

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	951.106	251.899	163.892	228.021	-	228.021	230.306	257.014	218.533	247.707	Continuing	Continuing
MD07: THAAD	838.481	210.540	144.822	216.186	-	216.186	217.575	241.979	204.990	232.328	Continuing	Continuing
MC07: Cyber Operations	-	0.799	0.647	0.652	-	0.652	0.664	0.676	0.688	0.699	Continuing	Continuing
MT07: THAAD Test	55.461	14.086	-	-	-	-	-	-	-	-	Continuing	Continuing
MD06: Patriot Advanced Capability-3 (PAC-3)	36.837	1.049	1.082	1.154	-	1.154	1.179	1.197	1.213	1.261	Continuing	Continuing
MD40: Program-Wide Support	20.327	25.425	17.341	10.029	-	10.029	10.888	13.162	11.642	13.419	Continuing	Continuing
Program MDAP/MAIS Code: 362												
Note Beginning in FY 2015 THAAD Test funding was transferred to a new Program Element 0604876C - Ballistic Missile Defense Terminal Defense Segment Test, Project MT07.												
A. Mission Description and Budget Item Justification The Terminal Defense Program Element includes the Terminal High Altitude Area Defense (THAAD) development program, Cyber Operations, THAAD System Test, support of PATRIOT (Phased Array Tracking Radar Intercept Of Target) Advanced Capability-3 (PAC-3) participation in Missile Defense Agency (MDA) activities, and Program Wide Support (PWS). THAAD provides the only air transportable, fast reaction capability for the warfighter to provide area coverage against Short and Medium Range Ballistic Missiles within four hours of arrival. The THAAD element includes five major components: Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Type 2 (AN/TPY-2) Radars, THAAD Fire Control and Communication (TFCC), and THAAD Peculiar Support Equipment. THAAD delivered Battery #1 in FY 2009 and Battery #2 in FY 2010 to the U.S. Army at Fort Bliss, Texas for initial fielding and training. THAAD has completed the development of the THAAD 1.0 configuration and is developing the THAAD Build 2.0 capability. Continued development and integration will provide for enhanced debris mitigation, improved interoperability with other Ballistic Missile Defense System (BMDS) elements, and development of training devices to support the THAAD Institutional Training Base. In FY 2016, THAAD Follow-On (extended range, integrated battle command system, and threat upgrades) will begin with a risk reduction effort with the potential to transition to a new start follow-on THAAD program in the future. The technical merits of expanded system interoperability with air and missile defense systems, and expanding the battlespace and defended area of the THAAD baseline weapon system will be evaluated during risk reduction activities to explore and mature the design concept and to validate the threat assessment. The decision to transition to a new follow-on THAAD program will be determined by evaluating the results of the technical merits and the program's affordability upon development of the program life cycle cost estimate.												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency	Date: February 2015
---	----------------------------

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>
---	---

Cyber Operations sustain Missile Defense Agency (MDA) Department of Defense (DoD) Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager (PM/IAM) Plans of Action and Milestones (POA&Ms) for MDA Command and Control, Battle Management and Communications (C2BMC) mission systems and supports THAAD certification to operate in the BMD System. Cyber Operations include non-recurring requirements in FY 2015 to FY 2017 to transition all THAAD information systems from DIACAP to DoD directed Risk Management Framework.

THAAD System Test conducts BMDS Flight Tests and Ground Tests with other BMDS elements (including BMDS C2BMC, PATRIOT and Aegis) in accordance with BMDS Integrated Master Test Plan. THAAD System Test coordinates with Operational Test Agencies, conducts flight test operations, performs post-flight test reporting, and performs data distribution and data storage at Pacific Missile Range Facility and the Reagan Test Site.

PATRIOT Advanced Capability (PAC-3) is a U.S. Army short range BMDS that interfaces with the BMDS. MDA funds PATRIOT participation in BMDS interoperability integration efforts.

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management efforts providing integrated and efficient support to the MDA functions and activities across the entire Ballistic Missile Defense System (BMDS).

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	255.918	299.598	221.008	-	221.008
Current President's Budget	251.899	163.892	228.021	-	228.021
Total Adjustments	-4.019	-135.706	7.013	-	7.013
• Congressional General Reductions	-	-0.140			
• Congressional Directed Reductions	-	-24.200			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-111.366			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.018	-			
• Other Adjustment	-0.001	-	7.013	-	7.013

Change Summary Explanation

FY 2015 changes reflect Public Law 113-235, FY2015 Omnibus; Consolidated and Further Continuing Appropriations Act.

The FY 2016 funding was adjusted to align with current Department of Defense priorities to include initiation of risk reduction and concept development efforts of a THAAD Follow-On capability to respond to emerging threats and the acquisition of testbeds to support multiple THAAD battery configurations.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD07: THAAD	838.481	210.540	144.822	216.186	-	216.186	217.575	241.979	204.990	232.328	Continuing	Continuing
Quantity of RDT&E Articles	50	-	-	-	-	-	-	-	-	-		

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

Terminal High Altitude Area Defense (THAAD) Development activities (1.0) focused on the design, development, testing and verification of a significant, fundamental capability to engage threats both inside and outside of the atmosphere in their terminal phase of flight. This capability includes engagements against short to medium-range ballistic missiles and asymmetric threats. Development of THAAD's next incremental capability (2.0) will enhance and extend the current 1.0 capability and be delivered as part of THAAD's acquisition/development strategy.

THAAD 1.0 (Baseline Capability Development) provided the fundamental capability against short and medium-range Ballistic Missiles and asymmetric threats inside and outside the atmosphere by FY 2012. This development completed with: 1) Ground and Flight Test of the weapon system against complex Re-entry Vehicles, background clutter, and Medium-Range Ballistic Missile (MRBM) threats; 2) Ground and Flight Test of the initial Discrimination Capability; 3) Enhanced communication capability to support Link 16 compatibility with the Ballistic Missile Defense System (BMDS) and engagement coordination with other BMDS elements; and 4) Conditional Materiel Release.

