enhance satellite communications - Complete circuit testing and turnover of GCN Modernization circuits for 14 of 14 GMD sites - Continue acquiring additional network circuits to support the threat based communication network modernization - Continue PAAWNS modem testing integration and installations globally - Continue GCN refresh from legacy to Optical equipment - Deploy two Hardened Transport Terminals-MDA to Site 512 and Japan - Continue to procure Wideband Uplink (WU) via Starshield to increase communications to SBX to help with WU curve at higher latitudes <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Complete upgrade and integration of AN-TPY/2 High-Altitude Electromagnetic Pulse Hardened Transport Terminals (HEMPHTT) for increased protection of satellite communication systems at relevant sites 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>- Continue to support buildout of C2BMC nodes</p> <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Initiate PAAWNS Gen III development - Continue to support planning, requirements development, and installation of communications nodes for future Lighthouse and SDA sites <p>FY 2024 to FY 2025 Increase/Decrease Statement: Decrease from FY 2024 to FY 2025 reflects the completion of upgrades and integration of AN-TPY/2 HEMPHTTs at AN/TPY-2 sites to post fielding sustainment beginning in FY 2025</p>			
<p>Title: Guam Defense C2BMC</p> <p align="right">Articles:</p>	19.211	38.490	53.468
<p>Description: Deploy C2BMC BCN to support Guam defense to provide ballistic and hypersonic threat typing, tracking, reporting and integrating with Initial Integrated Air and Missile Defense Battle Command System and Aegis Weapon System. BOA updates to support regional raid tracking. Enterprise Sensor Processing Node (ESPN) to provide cruise missile typing, warning, and tracking. Integrate requirements for the Command Center and provide its common equipment. Initiate resilient networks/communications connections for the Defense of Guam. Upgrade C2BMC and BOA to include support of a C2BMC Mission Node on Island and enhanced BOA Raid capacity with traditional and advanced threats. This project supports the Pacific Deterrence Initiative.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continue Initial Deployment including a C2BMC DUC on island and ESPN Cruise Missile Indications and Warnings - Continue Command Center planning and design, to include outfitting of common equipment for Initial Deployment Expeditionary Command Center and permanent Command Center - Initiate simulation/stimulation enablers and associated training capabilities <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Continue support of ESPN capabilities - Continue Command Center planning and design - Establish secure and resilient networks/communications connections for the Defense of Guam - Continue BOA development for theater threat space - Continue C2BMC development, integration and testing <p>FY 2024 to FY 2025 Increase/Decrease Statement:</p>	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
The \$15 million Pacific Deterrence Initiative increase from FY2024 to FY2025 provides for the establishment of secure and resilient networks/communications connections for the Defense of Guam			
Accomplishments/Planned Programs Subtotals	370.102	336.417	342.318

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

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	194.264	220.311	367.279	-	367.279	543.868	554.429	464.018	314.936	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	670.808	903.633	768.227	-	768.227	856.218	842.985	956.974	1,007.150	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors Enabling Programs</i>	228.807	239.159	209.002	-	209.002	205.087	202.555	209.816	214.110	Continuing	Continuing
• 0603890C: <i>BMD</i>	589.588	597.720	609.406	-	609.406	623.893	625.985	659.983	677.858	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	586.329	693.727	649.255	-	649.255	602.818	539.786	649.556	714.388	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	47.629	50.549	54.525	-	54.525	56.851	58.115	59.600	61.362	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	163.297	177.868	197.339	-	197.339	176.888	162.741	177.598	188.253	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	376.650	360.455	367.491	-	367.491	418.514	383.362	435.626	438.825	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	572.380	570.258	604.708	-	604.708	584.070	429.635	515.282	584.771	Continuing	Continuing
• 0604102C: <i>Guam Defense Development</i>	383.252	397.578	415.794	-	415.794	247.793	183.214	303.003	218.941	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	513.267	208.997	182.283	-	182.283	193.100	205.122	250.208	327.698	Continuing	Continuing
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	65.991	103.517	100.882	-	100.882	63.560	56.020	64.457	72.759	Continuing	Continuing

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• 0604874C: <i>Improved Homeland Defense Interceptors</i>	1,795.728	2,130.838	1,697.121	-	1,697.121	1,034.859	1,406.953	625.913	404.970	Continuing	Continuing

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the systems engineering, M&S, development, testing, fielding, and cybersecurity development support of the C2BMC system. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Additionally, other government agencies provide support to include DISA for C2BMC worldwide long-haul communications and various performers for modeling & simulation and independent verification and validation. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center, and Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Furthermore, a sole source Specialized Warfighter Development Contract was awarded to Northrop Grumman in March 2018 (3-year base and 2 one-year option periods) for continuation of the systems engineering, development, test and integration for BOA. The BOA Follow-on sole source contract was awarded in 3rd quarter FY 2023 with a 5-year period of performance.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
C2BMC Development and Deployment - Aggregated Discrim	Various	Various : Various	72.268	1.892	Nov 2022	6.634	Nov 2023	3.517	Nov 2024	-		3.517	Continuing	Continuing	Continuing
C2BMC Development and Deployment - BMDS C2BMC Model (BCM) - Integration	SS/CPAF	LOCKHEED MARTIN CORPORATION : Various	15.565	1.033	Nov 2022	0.498	Oct 2023	0.387	Nov 2024	-		0.387	Continuing	Continuing	Continuing
C2BMC Development and Deployment - BOA OPIR Stimulation M&S - (SciTec)	C/CPAF	SCITEC INC : NJ	3.573	1.576	Nov 2022	1.562	Nov 2023	0.674	Nov 2024	-		0.674	Continuing	Continuing	Continuing
C2BMC Development and Deployment - BOA Simulation Development and Integration	SS/CPAF	NORTHROP GRUMMAN : CO	3.877	0.000		0.000		0.000		-		0.000	3.877	7.754	0.000
C2BMC Development and Deployment - C2BMC Hardware/Software Development, Integration & Test (I&T)	SS/CPAF	LOCKHEED MARTIN CORPORATION : Various	1,245.583	144.878	Dec 2022	84.012	Dec 2023	88.140	Dec 2024	-		88.140	Continuing	Continuing	Continuing
C2BMC Development and Deployment - C2BMC Integration	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	193.220	6.194	Nov 2022	8.716	Nov 2023	4.992	Nov 2024	-		4.992	Continuing	Continuing	Continuing
C2BMC Development and Deployment - C2BMC Prior Year	Various	Various : Various	105.382	0.000		0.000		0.000		-		0.000	101.381	206.763	0.000
C2BMC Development and Deployment - ESL/BOA Development	SS/CPAF	NORTHROP GRUMMAN : CO	102.721	52.448	Nov 2022	46.429	Oct 2023	23.842	Oct 2024	-		23.842	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
C2BMC Development and Deployment - ESL/BOA Development (LM)	SS/CPIF	LOCKHEED MARTIN CORPORATION : Various	0.000	0.000		0.000		4.687	Oct 2024	-		4.687	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center (Aerospace)	FFRDC	DOD - USSF - SPACE AND MISSILE SYSTEMS CENTER (SMC) : Various	16.659	0.895	Jan 2023	0.984	Oct 2023	1.004	Oct 2024	-		1.004	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center (GTRI)	FFRDC	GTRI (Georgia Tech Research Institute) : Various	0.000	3.934	Nov 2022	4.013	Oct 2023	4.093	Oct 2024	-		4.093	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center (IDA)	FFRDC	DOD - WASHINGTON HEADQUARTERS SERVICES (WHS) ACQUISITION DIRECTORATE (AD) : Various	33.903	1.142	Jan 2023	2.555	Oct 2023	2.595	Oct 2024	-		2.595	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center (JHU/APL)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : Various	94.075	2.297	Dec 2022	3.832	Oct 2023	3.901	Oct 2024	-		3.901	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Federally Funded Research & Development Centers /	FFRDC	DOD - USAF - AIR FORCE LIFE CYCLE MANAGEMENT	13.090	2.440	Jan 2023	3.134	Oct 2023	3.254	Oct 2024	-		3.254	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>				Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>							

