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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Missile Defense Agency **Date:** March 2023

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 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,974.321	209.004	195.216	220.311	-	220.311	239.705	334.977	384.992	292.629	Continuing	Continuing
MD07: <i>THAAD</i>	2,391.045	182.790	176.543	199.440	-	199.440	217.374	308.369	355.866	265.247	Continuing	Continuing
MC07: <i>Cyber Operations</i>	44.518	11.816	10.555	12.140	-	12.140	12.782	12.135	12.553	13.437	Continuing	Continuing
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	410.452	0.844	1.211	0.900	-	0.900	0.922	0.938	0.952	0.967	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	128.306	13.554	6.907	7.831	-	7.831	8.627	13.535	15.621	12.978	Continuing	Continuing

Program MDAP/MAIS Code: 362

Note

Increase from FY 2023 to FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/Missile Segment Enhancement (MSE) Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense Terminal Defense Segment provides vital forward-deployable capabilities to support regional defensive Missile Defense System operations. The Terminal High Altitude Area Defense (THAAD) system provides Combatant Commands a globally-transportable, rapidly-deployable capability to intercept and destroy short-range, medium-range, and limited intermediate-range missile threats inside or outside the atmosphere during terminal phase of flight. This Program Element investigates concepts and continues the development and integration of multiple, independent THAAD system upgrades to improve reliability, availability and readiness, defense planning, and improved capability to engage short-range ballistic missile, medium-range ballistic missile, and limited intermediate-range ballistic missile threats.

B. Program Change Summary (\$ in Millions)

	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	213.382	190.216	196.279	-	196.279
Current President's Budget	209.004	195.216	220.311	-	220.311
Total Adjustments	-4.378	5.000	24.032	-	24.032
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	5.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-4.378	0.000			
• Other Adjustment	0.000	0.000	24.032	-	24.032

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Appropriation/Budget Activity
0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4:
Advanced Component Development & Prototypes (ACD&P)

R-1 Program Element (Number/Name)
PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*

Change Summary Explanation

Congressional Add Details
Project: MD07 THAAD

FY 2023 Congressional Add Total \$5.0 million
- Survivability planning and intercept evaluation tool (\$5 million)

The increase in FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/MSE Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD07: <i>THAAD</i>	2,391.045	182.790	176.543	199.440	-	199.440	217.374	308.369	355.866	265.247	Continuing	Continuing
Quantity of RDT&E Articles	50	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/Missile Segment Enhancement (MSE) Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.

A. Mission Description and Budget Item Justification

The Terminal High Altitude Area Defense (THAAD) system provides a capability to intercept and destroy short-range, medium-range, and limited intermediate-range missile threats inside or outside the atmosphere during the terminal phase of flight. THAAD continues the development and integration of multiple, independent software upgrades to improve reliability, availability and readiness, defense planning, and improved capability to engage Short-Range Ballistic Missile (SRBM), Medium-Range Ballistic Missile (MRBM), and limited Intermediate-Range Ballistic Missile (IRBM) threats.

THAAD Development continues the development and integration of multiple, independent system builds to deliver enhanced system capabilities and expand the defense of allies and deployed forces from short-to-intermediate-range threats.

Program Operations provides strategic planning, program integration, cost estimating, contracting, financial management, internal reviews and audits, earned-value management and program assessments for the THAAD Program Office.

Project Redwood details are provided at a Higher Classification reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program Annual Report to Congress.

THAAD Program Support provides support for communications and interoperability efforts to operate on multiple networks and safety and mission assurance efforts in support of the Materiel Release process.