THAAD 2.0 (Advanced Capability Development) began in January of 2012 as a 7 year development effort consisting of multiple, independent software builds (e.g. Build 2.0, Build 3.0, etc.) to expand the capability of THAAD the 1.0 system with a projected capability delivery in FY 2019. New THAAD capabilities include: 1) Launch on Link 16 BMD System Based Track providing the ability to initiate an engagement and launch of THAAD interceptors using sensor data provided by BMDS sources outside the THAAD Battery; 2) Improving THAAD Weapons System performance in the presence of a high debris environment; 3) Expanding the defended area footprints by remote operation of THAAD Launchers; 4) Peer-to-peer engagement coordination with Aegis and PATRIOT weapon systems; 5) Software upgrades to maintain capability against evolving threats; 6) Message based regional engagement command functionality to process message content from Command and Control, Battle Management and Communications (C2BMC) to obtain direction for target engagement; 7) Weapon System Information Assurance mandatory updates; 8) Warfighter requested enhancements; and 9) Upgrades to maintain interface with other BMDS software builds.

In FY 2016, THAAD Follow-On (extended range, integrated battle command system, and threat upgrades) will begin with a risk reduction effort with the potential to transition to a new start follow-on THAAD program in the future. The technical merits of expanded system interoperability with air and missile defense systems, and expanding the battlespace and defended area of the THAAD baseline weapon system will be evaluated during risk reduction activities to explore and mature the design concept and to validate the threat assessment. The decision to transition to a new follow-on THAAD program will be determined by evaluating the results of the technical merits and the program's affordability upon development of the program life cycle cost estimate.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MD07 / THAAD		
In addition to THAAD Development and THAAD Follow-On, there are three planned tasks: THAAD Program Support, Program Operations, and Project Redwood. 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. 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 at a Higher Classification is reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program Annual Report to Congress.				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
Title: Terminal High Altitude Area Defense (THAAD) Development		124.768	85.442	152.733
Articles:		-	-	-
Description: This task includes the continued development of THAAD 2.0. as a series of independent, parallel software builds to deliver enhanced system capabilities and expand defense of allies and deployed forces from short-to-medium-range threats. This task also includes software maintenance; incorporation of test finding revisions; information assurance; requirements development; modeling and simulation; and capability integration and performance verification within the integrated Ballistic Missile Defense System. Flight and ground testing of this development is included in separate task (project); however, pre-mission engineering analysis supporting testing is included in this task.				
FY 2014 Accomplishments:				
-Continued development of Phase II debris mitigation functionality and integrate into the weapon system to improve interoperability with other BMDS elements				
-Conducted Terminal High Altitude Area Defense (THAAD) 2.0 Engineering Requirements Review to ensure Phase II debris mitigation design accounts for the results of FTO-01 (BMDS Operational Flight Test)				
-Conducted Models and Simulations (M&S) development to support element and Ballistic Missile Defense System (BMDS) events including all Integrated Master Test Plan (IMTP) M&S related activities to include System Pre Mission Tests (SPMTs) and System Post Flight Reconstruction (SPFRs) and conduct analysis of the Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data collected during test events to validate and accredit the M&S by the Operational Test Agency (OTA)				
-Continued requirements development, engineering analysis, capability integration, and performance verification for BMDS and THAAD element-level development and integration				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
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 2014	FY 2015	FY 2016
-Continued to design, develop, qualification test, and field annual release of Terminal High Altitude Area Defense (THAAD) system software to ensure continued performance and operation of fielded batteries -Continued to develop and maintain models, simulations, testbeds, and associated software required to perform engineering verification and analysis utilizing system simulations and Hardware-in-the-Loop (HWIL) facilities to ensure accurate element configuration and representation -Continued to provide software updates in support of performance upgrades and fielded batteries through the release of software builds to provide fixes as identified in both MDA Ground Test Campaigns and Combatant Command (COCOM) war games and exercises -Continued development of Packaged Threat Products to give deployed and fielded batteries the ability to upload new data on threat missiles as they evolve to ensure that the batteries defense takes into account both new threats and changes to existing threats -Continued development of NETTED / Embedded Training to enable fielded batteries to participate in netted training with other theater elements -Performed Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded batteries -Updated THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs and guidance -Continued system performance and requirement studies to assess capability development plans -Completed Missile Round Pallet (MRP) Transport development and qualification to both speed the deployment process and to reduce logistical life cycle costs of fielding the system -Provided prime contractor technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, and integration activities to ensure effective use of appropriated resources -Provided prime contractor and subcontract management to ensure effective use of appropriated resources FY 2015 Plans: -Reduction in cost from FY 2014 to FY 2015 primarily due to completion of Missile Round Pallet (MRP) Transport development, reductions in software development efforts, and reduced effort in System Software Support and Modeling and Simulation -Conduct Terminal High Altitude Area Defense (THAAD) 2.0 Engineering Design Review to ensure Phase II debris mitigation design accounts for the results of FTO-01 (BMDS Operational Flight Test) -Continue development of Phase II debris mitigation functionality and integrate into the weapon system to improve interoperability with other BMDS elements -Continue Models and Simulations (M&S) development to support element and Ballistic Missile Defense System (BMDS) events including all Integrated Master Test Plan (IMTP) M&S related activities to include System Pre Mission Tests (SPMTs) and System Post Flight Reconstruction (SPFRs) and conduct analysis of the Critical Engagement Conditions (CEC) and Empirical				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015	
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 2014	FY 2015
Measurement Events (EME) data collected during test events to validate and accredit the M&S by the Operational Test Agency (OTA) -Continue to design, develop, qualification test, and field annual release of Terminal High Altitude Area Defense (THAAD) system software to ensure continued performance and operation of fielded batteries -Continue to develop and maintain models, simulations, testbeds, and associated software required to perform engineering verification and analysis utilizing system simulations and Hardware-in-the-Loop (HWIL) facilities to ensure accurate element configuration and representation -Continue to provide software updates in support of performance upgrades and fielded batteries through the release of software builds to provide fixes as identified in both MDA Ground Test Campaigns and Combatant Command (COCOM) war games and exercises -Continue development of Packaged Threat Products to give deployed and fielded batteries the ability to upload new data on threat missiles as they evolve to ensure that the batteries defense takes into account both new threats and changes to existing threats -Continue requirements development, engineering analysis, capability integration, and performance verification for BMDS and THAAD element-level development and integration -Continue system performance and requirement studies to assess capability development plans -Perform Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded batteries -Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs and guidance -Initiate development to mitigate the effects of Track ID Proliferation through the implementation of BMDS changes approved in MIL-STD-6016 Interface Change Proposals (ICPs) in coordination with Aegis BMD, Command and Control, Battle Management, and Communications (C2BMC) and MDA Engineering. These changes require implementation by all members of the Network Participation Group to be effective FY 2016 Plans: -The increase in cost between FY 2015 and FY 2016 is primarily due to the initiation of software development efforts such as Link 16 and Peer to Peer Engagement, acquisition of the testbeds to support multiple THAAD battery configurations, and increased software support to participate with multiple representations of THAAD batteries and deliver tactical software functionality to support BMDS Incremental capabilities -Complete development of Phase II debris mitigation functionality and integrate into the weapon system to improve interoperability with other BMDS elements -Initiate development to provide real-time enhancements to Regional Peer-to-Peer Engagement Coordination, through implementation of Interface Change Proposals (ICPs) to MILSTD 6016, via automated exchange coordination messages between			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