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
University Affiliated Research Center (MIT/LL)		CENTER (AFLCMC) : Various													
C2BMC Development and Deployment - Federally Funded Research & Development Centers / University Affiliated Research Center (NSEC)	FFRDC	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : Various	91.787	4.953	Nov 2022	3.203	Oct 2023	3.281	Oct 2024	-		3.281	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis (CCDC AvMC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	13.673	6.043	Nov 2022	7.368	Nov 2023	7.092	Nov 2024	-		7.092	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis (NSWC)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	2.222	Nov 2022	2.102	Oct 2023	2.460	Oct 2024	-		2.460	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis (SAF/FMBI)	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, DIRECTOR FOR BUDGET INVESTMENT (SAF/FMBI) : Various	0.000	1.150	Nov 2022	1.147	Oct 2023	1.170	Oct 2024	-		1.170	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Independent Performance Assessment and Analysis -Various	Various	Various : Various	16.398	1.756	Jan 2023	1.246	Oct 2023	1.690	Oct 2024	-		1.690	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>				Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>							

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
C2BMC Development and Deployment - Joint Early Warning Lab (JEWL) and C2BMC Lab Build Out	C/CPAF	JACOBS TECHNOLOGY INC. : CO	10.306	10.787	Mar 2023	8.803	Nov 2023	8.202	Nov 2024	-		8.202	Continuing	Continuing	Continuing
C2BMC Development and Deployment - MDA Civilian, Travel & PCS	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : Various	249.085	23.564	Oct 2022	24.081	Oct 2023	24.651	Oct 2024	-		24.651	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Models & Simulation	SS/CPIF	LOCKHEED MARTIN CORPORATION : Various	19.554	0.506	Nov 2022	1.462	Oct 2023	4.118	Oct 2024	-		4.118	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Spiral Development	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	0.000	0.305	Oct 2022	0.000		6.986	Oct 2024	-		6.986	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Spiral Development (NG)	SS/CPAF	NORTHROP GRUMMAN : CO	0.000	1.469	Dec 2022	0.000		7.386	Oct 2024	-		7.386	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Spiral Development (SNL)	MIPR	Sandia National Laboratories, New Mexico (SNL) : Various	13.785	0.800	Nov 2022	4.342	Oct 2023	0.740	Oct 2024	-		0.740	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Spiral Development (TBD)	TBD	TBD : TBD	0.000	0.000		0.000		2.656	Oct 2024	-		2.656	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Spiral Development (Various)	Various	Various : Various	0.000	0.000		0.000		5.307	Oct 2024	-		5.307	Continuing	Continuing	Continuing
C2BMC Development and Deployment - X Lab	C/CPIF	LOCKHEED MARTIN CORPORATION : AL	17.339	5.485	Feb 2023	6.734	Oct 2023	7.273	Oct 2024	-		7.273	Continuing	Continuing	Continuing
C2BMC Communications - C2BMC Prior Year	Various	Various : Various	145.517	0.000		0.000		0.000		-		0.000	145.517	291.034	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency												Date: March 2024		
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>				Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>				

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
C2BMC Communications - Communication Equipment and Fielding (DISA)	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	94.731	7.481	Jan 2023	7.339	Jan 2024	9.711	Jan 2025	-		9.711	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding (Harris)	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : VA	59.366	4.669	Jan 2023	4.508	Jan 2024	3.767	Jan 2025	-		3.767	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding (JHU-APL)	FFRDC	JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LLC, THE : VA	21.771	2.085	Jan 2023	1.700	Jan 2024	1.025	Jan 2025	-		1.025	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding (LM)	C/CPAF	LOCKHEED MARTIN CORPORATION : Various	0.000	7.547	Jan 2023	9.333	Jan 2024	1.509	Jan 2025	-		1.509	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding (PAAWNS)	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : VA	51.404	1.628	Jan 2023	4.195	Jan 2024	1.500	Jan 2025	-		1.500	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding (PMDCATS)	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE	0.000	0.752	Jan 2023	1.500	Jan 2024	1.500	Jan 2025	-		1.500	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>				

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
		COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : PA													
C2BMC Communications - Communication Equipment and Fielding (Tobyhanna)	MIPR	DOD - USA - TOBYHANNA ARMY DEPOT (TYAD) : VA	23.670	3.766	Jan 2023	1.505	Jan 2024	1.127	Jan 2025	-		1.127	Continuing	Continuing	Continuing
C2BMC Communications - Communication Leases	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	74.003	6.134	Jan 2023	5.132	Oct 2023	5.548	Oct 2024	-		5.548	Continuing	Continuing	Continuing
Guam Defense C2BMC - C2BMC Hardware/ Software Development, Integration & Test (I&T) (User Node Phase I)	SS/CPPIF	LOCKHEED MARTIN CORPORATION : Various	0.000	2.779	Nov 2022	6.733	Nov 2023	10.457	Nov 2024	-		10.457	Continuing	Continuing	Continuing
Classified - Classified Program	MIPR	Various : Various	87.865	0.000		0.000		0.000		-		0.000	87.865	175.730	0.000
Guam Defense C2BMC - Communication Equipment and Fielding	MIPR	DOD - DEFENSE INFORMATION SYSTEMS AGENCY (DISA) : VA	0.000	0.400	Nov 2022	21.321	Nov 2023	26.761	Nov 2024	-		26.761	Continuing	Continuing	Continuing
Guam Defense C2BMC - ESPN/ESL/BOA Development	C/CPFF	NORTHROP GRUMMAN : CO	0.000	13.600	Nov 2022	5.962	Nov 2023	10.878	Nov 2024	-		10.878	Continuing	Continuing	Continuing
Guam Defense C2BMC - MDA Civilian, Travel & PCS	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) : AL	0.000	0.450	Oct 2022	0.000		0.895	Oct 2024	-		0.895	Continuing	Continuing	Continuing
Guam Defense C2BMC - Upgrade C2BMC Battle Management Decision Aids, Planners	C/CPFF	SCITEC INC : Various	0.000	0.729	Nov 2022	0.000		0.000		-		0.000	0.861	1.590	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>				Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>							

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
and Algorithms - ESPN Development															
Cruise Missile Defense for Homeland - Cruise Missile Defense for Homeland	MIPR	DOD - USAF - SECRETARY OF THE AIR FORCE, FINANCIAL MANAGEMENT (SAF/FM) : Various	36.200	0.000		0.000		0.000		-		0.000	0.000	36.200	0.000
Subtotal			2,926.370	329.789		292.085		298.776		-		298.776	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
C2BMC Development and Deployment - IT User Services - IRES	C/CPAF	JACOBS TECHNOLOGY INC. : Various	20.247	5.843	Mar 2023	6.341	Nov 2023	6.507	Nov 2024	-		6.507	Continuing	Continuing	Continuing
Subtotal			20.247	5.843		6.341		6.507		-		6.507	Continuing	Continuing	N/A