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

	FY 2022	FY 2023	FY 2024
Title: Terminal High Altitude Area Defense (THAAD) Development	123.174	113.569	137.376
Articles:	-	-	-
Description: The THAAD Development program continues the development and integration of multiple, independent system builds to deliver enhanced system capabilities and expand the defense of allies and deployed forces from short-to-intermediate-range threats.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>System Build 4.0: THAAD/MSE Integration Part 1 Joint Emerging Operational Need (JEON) (Completed in 2Q FY 2022)</p> <ul style="list-style-type: none"> - Initial requirements to integrate MSE launchers and missiles into the THAAD weapon system enabling a more tightly integrated upper/lower tier defensive capability in support of JEON. - Improved capability to engage SRBM, MRBM and IRBM threats capable of creating complex scenes. - Expanded requirements for THAAD Electronic Protection/Objective Debris Mitigation to provide radar enhancements improving performance against adverse environments. <p>System Build 4.1: Global Materiel Release Updates for Expanded THAAD:</p> <ul style="list-style-type: none"> - To align THAAD System Builds with the Missile Defense System Phased Implementation Plan, capabilities previously included in TH 4.1 have been integrated in TH 5.0. <p>System Build 5.0: THAAD Updates to Maintain Mission Assurance (Development scheduled to complete in 2Q FY 2025)</p> <ul style="list-style-type: none"> - Interface Change Proposal: Implements necessary Link-16 software interface changes to align with Missile Defense System interoperability. - Maintenance Updates: Provides required maintenance updates and implements deferred content from accelerated JEON fielding timelines. - MSE Safety Integration: Integrates additional MSE safety improvements and the ability to manually emplace a MSE Launcher. - External Integration: Project Manager for Short and Intermediate Effectors for Layered Defense (PM SHIELD) integration and support. - Configuration 3 system Integration and Cyber Modernization: Updates THAAD weapon system to integrate new hardware addressing obsolescence, cyber vulnerabilities and various supportability issues to ensure continuity of Authority to Operate (ATO) approvals. - THAAD Radio Frequency (RF) Remote Launcher: Delivers the capability to increase the defended area footprint of a single THAAD Battery by enabling RF communications from the THAAD Fire Control and Communication (TFCC) to Remoted THAAD launchers. - Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Radar: Integrates latest AN/TPY-2 radar software (CX 6.0) into THAAD weapon system which ensures system functionality and interoperability providing the capability to track and discriminate evolving threats. - Assured Position Navigation and Timing (APNT): Implement protective measures that increase assurance of reliable Position Navigation and Timing (PNT) data. APNT supports a Department of Defense mandate to ensure the integrity and availability of PNT data for the THAAD weapon system. - Remote Workstation: External TFCC hardware and software connectivity allowing for the capability to remote from the TFCC tactical shelter to a remote location. 			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

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

- Dual Monitor: Integrate Dual Monitor capabilities for the ability to provide human factor improvements through additional monitor viewing space to be utilized within the TFCC and in support of Remote Workstation capability to support external Tactical Operation Centers (TOCs) and other external Remote Workstations.
- Architecture Improvements: Improvements in Software and Hardware Architecture to increase modularity, interoperability and reduce obsolete software and architecture structures.
- Common Planner: Provides a common force operations planning capability with the objective of achieving a common software baseline across all current THAAD force operations planning platforms.

System Build 6.0: Full THAAD/MSE Integration (Development scheduled to complete in 4Q FY 2027)

- Full THAAD/MSE Integration.
- THAAD MSE Remote Launchers.
- Updated Ballistic Missile Threat Space and Represented Threats for THAAD Engagements.
- External Integration: PM SHIELD integration and support.

Recurring efforts include:

- Support element Models and Simulations (M&S) related activities, to include Verification, Validation and Accreditation (VV&A) and Continuous Digital Assessment on the path of accredited models and simulations for Missile Defense System assessment.
- Support M&S related activities in element and Missile Defense System test events in the approved Integrated Master Test Plan such as requirements, design, development, and VV&A.
- Design, develop, test, and field the releases of THAAD system software to ensure continued performance and operation of fielded batteries.
- Support laboratory assets and equipment to enable future development, and to isolate, identify, and remedy root causes of equipment and software deficiencies identified by the warfighter.
- Perform requirements development, engineering analysis, and performance verification for THAAD development and Missile Defense System integration to ensure THAAD compliance with the Missile Defense System Specification, Missile Defense System Description Document, and Master Integration Plan.
- Participate in Missile Defense Agency (MDA) and Army studies to determine the architecture and integration of the THAAD Weapon system into the Integrated Air and Missile Defense Battle Command System (IBCS).
- Provide and coordinate analysis, studies and papers to support the resolution of issues and concerns with the integration of the THAAD weapon system into the future Army IBCS architecture.
- Perform Independent Verification and Validation (IV&V) of software and software assurance risk report.