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 2014	FY 2015	FY 2016
Ballistic Missile Defense (BMD) tactical level weapon systems that share defended assets and are capable of engaging a common threat. Assess enhancing Shoot-Assess-Shoot opportunities when THAAD is the second shooter. The implementation of these changes will provided enhanced communications and interoperability within the BMDS between both elements and the C2BMC -Initiate development and implementation of the Link 16 J7.7 Message within the THAAD Weapon System. This message provides association information to other BMDS elements in the network participation group allowing these elements to associate multiple THAAD tracks as reported on Link 16 in J3.6 messages to a single launch event and allows the THAAD Battery to use J3.6 track reports from external sensors and associate them with a launch event. This capability facilitates launch on engagements for both the THAAD battery and other BMD Weapon Systems -Initiate acquisition of testbeds required to support multiple, fielded battery configuration, development and integration of component software into system level software builds, and flight test pre-post- test analysis. Without this acquisition the limited testbeds will continue to be shared thus impacting support to deployed batteries, development deliveries, and flight tests -Initiate development to mitigate the effects of Track ID Proliferation through the implementation of BMDS changes approved in MIL-STD-6016 Interface Change Proposals (ICPs) in coordination with Aegis BMD, Command and Control, Battle Management, and Communications (C2BMC) and MDA Engineering. These changes require implementation by all members of the Network Participation Group to be effective -Continue Models and Simulations (M&S) development to support element and Ballistic Missile Defense System (BMDS) events including all Integrated Master Test Plan (IMTP) M&S related activities to include System Pre Mission Tests (SPMTs) and System Post Flight Reconstruction (SPFRs) and conduct analysis of the Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data collected during test events to validate and accredit the M&S by the Operational Test Agency (OTA) -Continue to design, develop, qualification test, and field annual release of Terminal High Altitude Area Defense (THAAD) system software to ensure continued performance and operation of fielded batteries -Continue to develop and maintain models, simulations, testbeds, and associated software required to perform engineering verification and analysis utilizing system simulations and Hardware-in-the-Loop (HWIL) facilities to ensure accurate element configuration and representation -Continue requirements development, engineering analysis, capability integration, and performance verification for BMDS and THAAD element-level development and integration -Continue to provide software updates in support of performance upgrades and fielded batteries through the release of software builds to provide fixes as identified in both MDA Ground Test Campaigns and Combatant Command (COCOM) war games and exercises -Continue development of Packaged Threat Products to give deployed and fielded batteries the ability to upload new data on threat missiles as they evolve to ensure that the batteries defense takes into account both new threats and changes to existing threats -Continue system performance and requirement studies to assess capability development plans				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
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 2014	FY 2015	FY 2016
-Perform Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded batteries -Update THAAD software and hardware to ensure compliance with Department of Defense (DoD) Weapon System Information Assurance Programs and guidance -Continue the assessment of current intelligence data of those threats assigned to the THAAD element of the BMDS. The assessment includes analyses of the threats to determine the changes in performance of the threats and the impact that the changes would have on the THAAD weapon system performance. The artifacts of the assessments and analyses provides the basis for future changes to the weapon system through additional software changes, system adjustable parameter changes and/or Packaged Threat Products, to allow the weapon system to optimize its performance against the improved threats				
Title: THAAD Program Support Articles: Description: This activity provides support for efforts such as communications and interoperability, and safety and mission assurance. Additionally, in FY 2014 it provided support for completing development of training aids to support the Institutional Training Base and in FY 2015 provided support for growth reliability verification testing. FY 2014 Accomplishments: -Continued THAAD Fire Control and Communication (TFCC)-Interoperability development and maintenance to support weapon system interoperability capabilities, joint and service certifications, and net-worthiness certification. Without these certifications, the weapon system would not be authorized to operate on joint, service, or allied communications networks -Completed development of Radar March Order & Emplacement Trainer (RMOET) and complete design for Radar Training Device (RTD) in order for the Institutional Training Base to maintain an enduring radar training capability for THAAD Soldiers -Continued development of the Terminal High Altitude Area Defense (THAAD) Portable Planner and Interface to Command and Control Battle Management and Communications (C2BMC)to provide interactive defense design capability to plan defensive course(s) of action and develop detailed defense plans - Continued support of independent offices such as the Army Aviation and Missile Command (AMCOM), Aviation and Missile Research Development and Engineering Center (AMRDEC), and the Developmental Test Command (DTC) as part of the Materiel Release process. These efforts include 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 providing independent oversight and support in the areas of reliability, availability, and maintainability (RAM) and quality assurance FY 2015 Plans:		37.224 -	8.698 -	2.059 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
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 2014	FY 2015	FY 2016
-Reduction from FY 2014 to FY 2015 due to the completion of the development efforts associated with training devices Institutional Conduct of Fire Trainer (ICOFT), Radar March Order & Emplacement Trainer (RMOET), and Radar Training Device (RTD) -Continue THAAD Fire Control and Communication (TFCC)-Interoperability development and maintenance to support weapon system interoperability capabilities, joint and service certifications, and net-worthiness certification. Without these certifications, the weapon system would not be authorized to operate on joint, service, or allied communications networks -Continued development of the Terminal High Altitude Area Defense (THAAD) Portable Planner and Interface to Command and Control Battle Management and Communications (C2BMC)to provide interactive defense design capability to plan defensive course(s) of action and develop detailed defense plans - Continued support of independent offices such as the Army Aviation and Missile Command (AMCOM), Aviation and Missile Research Development and Engineering Center (AMRDEC), and the Developmental Test Command (DTC) as part of the Materiel Release process. These efforts include 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 providing independent oversight and support in the areas of reliability, availability, and maintainability (RAM) and quality assurance -Conduct a Reliability Demonstration Test on a fully operational THAAD Battery for the purpose of demonstrating reliability growth in support of Materiel Release FY 2016 Plans: -Reduction from FY 2015 to FY 2016 due to the completion of the Reliability Demonstration Test in FY 2015 on a fully operational THAAD Battery for the purpose of demonstrating reliability growth in support of Materiel Release -Continue THAAD Fire Control and Communication (TFCC)-Interoperability development and maintenance to support weapon system interoperability capabilities, joint and service certifications, and net-worthiness certification. Without these certifications, the weapon system would not be authorized to operate on joint, service, or allied communications networks - Continued support of independent offices such as the Army Aviation and Missile Command (AMCOM), Aviation and Missile Research Development and Engineering Center (AMRDEC), and the Developmental Test Command (DTC) as part of the Materiel Release process. These efforts include 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 providing independent oversight and support in the areas of reliability, availability, and maintainability (RAM) and quality assurance.				