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>				

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
C2BMC Development and Deployment - Contract Support Services (BCF Solutions)	C/CPFF	BCF SOLUTIONS, INC. : AL	16.432	0.931	Nov 2022	1.384	Nov 2023	1.412	Nov 2024	-		1.412	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services (BlueHalo)	C/CPFF	BLUEHALO : AL	0.000	1.308	Nov 2022	1.340	Nov 2023	0.294	Nov 2024	-		0.294	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services (Millennium Eng)	C/CPFF	MILLENNIUM CORPORATION : AL	54.414	3.263	Nov 2022	4.260	Nov 2023	4.345	Nov 2024	-		4.345	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services (Parsons)	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : Various	319.784	24.194	Nov 2022	22.341	Nov 2023	22.232	Nov 2024	-		22.232	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services (Veterans Technology)	C/CPFF	Veterans Technology, LLC : AL	0.000	1.261	Nov 2022	1.121	Nov 2023	1.143	Nov 2024	-		1.143	Continuing	Continuing	Continuing
C2BMC Development and Deployment - Contract Support Services (Yorktown)	C/CPFF	YORKTOWN SYSTEMS GROUP, INC. : Various	0.000	0.696	Nov 2022	0.000		1.001	Nov 2024	-		1.001	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
C2BMC Development and Deployment - Contract Support Services - Various	C/CPFF	Various : Various	13.901	1.564	Nov 2022	3.071	Nov 2023	2.131	Nov 2024	-		2.131	Continuing	Continuing	Continuing
Guam Defense C2BMC - Contractor Support Services	C/CPFF	Various : Various	0.000	1.253	Nov 2022	4.474	Nov 2023	4.477	Nov 2024	-		4.477	Continuing	Continuing	Continuing
Subtotal			404.531	34.470		37.991		37.035		-		37.035	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,351.148	370.102	336.417	342.318	-	342.318	Continuing	Continuing	N/A

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
MD01 Command & Control, Battle Management, Communications (C2BMC) Planned	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
C2BMC and BOA Incremental Engineering Technical Reviews (IETR) Planned	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Spiral 8.2-5 Homeland Defense Capability Declaration USNORTHCOM/USINDOPACOM			▲																									
BOA 7.1.0 OCB			▲																									
Spiral 8.2-5 Homeland Defense Capability Declaration USEUCOM/USCENTCOM				▲																								
BOA 7.1.1 OCB								△																				
Downloadable Unified Client S8.2-5.1/BOA 7.0								△																				
BOA 7.1.2 OCB								△																				
Spiral 8.2-7 Expanded Regional and Homeland Defense Capability Declaration USNORTHCOM/USINDOPACOM												△																
Spiral 8.2-7 Expanded Regional and Homeland Defense Capability Declaration USEUCOM/USCENTCOM													△															
Mission Node on Guam S8.2-7/BOA 8.1 w/Raid																								△				

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD01 Command & Control, Battle Management, Communications (C2BMC) Planned	1	2023	4	2028
C2BMC and BOA Incremental Engineering Technical Reviews (IETR) Planned	1	2023	4	2028
Spiral 8.2-5 Homeland Defense Capability Declaration USNORTHCOM/USINDOPACOM	3	2023	3	2023
BOA 7.1.0 OCB	3	2023	3	2023
Spiral 8.2-5 Homeland Defense Capability Declaration USEUCOM/USCENTCOM	1	2024	1	2024
BOA 7.1.1 OCB	3	2024	3	2024
Downloadable Unified Client S8.2-5.1/BOA 7.0	4	2024	4	2024
BOA 7.1.2 OCB	1	2025	1	2025
Spiral 8.2-7 Expanded Regional and Homeland Defense Capability Declaration USNORTHCOM/USINDOPACOM	1	2026	1	2026
Spiral 8.2-7 Expanded Regional and Homeland Defense Capability Declaration USEUCOM/USCENTCOM	3	2026	3	2026
Mission Node on Guam S8.2-7/BOA 8.1 w/Raid	3	2028	3	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
MC01: <i>Cyber Operations</i>	92.055	8.194	8.261	8.189	-	8.189	8.344	8.511	8.683	8.857	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Command and Control, Battle Management & Communication (C2BMC) Cyber Operations sustain the Missile Defense Agency (MDA) Risk Management Framework (RMF) and Security Controls Assessments/Controls Validation Testing activities, analysis of validation results, risk assessments, and reviews of proposed Program Manager/Information System Security Manager Plan of Action and Milestones (POA&Ms) and Cybersecurity Tools for MDA C2BMC mission systems. Activities in this Project are necessary to comply with the Federal Information Systems Modernization Act.

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

	FY 2023	FY 2024	FY 2025
Title: Network / System Certification and Accreditation (C&A)	8.194	8.261	8.189
Articles:	-	-	-
<p>Description: This activity maintains the Assessment and Authorization and C&A data repository, capturing the RMF documentation (artifacts, validation results, Information Assurance Risk Assessment results, and Authorizing Official (AO) accreditation decisions) and POA&Ms on all MDA information systems. This activity prepares and submits C&A documentation and accreditation recommendations to the MDA Chief Information Officer/ Security Controls Assessor and the AO. Leverages Cross Domain Solution as single authority implementing standard security policies for C2BMC across the Ballistic Missile Defense System. Independent Verification and Validation team actions ensure the availability, integrity, authentication, confidentiality, and non-repudiation of the MDA mission, test, and administrative systems.</p> <ul style="list-style-type: none"> - Conduct cybersecurity design, engineering, and architecture planning for C2BMC information technology systems - Plan and test the cybersecurity controls for C2BMC systems - Conduct Security Controls Assessment testing continuous monitoring of C2BMC mission systems and provide POA&Ms to mitigate cybersecurity vulnerabilities <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2024 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
- SEE ABOVE.			
<i>FY 2025 Plans:</i> - SEE ABOVE.			
<i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> N/A			
Accomplishments/Planned Programs Subtotals	8.194	8.261	8.189

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

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with cybersecurity operations support of the C2BMC system. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Additionally, various MDA government personnel and Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Furthermore, a sole source Specialized Warfighter Development Contract was awarded to Northrop Grumman in March 2018 (3-year base and 2 one-year option periods) for continuation of cybersecurity operations support for Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA). The BOA Follow-on sole source contract was awarded in 3rd quarter FY 2023 with a 5-year period of performance.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MC01 / <i>Cyber Operations</i>						

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - All Prior Years	Various	Various : Various	22.454	0.000		0.000		0.000		-		0.000	22.454	44.908	0.000
Network / System Certification and Accreditation (C&A) - C2BMC Core	SS/CPAF	LOCKHEED MARTIN CORPORATION : Various	59.743	5.828	Nov 2022	6.383	Oct 2023	6.596	Oct 2024	-		6.596	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Civilian Salaries	Allot	MDA Other : Various	3.023	0.646	Oct 2022	0.840	Oct 2023	0.537	Oct 2024	-		0.537	Continuing	Continuing	Continuing
Subtotal			85.220	6.474		7.223		7.133		-		7.133	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, contract support services have transferred to appropriate cost categories.

