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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	635.123	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	577.550	206.874	232.170	269.921	-	269.921	273.114	275.395	260.852	283.287	Continuing	Continuing
MC01: <i>Cyber Operations</i>	-	-	0.538	0.547	-	0.547	0.556	0.573	0.583	0.600	Continuing	Continuing
MT01: <i>C2BMC Test</i>	-	41.520	54.252	56.237	-	56.237	57.401	52.582	59.577	45.960	Continuing	Continuing
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	45.024	79.068	96.208	91.111	-	91.111	98.293	104.913	101.175	102.539	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	12.549	16.969	22.151	25.668	-	25.668	26.818	29.062	30.750	33.252	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 OCO Request will be submitted at a later date.

Note

The FY 2014 increase of \$42.239 million reflects a realignment of funding from Ballistic Missile Defense Technology Program Element 0603175C to Ballistic Missile Defense Command and Control, Battle Management and Communications Program Element 0603896C to realign funding for Spiral 8.2 Capability Development and Enterprise Sensors Lab.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense Command and Control, Battle Management and Communications (C2BMC) Program establishes the System by linking together the external sensors and weapons of independent elements into a layered missile defense system such that the whole is more capable and robust than the sum of its parts -- thus increasing the footprint of the Ballistic Missile Defense System (BMDS) with greater performance and defensive coverage. The C2BMC enables the BMDS to manage complex threats -- near simultaneous enemy missile shots aimed at theater, regional, or homeland assets. The systems linked through C2BMC include Phased Array Tracking Radar Intercept on Target (PATRIOT), Terminal High Altitude Area Defense (THAAD), Aegis Ballistic Missile Defense (BMD), Ground Based Midcourse Defense (GMD); and sensors such as the Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar, Sea-Based X-Band Radar (SBX), Space-Based Infrared System (SBIRS), and (BMDS) Overhead Persistent Infra-Red (OPIR) Architecture (BOA). The C2BMC Program will ship a C2BMC Deployable Interface Node (CDIN) in support of a second forward based AN/TPY-2 to the Pacific Command. The C2BMC program will install communications, support Hardware-in-the-Loop (HWIL) integration testing, provide operations and sustainment, and training.

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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Based on the Missile Defense Agency's defined architectures and system specifications, the C2BMC program will provide the warfighter the capability to plan the Ballistic Missile Defense (BMD) fight while concurrently tracking all potential ballistic missile threats, and pairing any sensor with any shooter to defeat ballistic missile threats at any range, in any phase, in all theaters. C2BMC battle management, via the Global Engagement Manager (GEM), will deliver full AN/TPY-2 X-Band radar sensor control and capabilities for improved threat object correlation which calculates a common threat track from multiple sensors through data fusion, with sufficient data accuracy and timeliness for BMDS weapon elements to enable successful engagements via Link-16 and satellite communications. The C2BMC program also works to increase coalition partners' capabilities.

This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is to develop and field an integrated set of Element capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding

The C2BMC Program will expand defense of the United States, allies, and deployed forces by continuing work that enables a coordinated missile defense against short - to long - range threats in multiple regions/theaters.

One of the best ways to dissuade, deter, and defeat ballistic missile threats is through integrated ballistic missile defense capabilities: weapons; sensors; and command and control, battle management, and communications. A potential or actual attack may cross regions and may fly higher and faster than stand-alone, autonomous capabilities operated by a single Military Service can defend against. Integrated Ballistic Missile Defense (BMD) capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide the best sensor information about the enemy missiles location and track a more diverse and effective set of weapon options to be used by the Combatant Commander to defeat the attack; with all connected by a unifying Command and Control, Battle Management and Communications (C2BMC) system. As a result, an effort funded in a program element may be critical to the success of efforts in other program elements. These connections are referred to as interdependencies.

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

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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	366.552	418.355	433.470	-	433.470
Current President's Budget	344.431	405.319	443.484	-	443.484
Total Adjustments	-22.121	-13.036	10.014	-	10.014
• Congressional General Reductions	-0.476	-0.196			
• Congressional Directed Reductions	-6.000	-12.840			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	17.239	-			
• SBIR/STTR Transfer	-4.306	-			
• Other Adjustment	-28.578	-	10.014	-	10.014

Change Summary Explanation

FY 2015 increase of \$10.014 reflects realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	577.550	206.874	232.170	269.921	-	269.921	273.114	275.395	260.852	283.287	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

RDT&E Articles are defined as major C2BMC capability increments (identified as a specific Spiral) which are fielded at multiple locations including Combatant Commands and other operational sites. Budget Project MD01 includes two RDT&E articles. First, Spiral 6.4, which was successfully completed in FY 2011/FY 2012. Second, Spiral 8.2, which is currently in development and expected to be fielded in FY 2017.