Title: Program Operations		44.826	45.761	43.543
Articles:		-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015	
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 2014	FY 2015
Description: Program Operations provides for management of the Terminal High Altitude Area Defense (THAAD) program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, and government manpower and infrastructure to develop and test the THAAD system and components. FY 2014 Accomplishments: -Provided technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data -Ensured Terminal High Altitude Area Defense (THAAD) program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process -Conducted internal Baseline Execution Reviews to measure program progress against the six Missile Defense Agency approved baselines -Continued 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 -Provided 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 FY 2015 Plans: -Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data -Ensure Terminal High Altitude Area Defense (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 -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 FY 2016 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
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 2014	FY 2015	FY 2016
-Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data -Ensure Terminal High Altitude Area Defense (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 -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				
Title: Project Redwood- Details at a Higher Classification Articles: Description: See Description Below FY 2014 Accomplishments: 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 2015 Plans: 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 2016 Plans: 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.		3.722 -	4.921 -	4.400 -
Title: THAAD Follow-On Articles: Description: THAAD Follow-On (extended range, integrated battle command system, and threat upgrades) will begin with a risk reduction effort with the potential to transition to a new start follow-on THAAD program in the future. The technical merits of expanded system interoperability with air and missile defense systems, and expanding the battlespace and defended area of the THAAD baseline weapon system will be evaluated during risk reduction activities to explore and mature the design concept and		- -	- -	13.451 -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency									Date: February 2015		
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 2014	FY 2015	FY 2016
to validate the threat assessment. The decision to transition to a new follow-on THAAD program will be determined by evaluating the results of the technical merits and the program's affordability upon development of the program life cycle cost estimate.											
FY 2014 Accomplishments: N/A											
FY 2015 Plans: N/A											
FY 2016 Plans: - Fund and conduct Weapon System trade studies to draft key system requirements, functional allocations, and interface definitions to address the BMDS emergent threat - Conduct performance analyses of system and ground component design concepts to characterize capabilities, limitations, risk and areas for improvement / correction. - Begin trade studies to assess configuration and performance requirements of interceptor components such boost motor, kick motor, canister, and kill vehicle. - Begin master test plan analysis to include identifying range requirements, flight test instrumentation requirements, and document potential flight and ground test program requirements such as objectives, assessment of courses of actions and coordination with stakeholders											
Accomplishments/Planned Programs Subtotals									210.540	144.822	216.186
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0208866C: O&M	377.672	403.512	432.068	-	432.068	446.563	446.873	461.472	460.216	-	3,028.376
• 0208866C: MD07: THAAD Procurement	571.851	449.824	464.067	-	464.067	362.605	330.002	317.414	313.631	3,289.952	6,099.346
• 0604876C: <i>Ballistic Missile Defense Terminal Defense Segment Test</i>	-	111.366	26.225	-	26.225	74.400	69.852	86.191	65.578	Continuing	Continuing
Remarks											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
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>
<u>D. Acquisition Strategy</u> The program is closing out contract line items in the basic THAAD Engineering, Manufacturing, and Development (EMD) contract that are associated with THAAD 1.0 while continuing THAAD 2.0 contract line items. THAAD awards Indefinite Delivery Indefinite Quantity (IDIQ) Task Orders on the Advanced Capability Development (ACD) contract for the continuation of THAAD 2.0 development. The discrete task orders allow management and tracking of Development work. <u>E. Performance Metrics</u> N/A		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
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>					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	LMSSC : Sunnyvale, CA/Huntsville, AL	49.578	46.907		30.851		74.063		-		74.063	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - IT Program Support	C/CPAF	Northrup Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	-		1.594		2.353		-		2.353	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Lockheed Martin	SS/CPFF	LMSSC : Sunnyvale, CA/Huntsville, AL	386.384	35.276		21.500		34.968		-		34.968	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - MDA Program Support	MIPR	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	79.794	11.483		4.244		3.593		-		3.593	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Models & Simulations	MIPR	US Army Research, Development, Engineering Command (RDECOM) : Huntsville, AL	99.213	31.102		27.253		28.000		-		28.000	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Requirements and Design	MIPR	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	0.000	-		-		4.633		-		4.633	Continuing	Continuing	Continuing
Terminal High Altitude Area Defense (THAAD) Development - Verification and Assessment	MIPR	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	0.000	-		-		5.123		-		5.123	Continuing	Continuing	Continuing
THAAD Follow-On - THAAD Follow-On Risk Reduction	SS/CPIF	Lockheed Martin : CA, TX, AL	0.000	-		-		13.451	Oct 2015	-		13.451	Continuing	Continuing	Continuing
Subtotal			614.969	124.768		85.442		166.184		-		166.184	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
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)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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															
- Increase in FY 2016 R-3 Cost Category Item "Advanced Capability Development" is primarily related to initiation of software developments efforts in FY 2016, some of which were deferred from FY 2015 such as Launch on Link 16 and Regional Peer to Peer Engagement Coordination. Additional increase is due to the acquisition of testbeds to support multiple THAAD battery configurations.															
- Increase in FY 2016 R-3 Cost Category Item "Lockheed Martin" is primarily related to requirements to development and delivery of tactical software functionality to support BMDS incremental capability deliveries.															
- New R-3 Cost Category Items "Requirements and Design" and "Verification and Assessment" are further breakouts of funds previously included in MDA Program Support.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
THAAD Program Support - Army Cell to Hybrid Program Office	MIPR	Integrated Material Management Center, AMCOM : Huntsville, AL	17.625	-		-		-		-		-	-	17.625	-
THAAD Program Support - MDA Program Support	Various	Missile Defense Agency (MDA) : Huntsville, AL	8.249	-		-		-		-		-	-	8.249	-
THAAD Program Support - Maintenance, Training, Transportation and Operations Support	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	85.460	35.312		-		-		-		-	Continuing	Continuing	Continuing
THAAD Program Support - Mission Support	MIPR	ATEC / OTC / MDA : WSMR, NM / Huntsville, AL	0.000	1.912		8.698		2.059		-		2.059	Continuing	Continuing	Continuing
Program Operations - Program Operations	Various	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	54.634	44.826		45.761		43.543		-		43.543	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency													Date: February 2015		
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 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Project Redwood- Details at a Higher Classification - Special Programs	SS/FP	N/A : N/A	57.544	3.722		4.921		4.400		-		4.400	Continuing	Continuing	Continuing
Subtotal			223.512	85.772		59.380		50.002		-		50.002	-	-	-