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - Contract Support Services	C/CPFF	Various : Various	6.835	1.720	Nov 2022	1.038	Oct 2023	1.056	Nov 2024	-		1.056	Continuing	Continuing	Continuing
Subtotal			6.835	1.720		1.038		1.056		-		1.056	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	92.055	8.194	8.261	8.189	-	8.189	Continuing	Continuing	N/A

Remarks
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC01 Cyber Operations Planned	1	2023	4	2029
MC01 Incremental Engineering Technical Reviews (IETR) Planned	1	2023	4	2029

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
MT01: <i>C2BMC Test</i>	543.488	57.587	51.849	57.926	-	57.926	59.930	67.170	65.556	66.869	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2024 to FY 2025 is in accordance with the current Integrated Master Test Plan (IMTP).

A. Mission Description and Budget Item Justification

Command and Control, Battle Management and Communications (C2BMC) Test supports system flight and ground testing, wargames, and exercises as detailed in the Missile Defense Agency (MDA) IMTP to ensure C2BMC capabilities delivered are consistent with the Prioritized Capabilities List and are interoperable with other Missile Defense System components.

MDA gains efficiencies and minimizes laboratory resource requirements (footprint, personnel, and hardware) by utilizing the C2BMC Test Facility and the Overhead Persistent Infrared Architecture (OPIR) Capabilities Lab (OCL) test infrastructure as the laboratory environment supporting System Test, Development, and Sustainment. For System Ground and Flight Test, the labs are used for pre-test analysis, test execution, and post-test analysis. For Development, the labs are utilized for software verification and validation testing and system integration testing. For Sustainment, the labs are used to assist with root cause determination for issues discovered on the fielded system and validation of any required software patches.

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

	FY 2023	FY 2024	FY 2025
Title: Integrated Master Test Plan	57.587	51.849	57.926
Articles:	-	-	-
<p>Description: This activity funds C2BMC participation in Missile Defense System flight and ground testing, wargames and exercises, and resources in accordance with the Missile Defense System IMTP. Recurring accomplishments include:</p> <ul style="list-style-type: none"> - Assess Missile Defense System interoperability, integration, and functionality in lab and distributed environments, leveraging a complex set of scenarios to test the limits of the C2BMC system. Participate in and analyze results of ground tests and flight tests in accordance with the Missile Defense System IMTP. Support all phases of the MDA Ground Test Concept of Operations (CONOPS) and the MDA Flight Test CONOPS. Provide Flight Test Predictive Analysis support. Generate, test, and distribute federated model compatible scenarios for Ground Test and Flight Test Experimentation test support. Use Missile Defense System C2BMC Model to support exercise integration testing activities including test case and scenario checkout. - Utilize the Enterprise Sensors Laboratory to plan, coordinate, and provide test operations to demonstrate prototype algorithms through flight tests and United States-launched targets of opportunity. The development plans for algorithm improvements focus on track and measurement level sensor data fusion and feature extraction to improve 3-D track formation utilizing a variety of 			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>space, airborne, and terrestrial-based sensors. Results from the tests and experiments are provided back to the algorithms development activity to enable algorithm refinement.</p> <ul style="list-style-type: none"> - Continue Long Range Discrimination Radar (LRDR) node integration, testing, and training with new C2BMC Spiral 8.2-5 Homeland Defense baseline changes at the Missile Defense Integration and Operation Center (MDIOC). Retain Existing Sensor Data Interfaces and provide LRDR Data for Risk Reduction for Ground-based Midcourse Defense (GMD); Initial Hypersonic Tracking and Reporting; and Cyber Security Enhancements Risk Management Functions. - Utilize the C2BMC Experimentation Laboratory (X-Lab) to plan, coordinate, and provide test operations to demonstrate maturing C2BMC technologies and software builds within an integrated C2BMC environment through flight tests, ground tests, and real-world targets of opportunity before incorporation into formal C2BMC spiral builds. Results from the tests are provided back to the C2BMC and X-Lab development activity. - Participate in wargames and exercises using current and future C2BMC architectures to support all requesting Combatant Commands, North Atlantic Treaty Organization (NATO) partners, and Host Nations allowing warfighters to validate Ballistic Missile Defense (BMD) Techniques, Tactics, and Procedures specific to all designated Areas of Operations to include current and future C2BMC architectures. - Continue development, sustainment, and upgrades in the C2BMC Testbed (CTB) to support MDA IMTP Events (flight and ground tests). Continue Cyber Testing in the CTB to support continuous C2BMC spiral development. Continue Hardware in the Loop testing, C2BMC, and NATO planning exchanges, demonstrations, and support to NATO live fire events. Maintain Situational Awareness Nodes (Turkey, Romania, and Poland) in accordance with U.S. and Host nation Bi-lateral Agreements. Continue to enhance interoperability between U.S. BMD systems and the NATO BMD systems. Provide infrastructure, network, and troubleshooting support to C2BMC Command Center, to include the BMDS Network Operations and Security Center, System Test and Operations Center, C2BMC System Support Center, BMDS Communications Network, the Distributed Training system, and Combined OCL. - Begin to assess interoperability of C2BMC S8.2-7, Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA) 7.1, Army Navy/Transportable Radar Surveillance and Control-2 Radar (AN/TPY-2) Forward Base Mode (FBM) CX 5.0, LRDR 2.0, GS 9, X-Band Radar (XBR) 4.2, Exo-Atmospheric Kill Vehicle (EKV) 24.0/11.0, IBCS 4.6, Post Deployment Build for Patriot (PDB) 8.1, and Terminal High Altitude Area Defense (THAAD) 4.1 - In cyber events: Assess C2BMC and BOA Baseline Revision cyber security in Cooperative Vulnerability and Penetration Assessment events in the lab and operational asset environments; and Adversarial Assessment events in the operational asset environment prior to fielding - Continue upgrades and implementation of latest Department of Defense required Assured Compliance Assessment Solution, Endpoint Security Services, and Cyber Security increments within the CTB including the OCL - Maintain CTB and OCLs to ensure availability for ground and cyber test events - Prepare, configure, and execute IMTP test events, Pairwise, Continuous Developmental Integration, and special test request 			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>- In flight test events: Collect data in support of Hypersonic Tracking capability, to assess C2BMC incremental capability performance, to include support of Space-Based Kill Assessment Hit Assessment fielding; assess alternatives for C2BMC system track typing, correlation, and launch event association processes in the presence of advanced threats. Continue to demonstrate interoperability with Aegis and collect data to assess Aegis European Phased Adaptive Approach Phase 3/Engage-on-Remote capability</p> <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Participate in flight test events to support fielding of Spiral 8.2-5 and BOA 7.0 additional capabilities by testing the following capabilities: IBCS Integration into the Missile Defense System and Conditioning & debris filtering of Mobile Sensor Integration tracks - Participate in ground test events to support fielding of Spiral 8.2-7 and BOA 7.1 BMDS System Track (BST) with System Level Integrated Discrimination (SLD) by testing the following capabilities: Generation of BST with SLD to support GMD Engagements, BOA 7.1 Integration, SDA refinement, Reporting of Space Object Catalog (SOC) entities to AN/TPY-2 (FBM) Radars and LRDR for use in radar calibration, and Expanded Hypersonic Tracking and Link-16 Reporting - Continue to assess interoperability of C2BMC S8.2-5, BOA 7.0, AN/TPY-2 FBM CX 5.0, LRDR 1.0, GS 8B, XBR 4.2, Orbital Boost Vehicle (OBV) 8.0/OBV11.0, IBCS 4.6, PDB 8.1, SBR 22-1, and THAAD 4.1; assess C2BMC planning, monitoring, and tasking capabilities effect on Homeland Defense performance <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Participate in ground test events to support fielding of Spiral 8.2-7 and BOA 8.1 BST with SLD by testing the following capabilities: Generation of BST with SLD to support GMD Engagements, BOA 8.1 Integration, SDA refinement, Reporting of SOC entities to AN/TPY-2 (FBM) Radars and LRDR for use in radar calibration, and Expanded Hypersonic Tracking and Link-16 Reporting - Continue to assess interoperability of C2BMC S8.2-5, BOA 7.1, AN/TPY-2 FBM CX 5.0, LRDR 1.0, GS 8B, XBR 4.2, OBV 8.0/OBV11.0, IBCS 4.6, PDB 8.1, SBR 22-1, and THAAD 4.1; assess C2BMC planning, monitoring, and tasking capabilities effect on Homeland Defense performance <p>FY 2024 to FY 2025 Increase/Decrease Statement: Increase from FY 2024 to FY 2025 is in accordance with the current IMTP.</p>			
Accomplishments/Planned Programs Subtotals	57.587	51.849	57.926

