Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Missile Defense Agency											Date: February 2018	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603881C *I Ballistic Missile Defense Terminal Defense Segment*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	1,339.241	197.171	292.262	214.173	-	214.173	199.399	197.451	174.161	152.174	Continuing	Continuing
MD07: *THAAD*	1,254.368	182.901	277.669	198.132	-	198.132	178.852	176.785	157.140	139.393	Continuing	Continuing
MC07: *Cyber Operations*	1.760	3.694	3.325	6.149	-	6.149	9.583	10.584	7.612	4.186	Continuing	Continuing
MD06: *Patriot Advanced Capability-3 (PAC-3)*	7.552	1.083	1.162	1.159	-	1.159	1.244	1.228	1.252	1.288	Continuing	Continuing
MD40: *Program-Wide Support*	75.561	9.493	10.106	8.733	-	8.733	9.720	8.854	8.157	7.307	Continuing	Continuing
Program MDAP/MAIS Code: 362												

Note

The decrease from FY 2018 to FY 2019 reflects completion of the United States Forces Korea (USFK) Joint Emergent Operational Need Statement (JEON) Phases 1-3 activities in FY 2019. There is also a decrease in development effort required for THAAD software build 4.0, the continued incremental transition of software support to O&M funding and the completion of Debris Mitigation Phase 2 development in FY 2018.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +$62.100 Million is required to fund Phase 1, 2 and 3 efforts for emergency warfighting requirements in support of USFK JEON.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense (BMD) Terminal Defense Segment provides vital forward-deployable capabilities to support Regional defensive BMD operations. The Terminal High Altitude Area Defense (THAAD) system provides Combatant Commanders a globally-transportable, rapidly-deployable capability to intercept and destroy short-range, medium-range, and limited intermediate-range ballistic missile threats inside or outside the atmosphere during terminal phase of flight. Continued development and integration will provide enhanced debris mitigation capability, improved interoperability with other BMDS elements, and training devices to support the THAAD Institutional Training Base.

This Program Element also investigates concepts and performs systems engineering to address emerging threats.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +$62.100 Million is required to address emergency warfighting readiness requirements.
+$62.100 Million Project MD07 THAAD: required to fund Phase 1, 2 and 3 efforts in the THAAD portion of USFK JEON to deliver enhanced capabilities against specific USFK threats as well expanded engagement options and increased coverage area.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Missile Defense Agency	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603881C *I Ballistic Missile Defense Terminal Defense Segment*

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	209.072	230.162	194.328	-	194.328
Current President's Budget	197.171	292.262	214.173	-	214.173
Total Adjustments	-11.901	62.100	19.845	-	19.845
• Congressional General Reductions	-5.000	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	-4.663	0.000			
• FY 2017 Request for Additional Appropriations	-2.238	0.000	0.000	-	0.000
• Missile Defeat and Defense Enhancement	0.000	62.100	0.000	-	0.000
• Other Adjustment	0.000	0.000	19.845	-	19.845

Change Summary Explanation

The FY 2017 reduction of ($4.663) for transfer to SBIR/STTR requirements.

The FY 2017 decrease of ($2.238M) is due to the Cybersecurity Operations improvement activities for BMDS readiness not addressed in the RFAA 2017.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +$62.100M is required to address emergency warfighting readiness requirements.

The increase of $19.845M in FY 2019 from PB 2018 to PB 2019 is due to additional USFK JEON funding provided for Phases 1-3, offset by reductions due to elimination of THAAD Follow-on requirements.

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

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	Project (Number/Name) MD07 / *THAAD*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MD07: *THAAD*	1,254.368	182.901	277.669	198.132	-	198.132	178.852	176.785	157.140	139.393	Continuing	Continuing
Quantity of RDT&E Articles	50	-	-	-	-	-	-	-	-	-		

Note

The decrease from FY 2018 to FY 2019 reflects a decrease in development effort required for THAAD software build 4.0, the continued incremental transition of software support to O&M funding, completion of Debris Mitigation Phase 2 development in FY 2018, and the transfer of cybersecurity development requirements to the MC07: Cyber Operations budget project. There is also a decrease from FY 2018 to FY 2019 which reflects completion of Prime Contractor software development efforts, and OGA testing, in support of USFK JEON.