The key test event for development is start of Cycle 2, Simulation-Based Verification, when software completes development and begins testing with other Ballistic Missile Defense System (BMDS) Elements. Completion of Cycle 5, Site Activation Testing, and successful participation in BMDS ground test campaigns, verifies delivery of fully functioning operational software.

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

The Command and Control, Battle Management and Communications (C2BMC) Program will provide the warfighter the capability to plan the Ballistic Missile Defense (BMD) fight while concurrently tracking all potential ballistic missile threats, and pairing any sensor with any shooter to defeat ballistic missile threats at any range, in any phase, in all theaters. The C2BMC Program will also work to increase coalition partners' capabilities.

The C2BMC Program will expand defense of the United States, allies, and deployed forces by continuing work that enables a coordinated missile defense against short - to long - range threats in multiple regions/theaters.

The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. Command Control Battle Management and Communications will update C2BMC sensor tasking to support the capabilities of the Near-term phase, mature advanced discrimination and battle management techniques in support of the Mid-term capability, and conduct element and system level testing to support Near, and Mid-term phases.

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Specific goals are to deliver the following, which include BMDS planning, situational awareness, sensor management, and engagement coordination functions incorporated in BMDS Integrated Build C and D specifications approved content:

- Fully integrates BMD Planner and situational awareness displays with integrated intelligence information and defended asset priority schemes
- Continuity of Operations Global Engagement Manager (GEM) at Northern Command (NORTHCOM) (Missile Defense Integration and Operations Center (MDIOC))
- Incorporate BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) sensor data for radar and shooter (Aegis, Terminal High Altitude Area Defense (THAAD)) cueing
- Update C2BMC model (BCM), for system-level performance assessments that have been validated against operational C2BMC performance
- Distributed Training System to provide COCOM exercise and training capabilities without scheduling downtime. Training Support System to provide COCOMs and schoolhouses with a flexible and small footprint training capability
- Install more effective network monitoring and computer network defense software and hardware with in C2BMC Control Center (includes the BMDS Network Operations and Security Center (BNOSC))
- Information Assurance (IA) monitoring and modifications of global network devices at all C2BMC locations
- Support system flight and ground testing in accordance with the MDA Integrated Master Test Plan (IMTP)

C2BMC ELEMENT

The Ballistic Missile Defense System (BMDS) Command and Control, Battle Management and Communications (C2BMC) will provide a regional situational awareness and battle management capability at Pacific Command (PACOM), Northern Command (NORTHCOM), European Command (EUCOM) and Central Command (CENTCOM). C2BMC will move to a blade-based computing architecture in Spiral 8.2 to support reliability, maintainability, and modularity.

The Ballistic Missile Defense (BMD) Planner will evolve to a network enabled capability designed to interface with service and allied planning components. Improvements include support for rapid re-planning, enhanced mapping products and services, updating the Air and Missile Defense Workstation (AMDWS) interface to incorporate Terminal High Altitude Area Defense (THAAD), and an initial interface with North Atlantic Treaty Organization (NATO) planning systems.

C2BMC will evolve networked interfaces to expose data over the Secret Internet Protocol Router Network (SIPRNET) providing for display of individual weapon system engagement and coordination information resulting in an integrated common operating picture across the Combatant Commands.