FY 2022	FY 2023	FY 2024

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
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<p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: Congressional Add: Survivability planning and intercept evaluation tool (\$5 million)</p> <p>System Build 5.0 Provides for development and integration efforts to include:</p> <ul style="list-style-type: none"> - Interface Change Proposal: Implements necessary Link-16 software interface changes to align with Missile Defense System interoperability. - Maintenance Updates: Provides required maintenance updates and implements deferred content from accelerated JEON fielding timelines. - MSE Safety Integration: Integrates additional MSE safety improvements and the ability to manually emplace MSE Launcher. - External Integration: PM SHIELD integration and support. - Configuration 3 system Integration and Cyber Modernization: Updates THAAD weapon system to integrate new hardware addressing obsolescence, cyber vulnerabilities and various supportability issues to ensure continuity of ATO approvals. - THAAD RF Remote Launcher: Delivers the capability to increase the defended area footprint of a single THAAD Battery by enabling RF communications from the TFCC to Remoted THAAD launchers. - AN/TPY-2 Radar: Integrates latest AN/TPY-2 radar software (CX 6.0) into THAAD weapon system which ensures system functionality and interoperability providing the capability to track and discriminate evolving threats. - APNT: Implement protective measures that increase assurance of reliable PNT data. APNT supports a Department of Defense mandate to ensure the integrity and availability of PNT data for the THAAD weapon system. - Remote Workstation: External TFCC hardware and software connectivity allowing for the capability to remote from the TFCC tactical shelter to a remote location. - Dual Monitor: Integrate Dual Monitor capabilities for the ability to provide human factor improvements through additional monitor viewing space to be utilized within the TFCC and in support of Remote Workstation capability to support external TOCs and other external Remote Workstations. - Architecture Improvements: Improvements in Software and Hardware Architecture to increase modularity, interoperability and reduce obsolete software and architecture structures. - Common Planner: Provides a common force operations planning capability with the objective of achieving a common software baseline across all current THAAD force operations planning platforms. <p>FY 2024 Plans: System Build 4.0 - Field System Build 4.0 (4.0 Global) to all THAAD batteries</p>			
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UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>		Project (Number/Name) MD07 / <i>THAAD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2022
				FY 2023
				FY 2024
<p>System Build 5.0 Provides for development and integration efforts to include:</p> <ul style="list-style-type: none"> - Interface Change Proposal: Implements necessary Link-16 software interface changes to align with Missile Defense System interoperability. - Maintenance Updates: Provides required maintenance updates and implements deferred content from accelerated JEON fielding timelines. - MSE Safety Integration: Integrates additional MSE safety improvements and the ability to manually emplace MSE Launcher. - External Integration: PM SHIELD integration and support. - Configuration 3 system Integration and Cyber Modernization: Updates THAAD weapon system to integrate new hardware addressing obsolescence, cyber vulnerabilities and various supportability issues to ensure continuity of ATO approvals. - THAAD RF Remote Launcher: Delivers the capability to increase the defended area footprint of a single THAAD Battery by enabling RF communications from the TFCC to Remoted THAAD launchers. - AN/TPY-2 Radar: Integrates latest AN/TPY-2 radar software (CX 6.0) into THAAD weapon system which ensures system functionality and interoperability providing the capability to track and discriminate evolving threats. - APNT: Implement protective measures that increase assurance of reliable PNT data. APNT supports a Department of Defense mandate to ensure the integrity and availability of PNT data for the THAAD weapon system. - Remote Workstation: External TFCC hardware and software connectivity allowing for the capability to remote from the TFCC tactical shelter to a remote location. - Dual Monitor: Integrate Dual Monitor capabilities for the ability to provide human factor improvements through additional monitor viewing space to be utilized within the TFCC and in support of Remote Workstation capability to support external TOCs and other external Remote Workstations. - Architecture Improvements: Improvements in Software and Hardware Architecture to increase modularity, interoperability and reduce obsolete software and architecture structures. - Common Planner: Provides a common force operations planning capability with the objective of achieving a common software baseline across all current THAAD force operations planning platforms. <p>System Build 6.0 - Conduct systems engineering and integration analysis in support of the Full THAAD/MSE Integration capability.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides funding for systems engineering and integration analysis in support of the Full THAAD/MSE Integration capability and fielding of THAAD System Build 4.0 to all THAAD batteries.</p>				
Title: Program Operations				46.036
				48.930
				50.732

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p align="right">Articles:</p> <p>Description: Program Operations provides strategic planning, program integration, contracting, acquisition, engineering, financial management, internal reviews and audits, and program assessments for the THAAD Program Office.</p> <p>Recurring efforts include:</p> <ul style="list-style-type: none"> -Provide technical and business management support activities to provide Program and Agency Leadership with critical program status and decision quality data. -Ensure THAAD program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process. -Conduct internal program reviews to measure program progress against the six MDA approved baselines. -Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs. -Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter. <p>Specific and/or unique accomplishments to each FY are as follows:</p> <p>FY 2023 Plans: -SEE ABOVE.</p> <p>FY 2024 Plans: -SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A.</p>	-	-	-
<p>Title: Project Redwood- Details at a Higher Classification</p> <p align="right">Articles:</p> <p>Description: This project is reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program (SAP) Annual Report to Congress.</p> <p>FY 2023 Plans:</p>	11.482 -	12.045 -	9.288 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024
-SEE ABOVE.				
FY 2024 Plans: -SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: Further details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.				
Title: THAAD Program Support		2.098	1.999	2.044
Articles:		-	-	-
Description: This activity provides support for efforts such as communications and interoperability upgrades to operate on joint, service, or allied communications networks. This activity provides support for safety and mission assurance requirements, and support of independent government offices as part of the Materiel Release process.				
Recurring efforts include: - Interoperability development and maintenance to ensure the weapon system is authorized to operate on joint, service, or allied communications networks. - Safety confirmation and verification testing, preparation and approvals of System Safety Risk Assessments, issuance of hazard classifications and safety releases, insensitive munitions approvals and waivers, and independent oversight and support in the areas of reliability, availability, and maintainability and quality assurance.				
Specific and/or unique accomplishments to each FY are as follows:				
FY 2023 Plans: -SEE ABOVE.				
FY 2024 Plans: -SEE ABOVE.				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A.				
Accomplishments/Planned Programs Subtotals		182.790	176.543	199.440