A. Mission Description and Budget Item Justification

The THAAD II Development Program consists of multiple, independent software builds (e.g. Build 2.0, Build 3.0, build 4.0, and build 5.0) to expand the capability of the previously delivered THAAD 1.0 system. THAAD software build 3.0 is scheduled to be completed in 3Q FY 2018. THAAD software build 4.0 is scheduled to be completed in 1Q FY 2021. THAAD software build 5.0 is scheduled to be completed in 2Q FY 2023.

New capabilities provided from the different software builds of the THAAD II Development Program include upgrades such as:
1) improved THAAD Weapons System performance in the presence of a high debris environment,
2) expanded defended area footprints via remote operation of THAAD Launchers,
3) accelerated Remoted Launcher activities in support of USFK JEON,
4) exploitation of a performance capability and Regional Engagement Coordination Software upgrades in support of USFK JEON,
5) enhancements to share defended assets between BMD tactical level weapon systems,
6) software upgrades to maintain capability against evolving threats,
7) upgrades to process C2BMC messages to obtain direction for target engagement,
8) Weapon System Information Assurance mandatory updates,
9) Warfighter requested enhancements,
10) improved capability to engage SRBM, MRBM and limited IRBM threats capable of creating complex scenes,
11) upgrades to maintain interfaces with other BMDS elements, and
12) providing the ability to initiate an engagement and launch THAAD interceptors using sensor data provided by BMDS sources outside the THAAD Battery.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Terminal High Altitude Area Defense (THAAD) Development	125.182	163.006	119.962
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Description: Development of the THAAD II program as a series of independent, parallel software builds (e.g. Build 2.0, Build 3.0, build 4.0, and build 5.0) to deliver enhanced system capabilities and expand defense of allies and deployed forces from short-to-medium-range threats. Recurring efforts to support software development include: - Support Models and Simulations (M&S) related activities in element and BMDS test events in the approved Integrated master Test Plan (IMTP) such as; requirements, design, development, and verification/validation and accreditation, - Design, develop, test, and field the releases of THAAD system software to ensure continued performance and operation of fielded batteries, - Provide software updates in support of performance upgrades, - 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 BMDS integration to ensure THAAD compliance with the Ballistic Missile Defense (BMD) System Specification, BMD System Description Document, and Master Integration Plan, - Participate in MDA and Army studies to determine the architecture and integration of the THAAD Weapon system into the Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS), and - 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. - Development for THAAD Electronic Protection/Objective Debris Mitigation and implementation of flexible-threat packages and defense planning in order to provide an improved capability to engage SRBM, MRBM and limited IRBM threats capable of creating complex scenes. - Development of expanded defended area footprints via remote operation of THAAD Launchers. This effort adds additional communication pathways between launchers and TFCC to allow launchers to be emplaced. - Development of improved tactical network architecture in order to increase availability, robustness, and security of the system to counter cybersecurity threats. - Block Development Process to identify THAAD evolution and synchronize requirements that address threat evolution, obsolescence needs, Army training needs, reliability and sustainment issues. Perform redesign mitigation for obsolescence which could impact THAAD's future capability evolution. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Complete development of Phase II debris mitigation functionality and integration into the weapon system to improve interoperability with other BMDS elements - Continue development for THAAD Electronic Protection/Objective Debris Mitigation and implementation of flexible-threat packages and defense planning in order to provide an improved capability to engage SRBM, MRBM and limited IRBM threats capable of creating complex scenes. - Continue analysis of potential enhancements to Regional Peer-to-Peer Engagement Coordination between BMD tactical level weapon systems that share defended assets and are capable of engaging a common threat to conserve missile inventory and maximize engagements. - Continue acquisition and upgrades to test beds to support software development, cyber security efforts, and changes to hardware configuration. - Continue the incremental transition of software support from the Prime Contractor to organic support in order to reduce total system life cycle costs. - Continue mitigation of Track ID Proliferation to improve situational awareness when the warfighter is presented target information from multiple BMDS sensors. - Complete the development and coordination of the THAAD Portable Planner into Step 1 of the IBCS architecture to enable integration of the THAAD battery capability into the IBCS battle planning process in order to expand interoperability with air and missile defense systems. - Initiate Block Development Process to identify THAAD evolution and synchronize requirements that address threat evolution, obsolescence needs, Army training needs, reliability and sustainment issues. Perform redesign mitigation for obsolescence which could impact THAAD's future capability evolution. - Conduct studies to assist in identification of concepts and solutions to interceptors, sensors, and command and control to close potential THAAD capability gaps in order to provide enhanced defense against emerging regional threats. - Initiate developmental efforts to replace current GPS antennas with anti-jam and regional clock capabilities. This effort is a Department of Defense mandate to ensure the integrity and availability of positioning, navigation, and timing data for the THAAD weapon system. ***FY 2019 Plans:*** - Complete the incremental transition of software support from the Prime Contractor to organic support in order to reduce total system life cycle costs. - Complete mitigation of Track ID Proliferation to correctly associate track objects when the objects are tracked by multiple BMDS sensors.