Remarks N/A															
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			-	-		-		-		-		-	-	-	-

Remarks N/A															
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			-	-		-		-		-		-	-	-	-

Remarks N/A															
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			838.481	210.540	144.822	216.186	-	216.186	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency							Date: February 2015			
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>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
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.										

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
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>

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 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Flexible Threat Package Engineering Requirements Review (ERR)			▲																									
Flexible Threat Package Engineering Design Review (EDR)				△																								
Regional Peer to Peer Engagement Engineering Requirements Review (ERR)											△																	
Regional Peer to Peer Engagement Engineering Design Review (EDR)														△														
Debris Mitigation Phase II Engineering Requirements Review (ERR)			▲																									
Debris Mitigation Phase II Engineering Design Review (EDR)						△																						
Launch on Link 16 Engineering Requirements Review (ERR)											△																	
Launch on Link 16 Engineering Design Review (EDR)														△														
Complete Institutional Conduct of Fire trainer (ICOFT)				▲																								
Complete Institutional Training Devices						△																						
Initiate THAAD Follow-On Risk Reduction										△																		

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
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
Flexible Threat Package Engineering Requirements Review (ERR)	3	2014	3	2014
Flexible Threat Package Engineering Design Review (EDR)	1	2015	1	2015
Regional Peer to Peer Engagement Engineering Requirements Review (ERR)	3	2016	3	2016
Regional Peer to Peer Engagement Engineering Design Review (EDR)	3	2017	3	2017
Debris Mitigation Phase II Engineering Requirements Review (ERR)	3	2014	3	2014
Debris Mitigation Phase II Engineering Design Review (EDR)	2	2015	2	2015
Launch on Link 16 Engineering Requirements Review (ERR)	3	2016	3	2016
Launch on Link 16 Engineering Design Review (EDR)	3	2017	3	2017
Complete Institutional Conduct of Fire trainer (ICOFT)	4	2014	4	2014
Complete Institutional Training Devices	2	2015	2	2015
Initiate THAAD Follow-On Risk Reduction	1	2016	1	2016

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MC07: Cyber Operations	-	0.799	0.647	0.652	-	0.652	0.664	0.676	0.688	0.699	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

Funding in this project sustains Missile Defense Agency (MDA) DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager (PM/IAM) Plans of Action and Milestones (POA&Ms) for MDA Command and Control Battle Management and Communications (C2BMC) mission systems. It maintains the Certification and Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&M on all MDA information systems. This project supports THAAD certification to operate in the BMD System. Cyber Operations includes non-recurring requirements in FY 2015 to FY 2017 to transition all THAAD information systems from DIACAP to DoD directed Risk Management Framework.