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208866C: MD07: <i>THAAD O&M</i>	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing
• 0208866C: MD07: <i>THAAD Procurement</i>	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	388.956	366.824	360.455	-	360.455	430.281	436.921	465.074	375.256	Continuing	Continuing
• 0604876C: <i>Ballistic Missile Defense Terminal Defense Segment Test</i>	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing

Remarks

D. Acquisition Strategy

The THAAD program awards Task Orders on the Advanced Capability Development (ACD) Indefinite Delivery Indefinite Quantity (IDIQ) contract for THAAD development. The ACD contract is comprised of seven separate task orders with varying contract types such as firm fixed price, fixed price incentive firm, cost plus incentive fee, and cost plus fixed fee. The discrete task orders allow management and tracking of development work.

THAAD also utilizes other contracts with industry as well as agreements with other U.S. Government organizations in order to develop, test and upgrade the THAAD Weapon system.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Terminal High Altitude Area Defense (THAAD) Development - Advanced Capability Development	SS/IDIQ	LOCKHEED MARTIN CORPORATION : AL	1,032.611	70.276	Nov 2021	52.093	Nov 2022	83.152	Nov 2023	-		83.152	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - MDA Program Support	MIPR	Missile Defense Agency (MDA) : Various	15.386	0.000		0.000		0.000		-		0.000	0.000	15.386	15.386
Terminal High Altitude Area Defense (THAAD) Development - Requirements and Design	C/CPAF	Boeing : AL	24.888	5.509	Dec 2021	7.278	Dec 2022	5.665	Dec 2023	-		5.665	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Software Development	MIPR	Various : Various	0.000	17.631	Nov 2021	13.079	Nov 2022	14.129	Nov 2023	-		14.129	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Software Support (Prior)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	14.147	0.000		0.000		0.000		-		0.000	0.000	14.147	14.147
Terminal High Altitude Area Defense (THAAD) Development - THAAD Radar Improvements	SS/CPAF	Raytheon : MA	10.000	0.000		0.000		0.000		-		0.000	0.000	10.000	10.000
Terminal High Altitude Area Defense (THAAD) Development - Verification and Assessment	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	18.935	0.635	Nov 2021	0.270	Nov 2022	0.681	Nov 2023	-		0.681	Continuing	Continuing	Continuing
JEON - Advanced Capability Development	SS/IDIQ	Lockheed Martin : Various	177.889	0.000		0.000		0.000		-		0.000	0.000	177.889	177.889
JEON - MDA Program Support	Various	MDA : Huntsville, AL	0.509	0.000		0.000		0.000		-		0.000	0.000	0.509	0.509

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
JEON - OGA JEON Support (GOVT)	MIPR	US Army Tank Automotive Research, Development, and Engineering Center (TARDEC), Army Test and Evaluation Command (ATEC) : Warren, MI / Huntsville, AL	19.359	0.000		0.000		0.000		-		0.000	0.000	19.359	19.359
THAAD Layered Homeland Defense - THAAD Layered Homeland Defense	Various	Lockheed Martin / U.S. Army Combat Capabilities Development Command (CCDC) : Sunnyvale, CA / Huntsville, AL	35.059	0.000		0.000		0.000		-		0.000	0.000	35.059	35.059
Subtotal			1,348.783	94.051		72.720		103.627		-		103.627	Continuing	Continuing	N/A