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Complete developmental efforts to replace current GPS antennas with anti-jam and regional clock capabilities. This effort is a Department of Defense mandate to ensure the integrity and availability of positioning, navigation, and timing data for the THAAD weapon system ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The decrease from FY 2018 to FY 2019 reflects a decrease in development effort required for THAAD software build 4.0, the continued incremental transition of software support to O&M funding, completion of Debris Mitigation Phase 2 development in FY 2018, and the transfer of cyber security development requirements to the MC07: Cyber Operations budget project.			
Title: Program Operations ***Articles:*** ***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. Recurring activities include: -Provide technical and business management support activities to provide the Program Director 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 Baseline Execution Reviews to measure program progress against the six Missile Defense Agency 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, and -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. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** - SEE ABOVE. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:***	47.450 -	45.704 -	50.930 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
The increase from FY 2018 to FY 2019 reflects fully funding the required manpower to meet mission requirements resulting from increased production and deployments.			
Title: USFK JEON	0.000	62.100	20.200
Articles:	-	-	-
Description: This accomplishment includes the THAAD portion of USFK JEON to deliver expanded engagement options and increased coverage area. This includes accelerating some content previously included in the THAAD Development accomplishment, while adding new development efforts such as improved power system for THAAD batteries to improve reliability and availability. Phase 1: Provides enhanced THAAD capability against specific USFK threats as well improved radar energy allocation to lower priority assets without losing coverage of higher priority assets. Phase 2: Improve THAAD Debris Mitigation through software updates to improve performance against debris. Phase 3: Provides an accelerated initial capability to remote launchers to increase defended area and support occupation of additional sites. Phase 3 also provides additional capability against threats in complex environments. ***FY 2018 Plans:*** - Completes the accelerated development of an initial capability against electronic threats to the THAAD Weapon System. This capability encompasses software changes in both the TFCC and the ANTPY-2 radar to deliver the improved performance. - Continues acquisition of testbeds required to support USFK JEON development efforts. - Continues upgrading testbeds and laboratories to reflect current and future hardware configurations of the THAAD Weapon Systems to support the JEON development and testing. - Completes development and coordination of a plan with the Operational Test Agency to identify data required to support a US Army Urgent Materiel Release decision for the THAAD Phase 3 content of the USFK JEON plan. - Initiates development of an improved and more reliable on-board vehicle power solution to support of the USFK JEON effort. ***FY 2019 Plans:*** - Completes accelerated development of the THAAD Launcher emplacement in support of the USFK JEON effort. Remote operation of the THAAD Launchers provide a mitigation against advanced threat ballistic missiles, expands defended area footprints, and enables emplacement in restricted terrain locations. - Completes acquisition of testbeds required to support USFK JEON development efforts. - Completes upgrading testbeds and laboratories to reflect current and future hardware configurations of the THAAD Weapon Systems to support the JEON development and testing.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- Completes development of an improved and more reliable on-board vehicle power solution to support of the USFK JEON effort. This on-board power solution will increase reliability and availability to all THAAD components. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The decrease from FY 2018 to FY 2019 reflects the completion of electronic protection improvements and materiel release planning in FY 2018, as well as a decrease in development effort required for remote launcher operations, system power architecture improvements and testbed acquisitions.			
Title: Project Redwood- Details at a Higher Classification ***Articles:*** ***Description:*** This project is reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program Annual Report to Congress. ***FY 2018 Plans:*** - SEE ABOVE. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A	4.074 -	4.283 -	4.356 -
Title: THAAD Program Support ***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, and - 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 (RAM) and quality assurance. Specific and/or unique accomplishments to each FY are as follows:	6.195 -	2.576 -	2.684 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
FY 2018 Plans: - SEE ABOVE. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	182.901	277.669	198.132