C2BMC battle management, via the Global Engagement Manager (GEM), will deliver full Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) X-Band radar sensor control and capabilities:

- Improved threat object correlation which calculates a common threat track from multiple sensors through data fusion, with sufficient data accuracy and timeliness for BMDS weapon Elements to enable successful engagements via Link-16 and Extremely High Frequency (EHF) satellite communications
- Incorporation of BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) and upgraded Space Based Infra-Red System (SBIRS) sensor data

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- Improved BMD system discrimination logic using multiple sensors discrimination results, selecting the best result, and assigning object type to common threat tracks
- Sensor management and weapons engagement coordination aids to direct the BMDS fight and make efficient use of limited inventory

C2BMC Spiral 8.2 Distributed Training System (DTS) planning and development enables COCOMs to support large-scale exercises and training events without scheduling downtime of operations. The DTS will stimulate C2BMC operational screens at COCOM Air Operations Center (AOC), Maritime Operations Center (MOC), and Headquarters. Capabilities will support training with theater/regional assets and coalition partners, and updated simulations to represent current BMDS system capabilities. C2BMC Spiral 8.2 Training Support System (TSS) planning and development provides a flexible scenario and small footprint training system for small scale COCOM training events and schoolhouses. The TSS will integrate with Missile Warning and Air Operations Center training systems to provide an integrated training system.

The Ballistic Missile Defense (BMD) Communications Network ties together an expanding set of sensors and weapons systems enabling the National Command Authority and the commanders at the strategic, theater and tactical levels to optimally engage ballistic missile threats including near simultaneous theater, regional and homeland attacks. The BMD Communications Network provides a robust, end-to-end, high availability, operational communications network (COMNET) infrastructure with diverse paths that quickly and unambiguously shares information across the global Ballistic Missile Defense System (BMDS). This sharing of information is performed securely with special emphasis on preventing cyber attack via the C2BMC Control Center (includes the BMDS Network Operations and Security Center (BNOSC)). The C2BMC system and networks are protected by layered defenses that start with circuits comprising the BMDS Communications Network (BCN) that are isolated from the known networks. Where the BCN and the known networks meet, layers of firewalls, encryption devices, routers and switches each with specific access control lists (ACLs), further protect the internal systems and allow only identified and approved users and systems access to the C2BMC data. Effective network management will coordinate and integrate across diverse equipment platforms, interface with other DoD communications systems, evolve information standards and capabilities, and will adhere to the DoD Information Assurance Certification and Accreditation Process (DIACAP). Defense Information Systems Agency (DISA) services are also leveraged in providing world-wide communications. Planned improvements such as dynamic real-time network management and monitoring will enable the warfighter to monitor the connection to BMDS weapons and anticipate and remedy issues as they occur.

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

	FY 2013	FY 2014	FY 2015
<p>Title: Spiral Development</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>- Continued Spiral 8.2 engineering and design and Ballistic Missile Defense (BMD) Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration</p>	<p>164.325</p> <p>-</p>	<p>182.821</p> <p>-</p>	<p>205.743</p> <p>-</p>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Updated C2BMC model, validated by Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), for system-level performance assessments. CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - Continued to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) - Upgraded DoD teleports to enhance satellite communications (SATCOM) connectivity and add additional Combatant Commands to operations - Acquired and installed Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continued Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Completed BMDS Overhead Persistent Infrared Architecture (BOA) Critical Design Review (CDR) and began a Dynamic Behavior Study to support the C2BMC - BOA Interface Control Document (ICD). - Developed the initial Ballistic Missile Defense System (BMDS) C2BMC Model for Spiral 8.2 - Continued development of Spiral 8.2 software, hardware, and network capability - Designed, procured, and integrated Spiral 8.2 test infrastructure and tools at Missile Defense Integration and Operations Center (MDIOC) to support Spiral 8.2 verification testing and distributed testing support - Participated in and analyzed results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Completed development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Delivered Spiral 8.2 prototype of the Two-Factor Authentication (Smart-card) capability on the C2BMC architecture. Additional improvements to remote administration of the systems, remote monitoring and event response will improve the security configuration management of this growing architecture. Automated anti-virus and patch management will allow for faster deployment of critical patches and anti-virus signatures keeping the systems secured in a timely manner. - Finalized the C2BMC Command and Control (C2) and battle management architecture, including Enhanced C2BMC advanced technologies, to fulfill the European Phase Adaptive Approach (EPAA) 3 Architecture - Completed requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 3 requirements - Completed a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design - Completed NATO Capability 2 Interface Control Documents (ICDs) <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue Spiral 8.2 engineering and design and BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration 			