Remarks
N/A.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Terminal High Altitude Area Defense (THAAD) Development - IT Program Support	C/CPAF	JACOBS TECHNOLOGY INC. : VARIOUS	15.940	2.686	Nov 2021	2.853	Nov 2022	2.949	Nov 2023	-		2.949	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Models & Simulations	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT	297.917	23.760	Nov 2021	28.782	Nov 2022	26.494	Nov 2023	-		26.494	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
0400 / 4				PE 0603881C / Ballistic Missile Defense Terminal Defense Segment						MD07 / THAAD					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
		COMMAND (CCDC) : AL													
Terminal High Altitude Area Defense (THAAD) Development - Software IV&V	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	4.503	2.677	Nov 2021	4.214	Nov 2022	4.306	Nov 2023	-		4.306	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Survivability Planning / Intercept Evaluation	MIPR	TBD : Various	0.000	0.000		5.000	Apr 2023	0.000		-		0.000	0.000	5.000	5.000
Program Operations - Civilian Salaries	Allot	MDA : AL	0.000	22.855	Oct 2021	23.386	Oct 2022	24.169	Oct 2023	-		24.169	Continuing	Continuing	Continuing
Program Operations - Contractor Support Service (Prior Year)	C/CPFF	Various : Various	427.397	0.000		0.000		0.000		-		0.000	0.000	427.397	427.397
Program Operations - Contractor Support Services (Missile Defense Engineering)	C/CPFF	PARSONS GOVERNMENT SERVICES INC. : AL	0.000	9.443	Nov 2021	9.644	Nov 2022	10.119	Nov 2023	-		10.119	Continuing	Continuing	Continuing
Program Operations - Contractor Support Services (Quality, Safety, & Mission Assurance)	C/CPFF	AI SOLUTIONS, INC. : AL	0.000	1.166	Nov 2021	1.297	Nov 2022	1.343	Nov 2023	-		1.343	Continuing	Continuing	Continuing
Program Operations - Contractor Support Services (Various)	C/CPFF	Various : Various	0.000	0.721	Nov 2021	1.804	Nov 2022	1.695	Nov 2023	-		1.695	Continuing	Continuing	Continuing
Program Operations - Program Operations (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	4.613	Nov 2021	4.908	Nov 2022	5.006	Nov 2023	-		5.006	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
0400 / 4				PE 0603881C / Ballistic Missile Defense Terminal Defense Segment						MD07 / THAAD					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Program Operations (FFRDC)	MIPR	DOD - USA - COMMUNICATIONS ELECTRONICS COMMAND (CECOM) : MD	0.000	3.277	Nov 2021	2.309	Nov 2022	2.962	Nov 2023	-		2.962	Continuing	Continuing	Continuing
Program Operations - Program Operations (IT Support)	C/CPFF	Various : Various	0.000	0.282	Nov 2021	0.516	Nov 2022	0.508	Nov 2023	-		0.508	Continuing	Continuing	Continuing
Program Operations - Travel	Allot	Various : Various	0.000	0.644	Nov 2021	1.040	Nov 2022	1.132	Nov 2023	-		1.132	Continuing	Continuing	Continuing
Project Redwood- Details at a Higher Classification - Special Programs	SS/FP	Various : Various	122.344	11.482	Nov 2021	12.045	Nov 2022	9.288	Nov 2023	-		9.288	Continuing	Continuing	Continuing
THAAD Program Support - Mission Support	MIPR	ATEC / SMDC / CCDC / MDA : WSMR, NM / Huntsville, AL	36.982	0.000		0.000		0.000		-		0.000	0.000	36.982	36.982
THAAD Program Support - Mission Support (CCDC)	MIPR	DOD - USA - COMBAT CAPABILITIES DEVELOPMENT COMMAND (CCDC) : AL	0.000	1.030	Nov 2021	1.146	Nov 2022	1.199	Nov 2023	-		1.199	Continuing	Continuing	Continuing
THAAD Program Support - Mission Support (Prime)	SS/IDIQ	LOCKHEED MARTIN CORPORATION : Various	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	0.600
THAAD Program Support - Mission Support (Various)	MIPR	Various : Various	0.000	1.068	Dec 2021	0.853	Dec 2022	0.845	Dec 2023	-		0.845	Continuing	Continuing	Continuing
THAAD Program Support - Prior year no longer funded in the FYDP	Various	Various : Various	136.579	0.000		0.000		0.000		-		0.000	0.000	136.579	136.579
Subtotal			1,042.262	85.704		99.797		92.015		-		92.015	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>					Project (Number/Name) MD07 / <i>THAAD</i>						
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Remarks N/A															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	N/A
Remarks N/A															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Contractor Support Services (Various)	C/CPFF	Various : Various	0.000	3.035	Nov 2021	4.026	Nov 2022	3.798	Nov 2023	-		3.798	Continuing	Continuing	Continuing
Subtotal			0.000	3.035		4.026		3.798		-		3.798	Continuing	Continuing	N/A
Remarks N/A															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2,391.045	182.790		176.543		199.440		-		199.440	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 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</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 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028	
THAAD System Build 4.0 - THAAD/Missile Segment Enhancement (MSE) Integration (JEON) Formal Qualification Testing (FQT)	▲													
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #1			▲											
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance IETR #2				△										
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Formal Qualification Testing IETR #3					△									
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #4						△								
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance FQT								△						
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #1									△					
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #2										△				
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #3											△			
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #4												△		
THAAD System Build 6.0 - Full THAAD/MSE Integration FQT													△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
THAAD System Build 4.0 - THAAD/Missile Segment Enhancement (MSE) Integration (JEON) Formal Qualification Testing (FQT)	2	2022	2	2022
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #1	1	2023	1	2023
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance IETR #2	2	2023	2	2023
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Formal Qualification Testing IETR #3	4	2023	4	2023
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance Incremental Engineering Technical Review (IETR) #4	2	2024	2	2024
THAAD System Build 5.0 - THAAD Updates to Maintain Mission Assurance FQT	2	2025	2	2025
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #1	3	2025	3	2025
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #2	1	2026	1	2026
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #3	3	2026	3	2026
THAAD System Build 6.0 - Full THAAD/MSE Integration IETR #4	1	2027	1	2027
THAAD System Build 6.0 - Full THAAD/MSE Integration FQT	4	2027	4	2027