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• 0208866C: MD07: *THAAD O&M*	72.099	78.761	92.608	-	92.608	98.370	91.579	92.643	94.366	Continuing	Continuing
• 0208866C: MD07: *THAAD Procurement*	566.504	960.732	469.068	-	469.068	416.343	413.956	424.473	434.439	232.135	3,917.650
• 0604876C: *Ballistic Missile Defense Terminal Defense Segment Test*	57.567	36.239	61.017	-	61.017	16.917	49.170	51.003	59.759	Continuing	Continuing

Remarks

D. Acquisition Strategy

The THAAD program awards Indefinite Delivery Indefinite Quantity (IDIQ) Task Orders on the Advanced Capability Development (ACD) contract for THAAD 2.0 development. The ACD contract is comprised of over 40 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.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Terminal High Altitude Area Defense (THAAD) Development - Advanced Capability Development	SS/IDIQ	Lockheed Martin : Sunnyvale, CA / Huntsville, AL	637.961	76.565	Oct 2016	125.621	Nov 2017	82.135	Nov 2018	-		82.135	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - IT Program Support	C/CPAF	Northrup Grumman : AL, AK, CA, CO, HI, NM, VA	2.306	2.149	Oct 2016	2.952	Nov 2017	3.158	Jan 2019	-		3.158	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Lockheed Martin	SS/CPFF	LMSSC : Sunnyvale, CA/Huntsville, AL	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Terminal High Altitude Area Defense (THAAD) Development - MDA Program Support	MIPR	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	0.000	7.890		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Models & Simulations	MIPR	US Army Research, Development, Engineering Command (RDECOM) : Huntsville, AL	173.155	23.855	Oct 2016	23.527	Dec 2017	22.195	Dec 2018	-		22.195	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Requirements and Design	C/CPAF	Boeing : AL	10.419	1.153	Dec 2016	2.817	Dec 2017	4.710	Dec 2018	-		4.710	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Software Support (GOVT)	MIPR	US Army Research, Development, Engineering Command (RDECOM) : Huntsville, AL	2.097	2.359		6.313	Nov 2017	5.692	Nov 2018	-		5.692	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD)	SS/CPAF	Raytheon : MA	0.000	10.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development - THAAD Radar Improvements															
Terminal High Altitude Area Defense (THAAD) Development - Verification and Assessment	C/CPFF	TEAMS SE&I : AL / CO	10.021	1.211	Dec 2016	1.776	Dec 2017	2.072	Dec 2018	-		2.072	Continuing	Continuing	Continuing
USFK JEON - JEON Advanced Capability Development	SS/IDIQ	Lockheed Martin : Sunnyvale, CA / Huntsville, AL	0.000	0.000		52.419	Mar 2018	18.480	Dec 2018	-		18.480	0.000	70.899	0.000
USFK JEON - OGA JEON Support (GOVT)	MIPR	US ArmyTank Automotive Research, DeVelopment, and Engineering Center (TARDEC), Army Test and Evaluation Command (ATEC) : Warren, MI / Huntsville, AL	0.000	0.000		9.681	Jun 2018	1.720	Dec 2018	-		1.720	0.000	11.401	0.000
		Subtotal	835.959	125.182		225.106		140.162		-		140.162	Continuing	Continuing	N/A

Remarks

- Award dates are shown as October as they are the continuation of task orders or MIPRs from previous FYs.