This project supports the monitoring and tracking of Cybersecurity mitigations detailed in Information Technology security POA&Ms. Activities include preparation of C&A documentation and accreditation recommendations to the MDA Senior Information Assurance Officer (SIAO)/Certification Authority (CA) and DAA. Independent Verification and Validation (IV&V) team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities in the Project are necessary to comply with the Federal Information Security Management Act (FISMA).

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

	FY 2014	FY 2015	FY 2016
Title: Network / System Certification and Accreditation (C&A)	0.799	0.647	0.652
Articles:	-	-	-
Description: N/A			
FY 2014 Accomplishments:			
- Conducted cyber security / information assurance engineering and architecture planning for THAAD information technology systems			
- Developed and test cyber security/information assurance control measures for Ballistic Missile Defense System (BMDS) THAAD systems			
- Developed THAAD DIACAP certification and accreditation packages			
- Supported Controls Validation Testing (CVT) of THAAD mission, test, and training systems			
- Developed Plan of Action and Milestones (POA&Ms) to resource and remediate information assurance deficiencies			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency							Date: February 2015				
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 2014	FY 2015	FY 2016		
- Conducted annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining IA controls FY 2015 Plans: - Conduct cyber security / information assurance engineering and architecture planning for THAAD information technology systems - Develop and test cyber security/information assurance control measures for Ballistic Missile Defense System (BMDS) THAAD systems - Develop THAAD DIACAP certification and accreditation packages - Support Controls Validation Testing (CVT) of THAAD mission, test, and training systems - Develop Plan of Action and Milestones (POA&Ms) to resource and remediate information assurance deficiencies - Conduct annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining IA controls FY 2016 Plans: - Conduct cyber security / information assurance engineering and architecture planning for THAAD information technology systems - Develop and test cyber security/information assurance control measures for Ballistic Missile Defense System (BMDS) THAAD systems - Develop THAAD DIACAP certification and accreditation packages - Support Controls Validation Testing (CVT) of THAAD mission, test, and training systems - Develop Plan of Action and Milestones (POA&Ms) to resource and remediate information assurance deficiencies - Conduct annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining IA controls - Transition THAAD systems to Risk Management Framework for DoD IT IAW new DoD cybersecurity direction											
Accomplishments/Planned Programs Subtotals							0.799	0.647	0.652		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	390.207	428.277	450.085	-	450.085	461.759	423.843	442.926	460.112	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015	
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>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	41.051	46.387	49.570	-	49.570	50.533	51.363	52.217	54.247	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	50.271	58.503	49.211	-	49.211	58.074	53.655	55.194	57.162	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	34.712	35.598	35.871	-	35.871	35.187	34.509	33.466	33.992	Continuing	Continuing
• D1300639: <i>Fort Drum, New York, IDT Complex</i>	-	-	-	-	-	-	-	-	-	-	-
• D1400634: <i>Clear AFS, AK</i>	17.204	-	-	-	-	-	-	-	-	-	17.204
Remarks											
D. Acquisition Strategy N/A											
E. Performance Metrics N/A											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
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>					

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies : Various MDA Locations	0.000	0.799		0.647		0.652		-		0.652	Continuing	Continuing	Continuing
Subtotal			0.000	0.799		0.647		0.652		-		0.652	-	-	-

Remarks N/A															
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.799	0.647	0.652	-	0.652	-	-	-

Remarks N/A									
-----------------------	--	--	--	--	--	--	--	--	--

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency

Date: February 2015

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 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MC07 Cyber Operations									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
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 Cyber Operations	1	2016	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				Project (Number/Name) MT07 / THAAD Test			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MT07: THAAD Test	55.461	14.086	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2015 funding associated with THAAD testing was transferred to a new program element, PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test

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

A. Mission Description and Budget Item Justification

Terminal High Altitude Area Defense (THAAD) System Test conducts Ballistic Missile Defense System (BMDS) Flight Tests and Ground Tests with other BMDS elements (including BMDS Command Control / Battle Management and Communication, PATRIOT, and Aegis) in accordance with BMDS Integrated Master Test Plan. THAAD System Test coordinates with Operational Test Agencies, conducts flight test operations, performs post-flight test reporting, and performs data distribution and data storage at Pacific Missile Range Facility and the Reagan Test Site.

THAAD Flight Test Execution includes mission planning, pre-flight integration testing, conduct of readiness reviews, test asset transportation, flight test execution and data collection, post flight test reporting and data distribution.

Ground Test Execution includes mission planning, BMDS test integration, conduct of readiness reviews, ground test execution and data collection, and post test reporting and data distribution.

Infrastructure in FY 2014 and Resources in FY 2015 includes sustained and maintenance of test equipment and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing.

Wargames & Exercises provides support to the various Combatant Commanders with model and simulations and subject matter expertise during various exercises.