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	194.264	220.311	367.279	-	367.279	543.868	554.429	464.018	314.936	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	670.808	903.633	768.227	-	768.227	856.218	842.985	956.974	1,007.150	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	228.807	239.159	209.002	-	209.002	205.087	202.555	209.816	214.110	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	589.588	597.720	609.406	-	609.406	623.893	625.985	659.983	677.858	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	586.329	693.727	649.255	-	649.255	602.818	539.786	649.556	714.388	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	47.629	50.549	54.525	-	54.525	56.851	58.115	59.600	61.362	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	163.297	177.868	197.339	-	197.339	176.888	162.741	177.598	188.253	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	376.650	360.455	367.491	-	367.491	418.514	383.362	435.626	438.825	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	572.380	570.258	604.708	-	604.708	584.070	429.635	515.282	584.771	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	513.267	208.997	182.283	-	182.283	193.100	205.122	250.208	327.698	Continuing	Continuing
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	65.991	103.517	100.882	-	100.882	63.560	56.020	64.457	72.759	Continuing	Continuing

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the Integration and Test support of the C2BMC system as depicted in Missile Defense System Integrated Master Test Plan. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Federally Funded Research and Development Center/University Affiliated Research Center and Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Additionally, a sole source Specialized Warfighter Development Contract was awarded to Northrop Grumman in March 2018 (3-year base and 2 one-year option periods) and is utilized for the

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

OPIR Capabilities Lab test infrastructure as the laboratory environment supporting system tests. The BOA Follow-on sole source contract was awarded in 3rd quarter FY 2023 with a 5-year period of performance. Furthermore, the competitive Integrated Research and Development for Enterprise Solutions contract with Jacob technologies was awarded in March 2022 with the planned follow-on award in February/March 2024 through August 2025. The contract provides support for the C2BMC testbed infrastructure for Missile Defense System tests and verification & validation of C2BMC developmental capabilities. Various other government agencies provide additional lab infrastructure support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Integrated Master Test Plan - All Prior Years	Various	Various : Various	90.701	0.000		0.000		0.000		-		0.000	0.000	90.701	0.000
Integrated Master Test Plan - Consolidated Contractor Support	Various	Various : Huntsville, AL; Colorado Springs, CO; NCR	0.968	0.000		0.000		0.000		-		0.000	0.000	0.968	0.000
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support (NSWC)	MIPR	DOD - USN - NAVAL SURFACE WARFARE CENTER (NSWC) DAHLGREN DIVISION (NSWCDD) : VA	0.000	1.147	Jun 2023	1.057	Oct 2023	1.078	Oct 2024	-		1.078	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors	SS/CPAF	NORTHROP GRUMMAN : CO	77.793	3.125	Jul 2023	2.596	Oct 2023	2.773	Oct 2024	-		2.773	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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				
Lab Infrastructure Support (Various)																
Integrated Master Test Plan - FFRDC	FFRDC	Institute for Defense Analyses (IDA) : Alexandria, VA	1.085	0.000		0.000		0.000		-		0.000	0.000	1.085	0.000	
Integrated Master Test Plan - Information Assurance - Test Lab Infrastructure	C/CPAF	Jacobs Technology, Inc : Colorado Springs, CO	5.182	0.000		0.000		0.000		-		0.000	0.000	5.182	0.000	
Integrated Master Test Plan - MDS Level Testing (LM)	SS/IDIQ	LOCKHEED MARTIN CORPORATION : Various	198.204	17.318	Jul 2023	18.021	Jul 2024	16.401	Jul 2025	-		16.401	Continuing	Continuing	Continuing	
Integrated Master Test Plan - MDS Level Testing - Element/System Test Lab Facilities	C/CPAF	NORTHROP GRUMMAN : CO	48.218	10.913	Mar 2023	12.209	Mar 2024	15.583	Mar 2025	-		15.583	Continuing	Continuing	Continuing	
Integrated Master Test Plan - MDS Level Testing - Element/System Test Lab Facilities (Jacobs)	C/CPAF	JACOBS TECHNOLOGY INC. : Various	106.638	23.076	Mar 2023	15.525	Mar 2024	20.600	Mar 2025	-		20.600	Continuing	Continuing	Continuing	
Integrated Master Test Plan - MDS Level Testing GOV	MIPR	Various : Various	14.699	2.008	Mar 2023	2.441	Oct 2023	1.491	Oct 2024	-		1.491	Continuing	Continuing	Continuing	
Subtotal			543.488	57.587		51.849		57.926		-		57.926	Continuing	Continuing	N/A	

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	543.488	57.587	51.849	57.926	-	57.926	Continuing	Continuing	N/A

Remarks
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇

	FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028		FY 2029	
GTI-08a Part 2 (N/I)	◆													
TBG-2 (OTHER, DT Tracking Exercise Flight Test)	▲													
(EX) Joint Live, Virtual, and Constructive 2021/2022	◆													
(WG) Demonstration, Table-top Exercises & Experiments 22	◆													
(EX) VIGILANT SHIELD 23	◆													
(EX) KEEN SWORD 23	◆													
(EX) GLOBAL RESPONSE EXERCISE 11	◆													
(EX) GLOBAL THUNDER 22	◆													
SICO -09-1	◆													
GTD-08a (N/I) (Missile Defense System Ground Test)	◆													
JFTM-07 E1 (JAPAN, DT Tracking Exercise Flight Test)	▲													
GTD-07b (AA)	◆													
(WG) NIMBLE TITAN 24	◆	◆	◆	◆	◆									
(EX) Joint Project Optic Windmill 2023	◆	◆	◆											
(EX) AIR AND MISSILE DEFENSE EXERCISE 23	◆	◆	◆											
Enterprise Sensor Lab Infrastructure Support Planned	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)		◆	◆											
(EX) AUSTERE CHALLENGE 23		◆												
(EX) RESILIENT SHIELD 23		▲												
(EX) GLOBAL LIGHTNING 23		◆	◆											
SICO-09-2		◆												
(EX) EUROPEAN TEST BED 23		◇	◇	◇	◇									
TBG-3 (OTHER, DT Tracking Exercise Flight Test)			▲											
SICO-09-3			◆											