Note

Incremental Engineering Technical Review (IETR): A formal milestone review held at the end of each Iterative Phase to review delivered capability and approve entry/exit criteria required for previous and subsequent Iterative Phase(s). The IETR may include Weapon System Component or System level reviews. The IETR will review material in alignment with approved Technical Review Plan (TRP) to include, but not limited to, the applicable content for the following: Cost / Schedule Review, System Requirements Review (SRR) ETR requirements evaluation, Preliminary Design Review (PDR) ETR requirements evaluation, Critical Design Review (CDR) ETR requirements evaluation, Test Results review, Requirements trace review, Code Status review, Risk/Issue review, Objective Evidence/Justification review, Test Readiness Review, and Approved Documentation Review.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MC07: <i>Cyber Operations</i>	44.518	11.816	10.555	12.140	-	12.140	12.782	12.135	12.553	13.437	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Increase from FY 2023 to FY 2024 provides additional funding for System Build 5.0 cybersecurity and infrastructure updates to improve the Terminal High Altitude Area Defense (THAAD) cyber posture required to ensure continuity of Authority to Operate (ATO) approvals and compliance with Department of Defense (DoD) Cybersecurity Requirements.

A. Mission Description and Budget Item Justification

Cyber Operations sustain the Missile Defense Agency (MDA) Risk Management Framework (RMF) and Controls Validation Testing (CVT) activities; analysis of validation results, risk assessments; reviews of proposed Program Manager/Information Assurance Manager Plans of Action and Milestones for MDA THAAD mission systems; and supports THAAD authorizations to operate in the Missile Defense System. Development efforts involve robust cybersecurity for both offense and defense to address the advanced threat.

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

	FY 2022	FY 2023	FY 2024
Title: Network / System Certification and Accreditation (C&A)	11.816	10.555	12.140
Articles:	-	-	-
Description: Funding in this project sustains MDA RMF and CVT activities, analysis of validation results, risk assessments, monitoring and tracking of cybersecurity mitigations, and all other activities necessary to comply with the Federal Information Security Management Act.			
Recurring efforts include:			
<ul style="list-style-type: none"> - Conduct cybersecurity/information assurance engineering and architecture planning for THAAD information technology systems. - Develop and test cybersecurity/information assurance control measures for THAAD systems. - Develop THAAD RMF for DoD Information Technology Certification and accreditation packages. - Support CVT of THAAD mission, test, and training systems. - Develop Plan of Action and Milestones to resource and remediate information assurance deficiencies. - Conduct annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining Information Assurance (IA) controls. - Perform Information Assurance Vulnerability Alert to mitigate potential system vulnerabilities. - Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs. - Continue THAAD Weapon System software development efforts consistent with DoD cybersecurity requirements. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
Specific and/or unique accomplishments to each FY are as follows: FY 2023 Plans: -SEE ABOVE. FY 2024 Plans: -SEE ABOVE. FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides additional funding for System Build 5.0 cybersecurity and infrastructure updates to improve the Terminal High Altitude Area Defense (THAAD) cyber posture required to ensure continuity of Authority to Operate (ATO) approvals and compliance with Department of Defense (DoD) Cybersecurity Requirements.			
Accomplishments/Planned Programs Subtotals	11.816	10.555	12.140

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 0208866C: MD07: <i>THAAD O&M</i>	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing
• 0208866C: MD07: <i>THAAD Procurement</i>	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing
• 0604876C: <i>Ballistic Missile Defense Terminal Defense Segment Test</i>	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing

Remarks

D. Acquisition Strategy
 The THAAD program awards Task Orders on the Advanced Capability Development (ACD) Indefinite Delivery Indefinite Quantity (IDIQ) contract for THAAD development. The ACD contract is comprised of seven separate task orders with varying contract types such as firm fixed price, fixed price incentive firm, cost plus incentive fee, and cost plus fixed fee. The discrete task orders allow management and tracking of development work.