- The decrease in Advanced Capability Development (ACD) from FY 2018 to FY 2019 reflects a decrease in the development effort required for THAAD software build 4.0, the continued incremental transition of software support to O&M funding, completion of Debris Mitigation Phase 2 development in FY 2018, and the transfer of cyber security development requirements to the MC07: Cyber Operations budget project. The ACD contract is comprised of over 40 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 addition of R-3 Cost Category Item "Software Support (GOVT)" in FY 2018 is the incremental transition of software support from the Prime Contractor to AMRDEC to reduce total system life cycle costs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Program Operations	Various	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	189.523	47.450	Oct 2016	45.704	Oct 2017	50.930	Oct 2018	-		50.930	Continuing	Continuing	Continuing
Project Redwood- Details at a Higher Classification - Special Programs	SS/FP	N/A : N/A	73.087	4.074	Oct 2016	4.283	Oct 2017	4.356	Oct 2018	-		4.356	Continuing	Continuing	Continuing
THAAD Program Support - Mission Support	MIPR	ATEC / SMDC / AMRDEC / MDA : WSMR, NM / Huntsville, AL	18.620	6.195	Oct 2016	2.576	Nov 2017	2.684		-		2.684	Continuing	Continuing	Continuing
THAAD Program Support - Prime Contractor Support	SS/IDIQ	Lockheed Martin : Sunnyvale, CA / Huntsville, AL	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	0.000
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	0.000
		Subtotal	418.409	57.719		52.563		57.970		-		57.970	Continuing	Continuing	N/A

Remarks

- Award dates are shown as October as they are the continuation of task orders or MIPRs from previous FYs.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,254.368	182.901		277.669		198.132		-		198.132	Continuing	Continuing	N/A

Remarks

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

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

Significant Event Complete ▲ Significant Event Planned △ Milestone Decision Complete ★ Milestone Decision Planned ☆ Element Test Complete ◆ Element Test Planned ◇ System Level Test Complete ● System Level Test Planned ○ Complete Activity ✦ Planned Activity ✧

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
THAAD Software Build 4.0 Engineering Requirements Review (ERR)				▲																								
THAAD Software Build 4.0 Preliminary Design Review (PDR)					△																							
THAAD Software Build 4.0 Engineering Design Review (EDR)							△																					
THAAD Software Build 3.0 Delivery (including USFK JEON Phase 2)								△																				
THAAD Software Build 5.0 Engineering Requirements Review (ERR)								△																				
THAAD Software Build 3.2 (USFK JEON Phase 3)												△																
THAAD Software Build 4.0 Delivery																	△											
THAAD Software Build 5.0 Delivery																										△		

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD07 / *THAAD*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
THAAD Software Build 4.0 Engineering Requirements Review (ERR)	4	2017	4	2017
THAAD Software Build 4.0 Preliminary Design Review (PDR)	1	2018	1	2018
THAAD Software Build 4.0 Engineering Design Review (EDR)	3	2018	3	2018
THAAD Software Build 3.0 Delivery (including USFK JEON Phase 2)	4	2018	4	2018
THAAD Software Build 5.0 Engineering Requirements Review (ERR)	4	2018	4	2018
THAAD Software Build 3.2 (USFK JEON Phase 3)	4	2019	4	2019
THAAD Software Build 4.0 Delivery	1	2021	1	2021
THAAD Software Build 5.0 Delivery	2	2023	2	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	Project (Number/Name) MC07 / *Cyber Operations*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MC07: *Cyber Operations*	1.760	3.694	3.325	6.149	-	6.149	9.583	10.584	7.612	4.186	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The increase from FY 2018 to FY 2019 reflects the movement of cyber security requirements for software development efforts being moved from R2a "THAAD Development" in the MD07 budget project to better align with cyber security funding breakout.