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇

	FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028		FY 2029	
(EX) VIGILANT SHIELD 24		◇	◇	◇	◇									
(EX) KEEN EDGE 24		◇	◇	◇	◇									
FTX-26 (OT) (SN, OT Target Only Flight Test)			▲											
SICO-08a-02			◆											
FTG-12 (GM, DT/OT Intercept Flight Test)			▲											
SICO 9-4				◇										
(EX) AIR AND MISSILE DEFENSE EXERCISE 24			◇	◇	◇									
GTI-08b (N/I)				◇										
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)			△											
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)			△											
GTD-08b (N/I)				◇	◇									
GTI-ISR (23) (Missile Defense System Ground Test)				◇										
Pacific Dragon-24 E2 (ARAV-T1)					△									
GTI-101 (E/C)						◇								
Pacific Dragon-24 E1 (ARAV-B)					△									
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)						△								
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)							△							
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)								△						
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)						◇								
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)						△								
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)							◇							
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)							△							
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)								△						
GTI-12 (E/C)								◇						

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇

	FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028			FY 2029		
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)											△										
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)											△										
GTD-13 (N/I) (Missile Defense System Ground Test)											◇										
GTD-12 (E/C) (Missile Defense System Ground Test)											◇										
GTI-ASI (26) (Missile Defense System Ground Test)											◇										
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)											△										
GTI-14 Sprint 1 (N/I)											◇										
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)												△									
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)													◇								
FTG-17 (GM, DT/OT Intercept Flight Test)														△							
FTG-16 (GM, DT Intercept Flight Test)													△								
SICO-24 (N/I)														◇							
FTT-26 (MRBM T1)														△							
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)														△							
GTD-14 (N/I) ((Missile Defense System Ground Test)															◇						
GTI-ISR (27) (Missile Defense System Ground Test)															◇						
FTM-47 (MRBM T4 X3/BQM-177 X4)																	△				
FTG-18 (DT/OT)																		△			
GTD-15 (E/C)																		◇			
GTI-24 (I)															◇						
GTI-16 Sprint 1 (N/I)																				◇	
Pacific Dragon-28 E3 (SM-3 Blk 1A)																				△	
Pacific Dragon-28 E2 (ARAV-B)																				◇	
GTI-ASI (28)																				◇	

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆				
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇				
		FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
GTI-16 Sprint 2 (N/I)								◇
GTD-16 (N/I)								◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-08a Part 2 (N/I)	1	2023	1	2023
TBG-2 (OTHER, DT Tracking Exercise Flight Test)	1	2023	1	2023
(EX) Joint Live, Virtual, and Constructive 2021/2022	1	2023	1	2023
(WG) Demonstration, Table-top Exercises & Experiments 22	1	2023	1	2023
(EX) VIGILANT SHIELD 23	1	2023	1	2023
(EX) KEEN SWORD 23	1	2023	1	2023
(EX) GLOBAL RESPONSE EXERCISE 11	1	2023	1	2023
(EX) GLOBAL THUNDER 22	1	2023	1	2023
SICO -09-1	1	2023	1	2023
GTD-08a (N/I) (Missile Defense System Ground Test)	1	2023	1	2023
JFTM-07 E1 (JAPAN, DT Tracking Exercise Flight Test)	1	2023	1	2023
GTD-07b (AA)	1	2023	1	2023
(WG) NIMBLE TITAN 24	1	2023	1	2024
(EX) Joint Project Optic Windmill 2023	1	2023	3	2023
(EX) AIR AND MISSILE DEFENSE EXERCISE 23	1	2023	3	2023
Enterprise Sensor Lab Infrastructure Support Planned	1	2023	4	2027
GTI-09 Sprint 2 (E/C) (Missile Defense System Ground Test)	2	2023	3	2023
(EX) AUSTERE CHALLENGE 23	2	2023	2	2023
(EX) RESILIENT SHIELD 23	2	2023	2	2023
(EX) GLOBAL LIGHTNING 23	2	2023	3	2023
SICO-09-2	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
(EX) EUROPEAN TEST BED 23	2	2023	1	2024
TBG-3 (OTHER, DT Tracking Exercise Flight Test)	3	2023	3	2023
SICO-09-3	3	2023	3	2023
(EX) VIGILANT SHIELD 24	3	2023	3	2024
(EX) KEEN EDGE 24	3	2023	2	2024
FTX-26 (OT) (SN, OT Target Only Flight Test)	4	2023	4	2023
SICO-08a-02	4	2023	4	2023
FTG-12 (GM, DT/OT Intercept Flight Test)	1	2024	1	2024
SICO 9-4	2	2024	2	2024
(EX) AIR AND MISSILE DEFENSE EXERCISE 24	1	2024	3	2024
GTI-08b (N/I)	3	2024	3	2024
FTM-32 (AEGIS SBT, DT/OT Intercept Flight Test)	2	2024	2	2024
FTX-23 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2024	2	2024
GTD-08b (N/I)	4	2024	1	2025
GTI-ISR (23) (Missile Defense System Ground Test)	3	2024	3	2024
Pacific Dragon-24 E2 (ARAV-T1)	4	2024	4	2024
GTI-101 (E/C)	2	2025	2	2025
Pacific Dragon-24 E1 (ARAV-B)	4	2024	4	2024
FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test)	1	2025	1	2025
FTX-28 E1 (TH, DT/OT Tracking Exercise Flight Test)	1	2026	1	2026
FTX-28 E3 (TH, DT/OT Tracking Exercise Flight Test)	1	2026	1	2026
GTI-13 Sprint 1 (N/I) (Missile Defense System Ground Test)	2	2025	2	2025
FTX-40 (AEGIS 5.1, DT Tracking Exercise Flight Test)	2	2025	2	2025
GTI-13 Sprint 2 (N/I) (Missile Defense System Ground Test)	4	2025	4	2025
FTM-30 (AEGIS 5.1, DT/OT Intercept Flight Test)	4	2025	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-43 (AEGIS 5.1, DT/OT Intercept Flight Test)	3	2026	3	2026
GTI-12 (E/C)	2	2026	2	2026
JFTX-01 E1 (JAPAN, DT Tracking Exercise Flight Test)	3	2026	3	2026
JFTX-01 E2 (JAPAN, DT Tracking Exercise Flight Test)	3	2026	3	2026
GTD-13 (N/I) (Missile Defense System Ground Test)	2	2026	2	2026
GTD-12 (E/C) (Missile Defense System Ground Test)	3	2026	3	2026
GTI-ASI (26) (Missile Defense System Ground Test)	3	2026	3	2026
FTM-40 (AEGIS 6, DT/OT Intercept Flight Test)	3	2026	3	2026
GTI-14 Sprint 1 (N/I)	4	2026	4	2026
FTM-41 (AEGIS 6, DT/OT Intercept Flight Test)	1	2027	1	2027
GTI-14 (N/I) Sprint 2 (Missile Defense System Ground Test)	3	2027	3	2027
FTG-17 (GM, DT/OT Intercept Flight Test)	4	2027	4	2027
FTG-16 (GM, DT Intercept Flight Test)	2	2027	2	2027
SICO-24 (N/I)	3	2027	3	2027
FTT-26 (MRBM T1)	3	2027	3	2027
FTX-28 E2 (TH, DT/OT Tracking Exercise Flight Test)	3	2027	3	2027
GTD-14 (N/I) ((Missile Defense System Ground Test)	4	2027	4	2027
GTI-ISR (27) (Missile Defense System Ground Test)	4	2027	4	2027
FTM-47 (MRBM T4 X3/BQM-177 X4)	2	2028	2	2028
FTG-18 (DT/OT)	3	2028	3	2028
GTD-15 (E/C)	3	2028	3	2028
GTI-24 (I)	3	2027	3	2027
GTI-16 Sprint 1 (N/I)	4	2028	4	2028
Pacific Dragon-28 E3 (SM-3 Blk 1A)	4	2028	4	2028
Pacific Dragon-28 E2 (ARAV-B)	4	2028	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-ASI (28)	4	2028	4	2028
GTI-16 Sprint 2 (N/I)	3	2029	3	2029
GTD-16 (N/I)	4	2029	4	2029