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

	FY 2014	FY 2015	FY 2016
Title: Flight Test Execution	4.758	-	-
Articles:	-	-	-
Description: THAAD Flight Test Execution includes mission planning, pre-flight integration testing, conduct of readiness reviews, test asset transportation, flight test execution and data collection, post flight test reporting and data distribution.			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MT07 / THAAD Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: -Completed Flight Test Operational-01 (FTO-01) post test reporting and data distribution to provide data for analysis and integration into BMDS Modeling and Simulation. -Initiate pre-mission planning for Flight Test THAAD-18 (FTT-18) scheduled for fourth quarter FY 2015. FY 2014 funds were utilized to support FTT-18 long-lead planning activities that initiate approximately 12 months prior to a flight test event. Long-lead planning activities include range safety and weapon system performance analysis. -Initiate pre-mission planning for Flight Test Operational-02 (FTO-02) Event 2 also scheduled for fourth quarter FY 2015. FY 2014 funds were utilized to support FT0-02 Event 2 long-lead planning activities that initiate approximately 12 months prior to a flight test event. Long-lead planning activities for FTO-02 E2 also include range safety and weapon system performance analysis.				
FY 2015 Plans: -Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
FY 2016 Plans: -Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
Title: Infrastructure		4.134	-	-
Articles:		-	-	-
Description: Infrastructure includes sustainment and maintenance of test equipment and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing.				
FY 2014 Accomplishments: -Provided data management, facilities operations, and post-test reporting in support of Ballistic Missile Defense System (BMDS) System Tests to ensure data collection and readiness for mission execution -Continued Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS) -Conducted a telemetry study to assess design options to improve power-up/encryption verification, radio frequency downlink, upper-band frequency transmission, transmitter modulation efficiency, and video stream compression -Conducted an analysis of each prospective telemetry system test component and developed a plan to eliminate critical component obsolescence				
FY 2015 Plans: -Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
FY 2016 Plans:				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / Ballistic Missile Defense Terminal Defense Segment	Project (Number/Name) MT07 / THAAD Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
-Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
Title: Ground Test Execution		5.109	-	-
Articles:		-	-	-
Description: Ground Test Execution includes mission planning, BMDS test integration, conduct of readiness reviews, ground test execution and data collection, post test reporting and data distribution.				
FY 2014 Accomplishments:				
-Continued THAAD participation in Missile Defense Agency (MDA) Ground Test operational scenario events (GT-04) to ensure THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with Command and Control, Battle Management, Communications (C2BMC) and forward-based Army Navy Transportable Radar Surveillance and Control (AN/TPY-2)				
-Provided pre-mission planning, pre and post mission analysis, reporting support, and execution to BMDS Ground Test campaigns				
-Continued Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)				
FY 2015 Plans:				
-Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
FY 2016 Plans:				
-Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test System (BMDS)				
Title: Resources		-	-	-
Articles:		-	-	-
Description: Resources include sustainment and maintenance of test labs and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing.				
FY 2014 Accomplishments:				
N/A				
FY 2015 Plans:				
-Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
FY 2016 Plans:				
-Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test				
Title: Wargames and Exercises		0.085	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015
<i>Articles:</i> Description: See planned accomplishments FY 2014 Accomplishments: -Provided support to the various Combatant Commands (COCOM) with model and simulations and subject matter expertise during the exercise events. Continue to assist in the development/refining of Tactics, Techniques, and Procedures (TTP's) as well as Pre-Planned Responses (PPR's) to incorporate in further exercises, ground, and flight test events. Demonstrate THAAD capability and limitations to the warfighter community in the Integrated and Missile Defense (IAMD) environment. FY 2015 Plans: -Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test FY 2016 Plans: -Plans for this scope are included in PE 0604876C: Ballistic Missile Defense Terminal Defense Segment Test) environment		-	-
Accomplishments/Planned Programs Subtotals		14.086	-
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
THAAD awards Indefinite Delivery Indefinite Quantity (IDIQ) Task Orders on the Advanced Capability Development (ACD) contract for the continuation of THAAD 2.0 development and test as described and approved in the MDA Integrated Master Test Plan. The discrete task orders allow management and tracking of Development work.			
E. Performance Metrics			
N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
0400 / 4						PE 0603881C / Ballistic Missile Defense Terminal Defense Segment				MT07 / THAAD Test					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			-	-		-		-		-		-	-	-	-
Remarks															
N/A															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			-	-		-		-		-		-	-	-	-
Remarks															
N/A															
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Flight Test Execution - Execution, Support and Planning	Various	MDA : Ft. Belvoir, VA/Huntsville, AL	26.337	0.147		-		-		-		-	-	26.484	-
Flight Test Execution - Planning, Analysis, and Execution	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	18.624	4.611		-		-		-		-	-	23.235	-
Infrastructure - Range Infrastructure	Various	MDA : Ft. Belvoir, VA/Huntsville, AL	1.130	4.134		-		-		-		-	-	5.264	-
Infrastructure - Range Infrastructure Prime	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	2.678	-		-		-		-		-	-	2.678	-
Ground Test Execution - BMDS Ground Test Support	MIPR	US Army AMRDEC : Huntsville, AL	4.909	2.626		-		-		-		-	-	7.535	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency													Date: February 2015		
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>					Project (Number/Name) MT07 / <i>THAAD Test</i>				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Ground Test Execution - Support and Planning	MIPR	MDA : Ft. Belvoir, VA/Huntsville, AL	1.623	2.483		-		-		-		-	-	4.106	-
Resources - Test and Range Infrastructure	MIPR	Various : Huntsville, AL	0.000	-		-		-		-		-	-	-	-
Wargames and Exercises - Wargames and Exercises	MIPR	MDA / SMDC : Huntsville, AL	0.160	0.085		-		-		-		-	-	0.245	-
Subtotal			55.461	14.086		-		-		-		-	-	69.547	-

Remarks
 N/A

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			-	-		-		-		-		-	-	-	-

Remarks
 N/A

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			55.461	14.086	-	-	-	-	-	69.547	-

Remarks
 N/A

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency			Date: February 2015		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
0400 / 4		PE 0603881C / Ballistic Missile Defense Terminal Defense Segment		MT07 / THAAD Test	

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 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Fast Phoenix (BMDS Ground Test)	✦																											
GTI-04e Part 2 (BMDS Ground Test)	✦	✦	✦																									
Fast Exchange HWIL (BMDS Ground Test)				✦																								
Fast Exchange Dist (BMDS Ground Test)				✦																								

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
GTI-04e Part 2 (BMDS Ground Test)	1	2014	3	2014
Fast Exchange HWIL (BMDS Ground Test)	3	2014	3	2014
Fast Exchange Dist (BMDS Ground Test)	4	2014	4	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD06: Patriot Advanced Capability-3 (PAC-3)	36.837	1.049	1.082	1.154	-	1.154	1.179	1.197	1.213	1.261	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

Phased Array Tracking Radar Intercept Of Target (PATRIOT) Advanced Capability (PAC-3) is one of the most mature elements of the Ballistic Missile Defense System (BMDS) and is now operational with the U.S. Army. It is a land-based element built upon the proven PATRIOT air and missile defense infrastructure.