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Update C2BMC model, validated by Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), for system-level performance assessments. CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - Continue to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) - Upgrade DoD teleports to enhance satellite communications (SATCOM) connectivity - Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continue Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Continue development of the BMDS C2BMC Model for Spiral 8.2 modeling and simulation - Continue development of Spiral 8.2 software, hardware, and network capability - Design, procure, and integrate Spiral 8.2 test infrastructure and tools at Missile Defense Integration and Operations Center (MDIOC) to support Spiral 8.2 verification testing and distributed testing support - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Complete development and testing of new BMDS Overhead Persistent Infrared Architecture (BOA) baseline release to support Spiral 8.2 integration and testing - Complete development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Spiral 8.2 will prototype and deliver the Two-Factor Authentication (Smart-card) capability on a classified weapons system. Additional improvements to remote administration of the systems, remote monitoring and event response will improve the security configuration management of this growing architecture. Automated anti-virus and patch management will allow for faster deployment of critical patches and anti-virus signatures keeping the systems secured in a timely manner. - Initiate C2BMC and NATO planning demonstrations - Continue to support NATO live fire events - Continue to document international interfaces and traceability to BMDS requirements - Initiate EPAA 2 situational awareness displays IAW bi-lateral agreements - Continue development of capabilities addressing EPAA Phase 3 requirements resulting in an upgraded Spiral with plan load during operations, protection capability (PROCAP) functionality, record and playback, a BOA 6.1 or later release, and Engage on Remote support with Aegis 5.1. Task initiated in FY 2013 and scheduled for completion to support GTX-07b (FY 2018). - Deliver a C2BMC Deployable Interface Node (CDIN) in support of a second forward based AN/TPY-2 deployment to PACOM. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Continue Spiral 8.2 engineering and design and BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration 			