Note
* FTM-37 (AEGIS 5.1, DT/OT Intercept Flight Test) under review

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency										Date: March 2024		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>				Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	1,093.956	129.802	138.665	139.480	-	139.480	142.259	145.342	148.249	151.214	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

C2BMC Development Support provides operations engineering, integrated logistics, warfighter integration, deployment, and disposal of the current operational system and/or systems fielded in United States Strategic Command, United States Northern Command (USNORTHCOM), United States Indo-Pacific Command (USINDOPACOM), United States European Command (USEUCOM), United States Central Command (USCENTCOM), and U.S. Space Command (USSPACECOM) and the operation of the C2BMC Control Center. This activity provides continuous support of the development, deployment, sustainment of the C2BMC training systems, and updates training material to stay current with fielded capabilities.

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

	FY 2023	FY 2024	FY 2025
Title: Operations Engineering	111.321	120.326	120.857
Articles:	-	-	-
<p>Description: This activity funds C2BMC support of current operational, test, and training systems. Recurring efforts include:</p> <ul style="list-style-type: none"> - On-site maintenance, help-desk support, and developer reach-back support to ensure operational availability - C2BMC Command Center (CCC) provides 24 hours a day, 7 days a week, 365 days a year Ballistic Missile Defense Systems Overhead Persistent Infrared Architecture (BOA) and C2BMC operations including system and network monitoring, system administration, and network defense against cyber-attacks - Integrated Logistic Support by providing a secure supply chain; reliability, availability, and maintainability (RAM) engineering; obsolescence engineering; and sparing to ensure operational availability - Cybersecurity engineering providing C2BMC Commercial-off-the-shelf software/hardware updates and CCC upgrades that address system vulnerabilities, field quarterly updates to reduce system component vulnerability to cyber-attacks - Information System Security Officers ensuring C2BMC compliance with latest cybersecurity requirements and policies - System modifications driven by Warfighter Involvement Process, Continuous Improvement Process, RAM and obsolescence engineering, and external systems such as Space-Based Infrared Sensors, Ground-based Midcourse Defense Fire Control, 			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2023	FY 2024	FY 2025
<p>Aegis, Terminal High Altitude Area Defense, Navy Link Monitoring and Management Tool, Army Navy/Transportable Radar Surveillance and Control-2, standard Army communications, Defense Information Systems Agency fiber networks, and Allied/Coalition interfaces</p> <ul style="list-style-type: none"> - Combatant Command (CCMD) integration providing C2BMC training, on-site Subject Matter Experts (SMEs), and surge SME support for real-world events, flight tests, ground tests, exercises, cyber assessments, and wargames - Facility modifications required to house current or future C2BMC equipment and transportation for moving C2BMC equipment - Integrated product support for tactical satellite communications (SATCOM) used in flight tests, hardened SATCOM, and associated shelters - Provide transportation for flight test equipment and SME support and analysis for numerous test, exercise, and real world events - Provide recurring proficiency training to CCMDs and keep training material and systems consistent with operational capabilities <p>Specific and/or unique accomplishments for each FY are as follow:</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continue sustainment of S8.2-5/BOA 7.0 capabilities - Begin initial preparation for Spiral 8.2-7 deployment <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> - Begin Spiral 8.2-7 deployment <p>FY 2024 to FY 2025 Increase/Decrease Statement: N/A</p>				
<p>Title: Concurrent Test, Training, and Operations (CTTO)</p> <p align="right">Articles:</p> <p>Description: This element provides the development and sustainment of the C2BMC Missions Specific Vendor Plug-in (MSVP) stand-alone operator training devices and the Distributed Training System for USINDOPACOM, USNORTHCOM, USEUCOM, USCENTCOM, and USSPACECOM. C2BMC connects all Missile Defense System Elements through virtual and physical networks to facilitate integrated test, training, operations, and certification within two coexistent realms. This enables the warfighter to become proficient on current and future software versions at the operational console, increases the developer's capacity to perform a variety of tests and upgrades on the operational Missile Defense System, and decreases recall-to-mission operations times from weeks and days to hours and minutes. The recently acquired C2BMC MSVP is a gaming-based stand-alone trainer developed from a Small Business Innovation Research project. It delivers mission training simulation using core Standard Space</p>		18.481 -	18.339 -	18.623 -

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>Trainer and provides flexibility in architecture and reduced long term cost. Recurring accomplishments include sustaining current training systems for Missile Defense System training events for the Unified Combatant Command and developing the next generation training systems, to include the integration of Red Force / Blue Force capability, to keep current with the operational system capabilities.</p> <p>Specific and/or unique accomplishments for each FY are as follows:</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2025 Plans: - SEE ABOVE.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	129.802	138.665	139.480

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	194.264	220.311	367.279	-	367.279	543.868	554.429	464.018	314.936	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	670.808	903.633	768.227	-	768.227	856.218	842.985	956.974	1,007.150	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	228.807	239.159	209.002	-	209.002	205.087	202.555	209.816	214.110	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	589.588	597.720	609.406	-	609.406	623.893	625.985	659.983	677.858	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	586.329	693.727	649.255	-	649.255	602.818	539.786	649.556	714.388	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	47.629	50.549	54.525	-	54.525	56.851	58.115	59.600	61.362	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	163.297	177.868	197.339	-	197.339	176.888	162.741	177.598	188.253	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	376.650	360.455	367.491	-	367.491	418.514	383.362	435.626	438.825	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	572.380	570.258	604.708	-	604.708	584.070	429.635	515.282	584.771	Continuing	Continuing
• 0604181C: <i>Hypersonic Defense</i>	513.267	208.997	182.283	-	182.283	193.100	205.122	250.208	327.698	Continuing	Continuing
• 0604873C: <i>Long Range Discrimination Radar (LRDR)</i>	65.991	103.517	100.882	-	100.882	63.560	56.020	64.457	72.759	Continuing	Continuing

Remarks

D. Acquisition Strategy

A sole source C2BMC contract to Lockheed Martin was awarded 1st quarter FY 2012. The current ordering period is through 4th quarter FY 2026. Major team members to Lockheed are Northrop Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the operations engineering, cybersecurity development, integrated logistics, warfighter integration, deployment, and disposal of the current fielded operational system and/or systems and the operation of the C2BMC Control Center. The sole source C2BMC Follow-on contract is planned to be awarded in 1st quarter FY 2024 to continue support of the C2BMC system. Contract Support Services personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment. Furthermore, a competitive contract to Sonalysts was awarded in January 2020 with a five-year period of performance to provide a C2BMC stand-alone training system called MSVP.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Operations Engineering - All Prior Years	Various	Various : Various	58.566	0.000		0.000		0.000		-		0.000	0.000	58.566	58.566
Operations Engineering - Sustaining Support (IRES)	C/CPAF	JACOBS TECHNOLOGY INC. : Various	8.897	3.017	Dec 2022	2.022	Dec 2023	1.924	Dec 2024	-		1.924	Continuing	Continuing	Continuing
Operations Engineering - Training Support (Boeing)	C/FPIF	BOEING : AL	4.396	1.600	Nov 2022	1.462	Oct 2023	0.956	Oct 2024	-		0.956	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (AVMC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : Various	9.075	3.904	Nov 2022	3.860	Oct 2023	5.257	Oct 2024	-		5.257	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (Lockheed Martin)	C/CPFF	LOCKHEED MARTIN CORPORATION : Various	774.570	89.797	Dec 2022	97.804	Nov 2023	92.982	Nov 2024	-		92.982	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (MANTECH)	C/CPFF	MANTECH : Various	0.000	0.000		0.000		1.608	Oct 2024	-		1.608	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (Multiple)	Various	Various : Various	15.266	7.400	Nov 2022	8.275	Oct 2023	4.407	Oct 2024	-		4.407	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement	MIPR	DOD - USA - TOBYHANNA ARMY DEPOT (TYAD) : Various	0.000	0.000		0.000		1.613	Oct 2024	-		1.613	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency												Date: March 2024			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>						Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>			