THAAD also utilizes other contracts with industry as well as agreements with other U.S. Government organizations in order to develop, test and upgrade the THAAD Weapon system.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023		
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>						Project (Number/Name) MC07 / <i>Cyber Operations</i>		

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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) - Cybersecurity Engineering	SS/IDIQ	LOCKHEED MARTIN CORPORATION : AL	0.000	9.521	Nov 2021	7.526	Nov 2022	9.246	Nov 2023	-		9.246	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Mayhem Cybersecurity Tool	MIPR	DOD - USA - ARMY CONTRACTING COMMAND (ACC) PICATINNY ARSENAL (PICA) : NJ	0.000	0.175	Nov 2021	0.115	Nov 2022	0.115	Nov 2023	-		0.115	Continuing	Continuing	Continuing
Subtotal			0.000	9.696		7.641		9.361		-		9.361	Continuing	Continuing	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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) - CND/IA Advisory and Assistance Services	C/CPFF	Various : Various	6.379	0.000		0.000		0.000		-		0.000	0.000	6.379	6.379
Network / System Certification and Accreditation (C&A) - Contract Support Services	C/CPFF	Various : Various	0.000	0.460	Nov 2021	1.237	Nov 2022	1.628	Nov 2023	-		1.628	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Contract Support Services (CHS)	C/CPFF	SYSTEM HIGH CORPORATION : VA	0.000	1.106	Nov 2021	0.000		0.000		-		0.000	0.000	1.106	1.106

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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) - Cybersecurity Engineering	SS/IDIQ	LOCKHEED MARTIN CORPORATION : Various	38.139	0.000		0.000		0.000		-		0.000	0.000	38.139	38.139
Network / System Certification and Accreditation (C&A) - Network / System Certification and Accreditation (Various)	Various	Various : Various	0.000	0.554	Oct 2021	1.677	Oct 2022	1.151	Oct 2023	-		1.151	Continuing	Continuing	Continuing
Subtotal			44.518	2.120		2.914		2.779		-		2.779	Continuing	Continuing	N/A

Remarks
N/A.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.518	11.816	10.555	12.140	-	12.140	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-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MC07 Completed Cyber Operations	1	2022	1	2023
MC07 Planned Cyber Operations	2	2023	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency										Date: March 2023		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	410.452	0.844	1.211	0.900	-	0.900	0.922	0.938	0.952	0.967	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Decrease from FY 2023 to FY 2024 reflects a lower requirement for PATRIOT participation in Missile Defense System interoperability integration efforts.

A. Mission Description and Budget Item Justification

PAC-3 is an operational, land-based weapon built upon the proven U.S. Army Phased Array Tracking Radar Intercept on Target (PATRIOT) air and missile defense infrastructure. The Army is responsible for production and further development of the PAC-3 System and Missile Segment Enhancements (MSE); the Missile Defense Agency (MDA) remains responsible for any Missile Defense System interoperability and integration efforts. The Army's Project Manager for Short and Intermediate Effectors for Layered Defense (PM SHIELD) will utilize MDA funds to further the integration of PATRIOT with the Missile Defense System.

Previously this project included PM SHIELD's portion of the Joint Emergent Operational Need (JEON) including:

- 1) PATRIOT launch on remote to utilize Terminal High Altitude Area Defense's (THAAD's) capability to detect and track threat ballistic missiles at longer ranges and utilize MSE's full kinematic capability
- 2) THAAD/MSE Integration Part 1 that integrates MSE launchers and missiles into the THAAD weapon system enabling a more tightly integrated upper/lower tier defensive capability

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

	FY 2022	FY 2023	FY 2024
Title: General Support	0.844	1.211	0.900
Articles:	-	-	-
Description: MDA funds PATRIOT participation in Missile Defense System interoperability integration efforts. Activities support the day-to-day tasking that is leveraged upon PM SHIELD by MDA based on the Transfer and Transition Plan Annex L.			
FY 2023 Plans: -SEE ABOVE.			
FY 2024 Plans: -SEE ABOVE.			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
Decrease from FY 2023 to FY 2024 reflects a lower requirement for PATRIOT participation in Missile Defense System interoperability integration efforts.			
Accomplishments/Planned Programs Subtotals	0.844	1.211	0.900