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Update C2BMC model, validated by Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), for system-level performance assessments. CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - Continue to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) - Upgrade DoD teleports to enhance satellite communications (SATCOM) connectivity - Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continue Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Continue development of the BMDS C2BMC Model for Spiral 8.2 modeling and simulation - Continue development of Spiral 8.2 software, hardware, and network capability - Design, procure, and integrate Spiral 8.2 test infrastructure and tools at Missile Defense Integration and Operations Center (MDIOC) to support Spiral 8.2 verification testing and distributed testing support - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Continue development and testing of new BMDS Overhead Persistent Infrared Architecture (BOA) baseline release to support Spiral 8.2 integration and testing - Complete development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Spiral 8.2 will develop the Two-Factor Authentication (Smart-card) capability on a classified weapon system. Additional improvements to remote administration of the systems, remote monitoring and event response will improve the security configuration management of this growing architecture. Automated anti-virus and patch management will allow for faster deployment of critical patches and anti-virus signatures keeping the systems secured in a timely manner. - Continue to document international interfaces and traceability to BMDS requirements - Continue EPAA Phase 2 situational awareness displays project IAW bi-lateral agreements - Initiate C2BMC and NATO planning demonstrations - Continue to support NATO live fire events - Continue development of capabilities addressing EPAA Phase 3 requirements resulting in an upgraded Spiral with plan load during operations, protection capability (PROCAP) functionality, record and playback, a BOA release (6.1 or later), and Engage on Remote support with Aegis 5.1. - Continue requirements allocation and specification for advanced C2BMC technologies to exploit space-based data - Continue site planning, scheduling and hardware acquisition to support planned FY 2017 deployment of C2BMC S8.2 capability. - Complete Discrimination Improvements for Homeland Defense (DIHD) Near-term capability development and Element-level testing of BMDS sensor management improvements in the Command, Controls, Battle Management and Communications. - Complete integration phase of DIHD Near-term testing via GTI-06. 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Conduct data collection and analysis for final assessment of discrimination technology candidates planned for DIHD Mid-term improvements. - Continue system maturation and performance characterization of the Simultaneous Correlation of Unambiguous Tracks (SCOUT) Algorithm and the Advanced SCOUT Prototype (ASP) node, a selected component of the MDA initiative for Mid-Term DIHD initiated in FY14 within PE 06031719C, Advanced C4ISR. 			
<p>Title: C2BMC Experimentation Lab (X-Lab)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: The C2BMC Experimentation Lab (X-Lab) focused on prototyping, demonstrating, and analyzing new C2BMC capabilities that will enable (1) status reporting and tasking of Ballistic Missile Defense System (BMDS) elements, (2) integrated battle management with smart allocation of sensor, shooter and other critical resources, (3) robust communications between BMDS elements, and (4) a C2BMC architecture that meets near term needs while enabling future growth. While the focus of the X-Lab is on demonstrating the feasibility of new capabilities for insertion into future C2BMC cycles, Spirals 8.2 and 6.4; the X-Lab will also assess current Spiral 6.4 C2BMC capabilities to establish baselines for performance metrics and to assist in verifying requirements. The FY 2013 focus was:</p> <ul style="list-style-type: none"> - Tasking of Aegis, Terminal High Altitude Area Defense (THAAD), and infrared sensors through cues from space based assets and other BMDS assets: Spirals 6.4 and 8.2 - Demonstrating the communications, concept of operations (CONOPS) and cueing logic required for ensuring a remote engagement authorized quality cue is generated and forwarded to Aegis: Spiral 8.2 - Evaluating C2BMC architectures to include evaluation of the BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance in the Space Based Infrared Systems (SBIRS) Operations Migration Capability (OMC) environment: Spiral 8.2 - Demonstrating communications and CONOPS to deliver a boost or ballistic cue to Space Tracking and Surveillance System (STSS) as a Precision Tracking Space System (PTSS) surrogate in flight tests - Prototyping battle management capabilities using associated-features track processing, system level discrimination, and pass BMDS sensor generated cues to external sensors for hit assessment <p>FY 2014 Plans: The C2BMC Experimentation Lab (X-Lab) prototypes and demonstrates new C2BMC capabilities. The FY 2014 focus will be:</p>	12.199 -	4.733 -	6.416 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Evaluate algorithms and data distribution architectures for transmitting system tracks that include features. This will enable weapon systems to form Target Object Maps that allow an engagement beyond line of sight of the organic radar to utilize the full extent of the physical range of the interceptor (Engage-on-Remote)</p> <p>- Develop interfaces and data distribution architectures that implement a common cueing protocol with the Joint Overhead Persistent Infra-Red (OPIR) Ground (JOG), Space Based Infra-Red System (SBIRS), and MDA system architectures to improve efficiency in cueing and decrease sustainment costs</p> <p>- Characterize the performance of engineering releases of C2BMC Spiral 8.2 to mitigate risks early in the development process</p> <p>FY 2015 Plans: The C2BMC Experimentation Lab (X-Lab) prototypes and demonstrates new C2BMC capabilities. The FY 2015 focus will be:</p> <p>-Demonstrate algorithms and data distribution architectures for transmitting system tracks that include features. This will enable weapon systems to form Target Object Maps that allow an engagement beyond line of sight of the organic radar to utilize the full extent of the physical range of the interceptor (Engage-on-Remote)</p> <p>- Evaluate interfaces and data distribution architectures that implement a common cueing protocol with the Joint Overhead Persistent Infra-Red (OPIR) Ground (JOG), Space Based Infra-Red System (SBIRS), and MDA system architectures to improve efficiency in cueing, increase battlespace for Homeland Defense, and decrease C2BMC sustainment costs</p> <p>- Characterize the performance of engineering releases of C2BMC Spiral 8.2 to mitigate risks early in the development and integration processes</p> <p>Advanced C4ISR technology products completed in FY2014 will transition to C2BMC and Sensors Program Elements. The Agency will continue to investigate enabling technology for the integration of the Services command and sensor networks into the Ballistic Missile Defense System (BMDS) in the C2BMC Program Element.</p>			