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Sustaining Support (NAVWAR)															
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (NG)	C/CPAF	NORTHROP GRUMMAN : CO	13.566	3.592	Nov 2022	6.264	Oct 2023	4.995	Oct 2024	-		4.995	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (PMDCATS)	MIPR	DOD - USA - PROGRAM MANAGER, DEFENSE COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (PM DCATS) : Various	0.000	0.000		0.000		1.143	Oct 2024	-		1.143	Continuing	Continuing	Continuing
Operations Engineering - Unit Personnel, Control System Improvement Sustaining Support (USSF)	MIPR	DOD - USSF - 21ST CONTRACTING SQUADRON (21 CONS) : Various	0.000	0.000		0.000		5.321	Oct 2024	-		5.321	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - All Prior Years	Various	Various : Various	8.443	0.000		0.000		0.000		-		0.000	0.000	8.443	4.610
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (Blue Halo)	C/CPFF	BLUEHALO : AL	13.771	4.457	Dec 2022	3.802	Dec 2023	2.070	Dec 2024	-		2.070	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (CCDC AVMC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) AVIATION AND MISSILE CENTER (AVMC) : AL	20.663	6.608	Dec 2022	5.705	Dec 2023	6.100	Dec 2024	-		6.100	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>						

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (CODDS)	C/TBD	TBD : Various	0.000	0.000		0.000		2.852	Dec 2024	-		2.852	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (LM)	SS/CPFF	LOCKHEED MARTIN CORPORATION : Various	142.157	4.335	Dec 2022	5.747	Dec 2023	4.364	Dec 2024	-		4.364	Continuing	Continuing	Continuing
Concurrent Test, Training, and Operations (CTTO) - Training Enhancements (Sonalysts)	SS/CPFF	SONALYSTS, INC. : CT	19.039	3.081	Dec 2022	3.085	Dec 2023	3.237	Dec 2024	-		3.237	Continuing	Continuing	Continuing
Subtotal			1,088.409	127.791		138.026		138.829		-		138.829	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, contract support services have transferred to appropriate cost categories.

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency											Date: March 2024			
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>				

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Operations Engineering - Contract Support Services - Parsons	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : Various	5.547	2.011	Nov 2022	0.639	Oct 2023	0.651	Nov 2024	-		0.651	Continuing	Continuing	Continuing
Subtotal			5.547	2.011		0.639		0.651		-		0.651	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		1,093.956	129.802	138.665	139.480	-	139.480	Continuing	Continuing	N/A

Remarks
Award Dates reflect date of first obligation. Additional obligations may incrementally occur throughout the year.

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆																								
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FY 2023</th> <th>FY 2024</th> <th>FY 2025</th> <th>FY 2026</th> <th>FY 2027</th> <th>FY 2028</th> <th>FY 2029</th> </tr> </thead> <tbody> <tr> <td>MX01 Command & Control, Battle Management, Communications (C2BMC) Development Support Planned</td> <td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td> </tr> <tr> <td>MX01 Incremental Engineering Technical Reviews (IETR) Planned</td> <td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td><td>◇</td> </tr> </tbody> </table>						FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	MX01 Command & Control, Battle Management, Communications (C2BMC) Development Support Planned	◇	◇	◇	◇	◇	◇	◇	MX01 Incremental Engineering Technical Reviews (IETR) Planned	◇	◇	◇	◇	◇	◇	◇
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029																					
MX01 Command & Control, Battle Management, Communications (C2BMC) Development Support Planned	◇	◇	◇	◇	◇	◇	◇																					
MX01 Incremental Engineering Technical Reviews (IETR) Planned	◇	◇	◇	◇	◇	◇	◇																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MX01 Command & Control, Battle Management, Communications (C2BMC) Development Support Planned	1	2023	4	2029
MX01 Incremental Engineering Technical Reviews (IETR) Planned	1	2023	4	2029

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency										Date: March 2024		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	216.319	22.004	19.009	21.749	-	21.749	24.131	24.476	27.803	30.441	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support (PWS) is allocated on a pro-rata basis across multiple Agency PEs 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 Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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 2023	FY 2024	FY 2025
Title: Program Wide Support	22.004	19.009	21.749
Articles:	-	-	-
Description: PWS contains non-headquarters management costs in support of MDA functions and activities across the entire Missile Defense System. These functions include Government Civilians and Contract Support Services. This effort provides integrity and oversight of the Missile Defense System 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025
<p>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.</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2025 Plans: - SEE ABOVE.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: 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. Increase from FY 2024 to FY 2025 reflects additional PWS FTEs being funded in this PE.</p>			
Accomplishments/Planned Programs Subtotals	22.004	19.009	21.749

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

N/A

Remarks

D. Acquisition Strategy

The acquisition strategy for MDA Consolidated Support consists of contract actions to industry for: a) Engineering and technical support; b) studies, analyses, and evaluations; and c) management and professional services to MDA functional organizations and program offices. With a focus to achieve Small Business goals, MDA is leveraging existing contracts and will competitively award new contracts to meet MDA's Fiscal Years 2020-2030 Advisory and Assistance Services (A&AS) support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 Operations Management	Various	Various : Multi: AL, CA, CO, VA	6.813	0.000		1.158	Oct 2023	0.000		-		0.000	0.000	7.971	0.000
Program Wide Support - Agency Operations and Support Services Civilian Salaries, Travel, Training	Allot	DOD - MISSILE DEFENSE AGENCY (MDA) CIVILIAN : Various	106.142	17.968	Oct 2022	17.578	Oct 2023	16.643	Oct 2024	-		16.643	Continuing	Continuing	Continuing
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	52.036	0.000		0.000		0.000		-		0.000	0.000	52.036	0.000
Subtotal			164.991	17.968		18.736		16.643		-		16.643	Continuing	Continuing	N/A

Remarks
In accordance with the Financial Management Regulation cost category definitions, some items have transferred to appropriate cost categories.

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 Operations and Support Services (FFP)	C/CPFF	Veterans Technology, LLC : AL	51.328	4.036	Nov 2022	0.273	Nov 2023	5.106	Nov 2024	-		5.106	Continuing	Continuing	Continuing
Subtotal			51.328	4.036		0.273		5.106		-		5.106	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	216.319	22.004	19.009	21.749	-	21.749	Continuing	Continuing	N/A

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Missile Defense Agency **Date:** March 2024

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ◆					
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ◇					
			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
MD40 Program-Wide Support			◇	◇	◇	◇	◇	◇	◇

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Missile Defense Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Co mmand and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2023	4	2029