A. Mission Description and Budget Item Justification

Cyber Operations sustain 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 certification to operate in the BMDS.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Network / System Certification and Accreditation (C&A)	3.694	3.325	6.149
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 (FISMA). Recurring efforts include: - Conducting cyber security / information assurance engineering and architecture planning for THAAD information technology systems - Developing and testing cyber security/information assurance control measures for BMDS THAAD systems - Developing THAAD RMF for DoD IT certification and accreditation packages - Supporting CVT of THAAD mission, test, and training systems - Developing Plan of Action and Milestones (POA&Ms) to resource and remediate information assurance deficiencies - Conducting annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining IA controls - Perform IAVA to mitigate potential system vulnerabilities - Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MC07 / *Cyber Operations*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
- SEE ABOVE ***FY 2019 Plans:*** - Continue THAAD Weapon System software development efforts consistent with DoD cyber security requirements which were previously covered under THAAD Development, in order to correlate cyber software activities with realigned funding. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The increase from FY 2018 to FY 2019 reflects the movement of cyber security requirements for software development efforts being moved from R2a "THAAD Development" in the MD07 budget project to better align with cyber security funding breakout.			
Accomplishments/Planned Programs Subtotals	3.694	3.325	6.149

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• 0208866C: MD07: *THAAD O&M*	72.099	78.761	92.608	-	92.608	98.370	91.579	92.643	94.366	Continuing	Continuing
• 0208866C: MD07: *THAAD Procurement*	566.504	960.732	469.068	-	469.068	416.343	413.956	424.473	434.439	232.135	3,917.650
• 0604876C: *Ballistic Missile Defense Terminal Defense Segment Test*	57.567	36.239	61.017	-	61.017	16.917	49.170	51.003	59.759	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MC07 / *Cyber Operations*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies : Various MDA Locations	1.760	0.534	Oct 2016	0.678	Nov 2017	0.888	Nov 2018	-		0.888	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Security Engineering	SS/CPFF	LMSSC : Sunnyvale, CA/Huntsville, AL	0.000	3.160	Oct 2016	2.647	Jan 2018	5.261	Jan 2019	-		5.261	Continuing	Continuing	Continuing
		Subtotal	1.760	3.694		3.325		6.149		-		6.149	Continuing	Continuing	N/A

Remarks

The increase in Security Engineering from FY 2018 to FY 2019 reflects the movement of cyber security requirements for software development efforts being moved from R2a "THAAD Development" in the MD07 budget project to better align with cyber security funding breakout.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.760	3.694		3.325		6.149		-		6.149	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MC07 / *Cyber Operations*

Significant Event Complete ▲ Significant Event Planned △ | Milestone Decision Complete ★ Milestone Decision Planned ☆ | Element Test Complete ◆ Element Test Planned ◇ | System Level Test Complete ● System Level Test Planned ○ | Complete Activity ✦ Planned Activity ✧

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
MC07 Completed Cyber Operations	✦	✦	✦	✦	✦																							
MC07 Planned Cyber Operations						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MC07 / *Cyber Operations*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MC07 Completed Cyber Operations	1	2017	1	2018
MC07 Planned Cyber Operations	2	2018	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	Project (Number/Name) MD06 / *Patriot Advanced Capability-3 (PAC-3)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MD06: *Patriot Advanced Capability-3 (PAC-3)*	7.552	1.083	1.162	1.159	-	1.159	1.244	1.228	1.252	1.288	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

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

A. Mission Description and Budget Item Justification

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; MDA remains responsible for any BMDS interoperability and integration efforts. Lower Tier Project Office (LTPO) will utilize MDA funds to further the integration of PATRIOT with the BMDS.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: General Support	1.083	1.162	1.159
Articles:	-	-	-
Description: MDA funds PATRIOT participation in BMDS interoperability integration efforts. Activities support the day-to-day tasking that is leveraged upon LTPO by MDA based on the Transfer and Transition Plan Annex L. Specific and/or unique accomplishments to each FY are as follows: ***FY 2018 Plans:*** - SEE ABOVE. ***FY 2019 Plans:*** - SEE ABOVE. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	1.083	1.162	1.159

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD06 / *Patriot Advanced Capability-3 (PAC-3)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• 0208866C: MD07: *THAAD O&M*	72.099	78.761	92.608	-	92.608	98.370	91.579	92.643	94.366	Continuing	Continuing
• 0208866C: MD07: *THAAD Procurement*	566.504	960.732	469.068	-	469.068	416.343	413.956	424.473	434.439	232.135	3,917.650
• 0604876C: *Ballistic Missile Defense Terminal Defense Segment Test*	57.567	36.239	61.017	-	61.017	16.917	49.170	51.003	59.759	Continuing	Continuing