The Army is responsible for production and further development of Advanced Capability-3 System; the Missile Defense Agency remains responsible for the Ballistic Missile Defense System interoperability and integration efforts.

Lower Tier Project Office (LTPO) will utilize Missile Defense Agency funds to further the integration of PATRIOT into the BMDS.

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

	FY 2014	FY 2015	FY 2016
Title: General Support	1.049	1.082	1.154
Articles:	-	-	-
Description: PATRIOT Advanced Capability (PAC-3) is a U.S. Army short range BMDS that interfaces with the Ballistic Missile Defense System. Missile Defense Agency funds PATRIOT participation in BMDS interoperability integration efforts.			
FY 2014 Accomplishments: -Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by MDA based on the Transfer and Transition Plan Annex L.			
FY 2015 Plans: -Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by Missile Defense Agency (MDA) based on the Transfer and Transition Plan Annex L.			
FY 2016 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015	
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 2014	FY 2015
-Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by Missile Defense Agency (MDA) based on the Transfer and Transition Plan Annex L.			
Accomplishments/Planned Programs Subtotals		1.049	1.082
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy The planned acquisition strategy for PATRIOT (Phased Array Tracking Radar Intercept on Target) support awards Task Orders on multiple contract vehicles and memorandum of Agreements with other government agencies. The program is considering opportunities for potential competitive awards.			
E. Performance Metrics N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
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>							

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
General Support - Evolutionary Development Program (EDP) Task 2	SS/FFP	Multiple : Multiple	32.360	-		-		-		-		-		32.360	64.720	32.360
Subtotal			32.360	-		-		-		-		-		32.360	64.720	32.360

Remarks N/A																
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
General Support - General Support	C/FFP	Intuitive Research and Technology / Wyle CAS / SAIC : Huntsville, AL	4.477	1.049		1.082		1.154		-		1.154		Continuing	Continuing	Continuing
Subtotal			4.477	1.049		1.082		1.154		-		1.154		-	-	-

Remarks N/A																
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-		-	-	-

Remarks N/A																
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015		
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>				

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			-	-		-		-		-		-	-	-	-

Remarks N/A															
-----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.837	1.049		1.082		1.154		-		1.154	-	-	-

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.													
---	--	--	--	--	--	--	--	--	--	--	--	--	--

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
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 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MD06 Patriot Advanced Capability-3 (PAC-3)									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
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 Patriot Advanced Capability-3 (PAC-3)	1	2016	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD40: Program-Wide Support	20.327	25.425	17.341	10.029	-	10.029	10.888	13.162	11.642	13.419	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note In FY 2015 and FY 2016, Program Wide Support reflects a proportional change as a result of decreases in Ballistic Missile Defense Terminal Defense Segment. 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 Program-Wide Support (PWS) contains non-headquarters management costs in support of Missile Defense Agency (MDA) functions and activities across the entire Ballistic Missile Defense System (BMDS). It Includes Government Civilians, Contract Support Services, and Federally Funded Research and Development Center (FFRDC) support. This provides integrity and oversight of the BMDS as well as supports MDA in the development and evaluation of technologies that will respond to the changing threat. Additionally, PWS includes Global Deployment personnel and support performing deployment site preparation and activation and, provides facility capabilities for MDA Executing Agent locations. Other MDA wide costs includes: physical and technical security; civilian drug testing; audit readiness; the Science, Technology, Engineering, and Mathematics (STEM) program; legal services and settlements; travel and agency training; office and equipment leases; utilities; data and unified communications support; supplies and maintenance; materiel and readiness and central property management of equipment; and similar operating expenses. Program Wide Support 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 Program, 0603913C Israeli Cooperative Program and 0901598C Management Headquarters).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2014	FY 2015	FY 2016	
Title: Program Wide Support Articles: Description: N/A FY 2014 Accomplishments: See paragraph A: Mission Description and Budget Item Justification FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification FY 2016 Plans: See paragraph A: Mission Description and Budget Item Justification									25.425	17.341	10.029	
									-	-	-	
Accomplishments/Planned Programs Subtotals									25.425	17.341	10.029	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015
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>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
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>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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)	MIPR	Various : VA	0.000	0.911		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	2.658	1.880		3.735	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CA, CO, VA	0.000	2.795		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	Various : MDA Multi: AL, CO, CA, VA,	0.000	14.049		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support International and Materiel and Readiness	MIPR	Various : Multi: AL, VA, Aust, Japan	1.099	-		0.849	Oct 2014	0.428	Oct 2015	-		0.428	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, VA	16.275	5.790		12.217	Jan 2015	9.006	Jan 2016	-		9.006	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi: AL, VA	0.295	-		0.540	Aug 2015	0.595	Aug 2016	-		0.595	Continuing	Continuing	Continuing
Subtotal			20.327	25.425		17.341		10.029		-		10.029	-	-	-
Remarks N/A															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			20.327	25.425		17.341		10.029		-		10.029	-	-	-
Remarks N/A															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency

Date: February 2015

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 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MD40 Program-Wide Support									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency			Date: February 2015
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	2016	4	2020