<p>Title: C2BMC Communications</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>- Provided Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services</p> <p>- Continued support for C2BMC 6.4 in European Command (EUCOM), Strategic Command (STRATCOM), Northern Command (NORTHCOM), Pacific Command (PACOM), and Central Command (CENTCOM)</p> <p>- Continued development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management; Sensors Element funded hardware, installation, and checkout)</p>	30.350 -	39.223 -	42.859 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Participated in and analyzed results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP) - Resolved real-time operational issues through the C2BMC Control Center and BMDS Network Operations and Security Center (BNOSC) - Operated BNOSC 24 hours a day, 7 days a week, 365 days a year - Provided global BMDS communications via leased Defense Information Services Agency (DISA) circuit lines - Provided and supported communications circuits for fielded C2BMC locations - Provided integrated logistics support planning and management and sustaining engineering support for fielded hardware and software - Provided support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Acquired and installed Enterprise Work Stations, Web Browsers, and Planners per warfighter requirements <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Design and implement redundant fiber path in support of Clear Air Force Station (AFS) Upgraded Early Warning Radar (UEWR) integration into the Ballistic Missile Defense System (BMDS) - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Install AN/GSC-52B SATCOM terminal, Modernization Enterprise Terminal #1 (MET#1), at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Continue support for C2BMC 6.4 in the European Command (EUCOM), Strategic Command (STRATCOM), Northern Command (NORTHCOM), Pacific Command (PACOM), and Central Command (CENTCOM) - Continue development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management) and associated Long Haul Communications Transport (LHCT) in support of 2nd Radar deployment to Japan. - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Resolve real-time operational issues through the C2BMC Control Center (CCC) (includes BMDS Network Operations and Security Center (BNOSC)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit - Provide SME support to fielded C2BMC locations to ensure continued performance and operations - Provide sustaining engineering support for fielded network equipment - Provide support of AN/TPY-2 radar communications nodes to ensure continued performance and operations - Upgrade LHCT services at AN/TPY-2 locations in CENTCOM and EUCOM to provide redundant and diverse paths 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Design and implement changes at all four Maritime Operations Centers (MOCs), to accommodate changes to the Navy's Automated Digital Network System (ADNS) INC III</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Continue engineering support to AN/GSC-52B SATCOM terminal, Modernization Enterprise Terminal (MET), at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Continue network and communications support for C2BMC 6.4 in the European Command (EUCOM), Strategic Command (STRATCOM), Northern Command (NORTHCOM), Pacific Command (PACOM), and Central Command (CENTCOM) - Continue engineering and deployment support of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management) - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Resolve real-time operational issues through the C2BMC Control Center (CCC) (includes BMDS Network Operations and Security Center (BNOSC)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit - Provide SME support to fielded C2BMC locations to ensure continued performance and operations - Provide sustaining engineering support for fielded network equipment - Provide support of AN/TPY-2 radar communications nodes to ensure continued performance and operations including installation of new AN/TPY-2 radar communications node at a site in Japan and installation and support of AN/GSC-52B SATCOM terminals, Modernization of Enterprise Terminal-Transportable (MET-T), at a site in Japan - Acquisition of network circuits to support planned FY 2017 S8.2 capability deployment - Fielding of protected Anti-Jam (AJ) /Anti-Scintillation (AS) Wideband Network System (PAAWNS) to missile defense locations worldwide - Install improved LHCT at 2nd AN/TPY-2 radar location in Japan 			
<p>Title: Enterprise Sensors Lab (ESL)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p>	-	5.393	14.903
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments are reported in budget project MD25 PE 0603175C			
<i>FY 2014 Plans:</i> The Enterprise Sensors Lab (ESL) prototypes and demonstrates algorithms that fuse space, airborne, and terrestrial-based sensor data to provide three-dimensional (3-D) tracks of threat missiles to enable sensor cueing and Launch/Engage-on-Remote (LOR/EOR) using all sensors. Additionally, ESL extracts features in support of hit assessment with a goal of enabling a shoot-look-shoot capability. The FY 2014 focus will be: - Incorporate the Space Based Infra-Red System (SIBRS) Geosynchronous Earth Orbit Starer and other new Overhead Persistent Infra-Red (OPIR) sensors to form a more accurate 3-D track - Develop a joint Infrared/Radio Frequency algorithm library to enable sensor data fusion to be incorporated into multiple systems with improved efficiency and reduced maintenance costs - Prototype algorithms to extract dimmer targets from sensor data to extend the length of the track and enable additional sensor cueing opportunities			
<i>FY 2015 Plans:</i> The Enterprise Sensors Lab (ESL) prototypes and demonstrates algorithms that fuse space, airborne, and terrestrial-based sensor data to provide three-dimensional (3-D) tracks of threat missiles to enable sensor cueing and Launch/Engage-on-Remote (LOR/EOR) using all sensors. Additionally, ESL extracts features in support of hit assessment with a goal of enabling a shoot-look-shoot capability. - Incorporate the Space Based Infra-Red System (SBIRS) Geosynchronous Earth Orbit Scanner Wideband Data and other new Overhead Persistent Infra-Red (OPIR) sensors data feeds to form a more accurate 3-D track - Demonstrate joint Infrared/Radio Frequency algorithms in playbacks of prior flight test to assess sensor data fusion of multiple systems with improved efficiency and reduced maintenance costs - Enhance prototype algorithms to extract dimmer targets from sensor data to extend the length of the track and enable additional sensor cueing opportunities			
Accomplishments/Planned Programs Subtotals	206.874	232.170	269.921