Remarks

D. Acquisition Strategy

The planned acquisition strategy for Phased Array Tracking Radar Intercept on Target (PATRIOT) support is to provide Military Interdepartmental Purchase Requests (MIPR) to the U.S. Army Lower-Tier Program Office (LTPO) to further the integration of PATRIOT with the BMDS.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD06 / *Patriot Advanced Capability-3 (PAC-3)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
General Support - General Support	MIPR	Lower Tier Project Office : Huntsville, AL	7.552	1.083	Nov 2016	1.162	Nov 2017	1.159	Nov 2018	-		1.159	Continuing	Continuing	Continuing
		Subtotal	7.552	1.083		1.162		1.159		-		1.159	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.552	1.083		1.162		1.159		-		1.159	Continuing	Continuing	N/A

Remarks

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

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD06 / *Patriot Advanced Capability-3 (PAC-3)*

Significant Event Complete ▲ Significant Event Planned △ Milestone Decision Complete ★ Milestone Decision Planned ☆ Element Test Complete ◆ Element Test Planned ◇ System Level Test Complete ● System Level Test Planned ○ Complete Activity ✦ Planned Activity ✧

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
MD06 Completed Patriot Advanced Capability-3 (PAC-3)	✦																											
MD06 Planned Patriot Advanced Capability-3 (PAC-3)						✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD06 / *Patriot Advanced Capability-3 (PAC-3)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MD06 Completed Patriot Advanced Capability-3 (PAC-3)	1	2017	1	2017
MD06 Planned Patriot Advanced Capability-3 (PAC-3)	2	2018	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	Project (Number/Name) MD40 / *Program-Wide Support*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MD40: *Program-Wide Support*	75.561	9.493	10.106	8.733	-	8.733	9.720	8.854	8.157	7.307	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program Wide Support reflects proportional changes as a result of budget changes in Ballistic Missile Defense Terminal Defense Segment program element. Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests on the R-3.

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019
Title: Program Wide Support	9.493	10.106	8.733
Articles:	-	-	-
Description: N/A			
FY 2018 Plans: N/A			
FY 2019 Plans: N/A			
FY 2018 to FY 2019 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	9.493	10.106	8.733

Exhibit R-2A, RDT&E Project Justification: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD40 / *Program-Wide Support*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD40 / *Program-Wide Support*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Wide Support - Agency Facilities and Maintenance (MIPR)	MIPR	Various : VA	3.500	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	6.607	0.050	Jul 2017	0.202	Jul 2018	0.132	Jul 2019	-		0.132	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CA, CO, VA	2.795	0.720	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA, VA,	14.049	0.000		0.000		0.550		-		0.550	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support International and Materiel and Readiness	MIPR	Various : Multi: AL, VA, Aust, Japan	1.929	0.605	Jul 2017	0.921	Jul 2018	0.037	Apr 2019	-		0.037	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, VA	45.757	7.619	Jan 2017	8.983	Jan 2018	7.650	Aug 2019	-		7.650	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi: AL, VA	0.924	0.499	Aug 2017	0.000		0.364	Jan 2019	-		0.364	Continuing	Continuing	Continuing
		Subtotal	75.561	9.493		10.106		8.733		-		8.733	Continuing	Continuing	N/A

Remarks

N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	75.561	9.493		10.106		8.733		-		8.733	Continuing	Continuing	N/A

Remarks

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD40 / *Program-Wide Support*

Significant Event Complete ▲ | Significant Event Planned △ | Milestone Decision Complete ★ | Milestone Decision Planned ☆ | Element Test Complete ◆ | Element Test Planned ◇ | System Level Test Complete ● | System Level Test Planned ○ | Complete Activity ✦ | Planned Activity ✧

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

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Missile Defense Agency		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603881C / *Ballistic Missile Defense Terminal Defense Segment*	**Project (Number/Name)** MD40 / *Program-Wide Support*

Schedule Details

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