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0208866C: MD07: THAAD O&M	85.557	86.945	89.297	-	89.297	91.789	93.995	96.024	97.945	Continuing	Continuing
• 0208866C: MD07: THAAD Procurement	380.722	239.994	216.782	-	216.782	447.080	475.739	643.513	656.384	Continuing	Continuing
• 0604876C: Ballistic Missile Defense Terminal Defense Segment Test	32.697	69.762	47.577	-	47.577	65.379	66.735	94.369	34.228	Continuing	Continuing

Remarks

D. Acquisition Strategy

The planned acquisition strategy for PATRIOT support is to use a support agreement to provide Military Interdepartmental Purchase Requests (MIPR) to the U.S. Army PM SHIELD to further the integration of PATRIOT with the Missile Defense System.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
JEON - PM SHIELD - JEON - PM SHIELD	MIPR	DOD - USA - SHORT AND INTERMEDIATE EFFECTORS FOR LAYERED DEFENSE (SHIELD) : AL	397.585	0.000		0.000		0.000		-		0.000	0.000	397.585	397.585
Subtotal			397.585	0.000		0.000		0.000		-		0.000	0.000	397.585	N/A

Remarks
N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
General Support - General Support	MIPR	Various : Various	12.867	0.844	Nov 2021	1.211	Nov 2022	0.900	Nov 2023	-		0.900	Continuing	Continuing	Continuing
Subtotal			12.867	0.844		1.211		0.900		-		0.900	Continuing	Continuing	N/A

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	410.452	0.844	1.211	0.900	-	0.900	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-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD06 Completed Patriot Advanced Capability-3 (PAC-3) General Support	1	2022	1	2023
MD06 JEON - PM SHIELD	2	2022	2	2022
MD06 Planned Patriot Advanced Capability-3 (PAC-3) General Support	2	2023	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	128.306	13.554	6.907	7.831	-	7.831	8.627	13.535	15.621	12.978	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 2022	FY 2023	FY 2024
Title: Program Wide Support	13.554	6.907	7.831
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 statutory environmental requirements; data and unified communications support; materiel and readiness and central property			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024
<p>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 2023 Plans: - SEE ABOVE</p> <p>FY 2024 Plans: - SEE ABOVE.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 provides the PWS allocation 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.</p>			
Accomplishments/Planned Programs Subtotals	13.554	6.907	7.831

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 support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
0400 / 4				PE 0603881C / Ballistic Missile Defense Terminal Defense Segment						MD40 / Program-Wide Support					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various : VA	4.973	7.165	Oct 2021	0.000		0.125	Nov 2023	-		0.125	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Various	Various : Multi: AL, CA, CO, VA	7.109	0.000		0.000		0.000		-		0.000	0.000	7.109	0.000
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA, VA,	18.000	0.700	Oct 2021	0.000		0.000		-		0.000	0.000	18.700	0.000
Program Wide Support - Agency Operations and Support International and Materiel and Readiness	MIPR	Various : Multi: AL, VA, Aust, Japan	3.492	0.000		0.000		0.000		-		0.000	0.000	3.492	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : Multi: AL, CO, VA	89.430	5.666	Oct 2021	5.792	Nov 2022	0.000		-		0.000	0.000	100.888	0.000
Program Wide Support - Agency Operations and Support Services #2	C/CPFF	Various : Multi: AK, AL, CA, CO, HI, NY, VA	0.000	0.018	Nov 2021	0.000		0.502	Nov 2023	-		0.502	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	C/CPFF	JACOBS TECHNOLOGY INC. : AK, AL, CA, HI, NY, VA	0.000	0.005	Nov 2021	1.115	Nov 2022	2.254	Nov 2023	-		2.254	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi: AL, VA	1.787	0.000		0.000		0.000		-		0.000	0.000	1.787	0.000
Program Wide Support - Prior year no longer funded in the FYDP	Various	Various : Various	3.515	0.000		0.000		0.000		-		0.000	0.000	3.515	0.000
Subtotal			128.306	13.554		6.907		2.881		-		2.881	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Missile Defense Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 Operation and Support Services	C/CPFF	STRATEGIC ALLIANCE BUSINESS GROUP LLC : TBD	0.000	0.000		0.000		4.950	Nov 2023	-		4.950	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.950		-		4.950	Continuing	Continuing	N/A

Remarks
N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		128.306	13.554	6.907	7.831	-	7.831	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-4A, RDT&E Schedule Details: PB 2024 Missile Defense Agency		Date: March 2023
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MD40 Program-Wide Support	1	2022	4	2028