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

Remarks

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned for Spiral 8.4 capability development.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>						

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
Spiral Development - BOA Development	SS/CPAF	Northrop Grumman Space and Mission Systems : Colorado Springs, CO	0.000	-		-		6.573	Oct 2014	-		6.573	Continuing	Continuing	Continuing
Spiral Development - C2BMC Hardware/ Software Development, Integration & Test (I&T)	SS/IDIQ	Lockheed Martin Team : Arlington, VA	117.929	108.411		99.750	Dec 2013	120.091		-		120.091	Continuing	Continuing	Continuing
Spiral Development - C2BMC Integration	Various	Services DISA Agency : -	125.047	2.713		19.789	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Spiral Development - C2BMC Mid-Term DIHD-SCOUT	SS/CPFF	Northrop Grumman Space and Mission Systems : Colorado Springs, CO	0.000	-		-		16.300	Oct 2014	-		16.300	Continuing	Continuing	Continuing
Spiral Development - C2BMC Mid-Term DIHD-SCOUT OGA	MIPR	Aviation and Missile Research Development and Engineering Center : Huntsville, AL	0.000	-		-		1.200	Oct 2014	-		1.200	Continuing	Continuing	Continuing
Spiral Development - Contract Support Services	SS/FFP	Cobham Analytic Solutions, Paradigm, CACI, CSC : Arlington, VA/ Huntsville, AL	132.689	23.774		24.338	Oct 2013	22.561		-		22.561	Continuing	Continuing	Continuing
Spiral Development - Federally Funded Research & Development Centers / University Affiliated Research Center	MIPR	MITRE, IDA, ORNL, Aerospace, JHU/APL, GTRI : Arlington, VA/ Huntsville, AL/ Colorado Springs, CO	78.487	14.222		16.140	Oct 2013	16.470		-		16.470	Continuing	Continuing	Continuing
Spiral Development - MDA Civilian, Travel & PCS	Various	- : Arlington, VA/ Huntsville, AL/	44.778	15.205		22.804	Oct 2013	22.548		-		22.548	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
		Colorado Springs, CO													
C2BMC Experimentation Lab (X-Lab) - X-Lab	SS/CPAF	Various / Northrop Grumman Mission Systems : Colorado Springs, CO	19.209	12.199		4.733	Oct 2013	6.416		-		6.416	Continuing	Continuing	Continuing
C2BMC Communications - BNOSC	SS/CPAF	Lockheed Martin Team / JRDC : Colorado Springs, CO	6.761	6.406		3.224	Oct 2013	3.353		-		3.353	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding	SS/CR	DISA, PMDCATS, SPAWAR : Various	39.980	16.051		25.250	Oct 2013	28.988		-		28.988	Continuing	Continuing	Continuing
C2BMC Communications - Communication Leases	SS/CR	DISA : Arlington, VA	6.200	6.143		8.949	Oct 2013	7.993		-		7.993	Continuing	Continuing	Continuing
C2BMC Communications - EUCOM Communications	MIPR	USAFE : Ramstein, DE	6.470	1.750		1.800	Oct 2013	2.525		-		2.525	Continuing	Continuing	Continuing
Enterprise Sensors Lab (ESL) - Enterprise Sensor Lab	SS/CPAF	Northrop Grumman Space and Mission Systems : Colorado Springs, CO	0.000	-		5.393	Oct 2013	14.903		-		14.903	Continuing	Continuing	Continuing
Subtotal			577.550	206.874		232.170		269.921		-		269.921	-	-	-

Remarks
 Funding for Operations and Sustainment is captured in Budget Project MX01 in FY 2012

 In order to more accurately capture the aggregate program of work for C2BMC, in FY 2012 the PE consolidated communications support and equipment funding that traditionally was aligned to other program elements planned activities (e.g., communications in support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) fielding).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
In order to more accurately capture the aggregate program of work for C2BMC, in FY 2012 the PE consolidated communications support and equipment funding that traditionally was aligned to other program elements planned activities (e.g., communications in support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) fielding).

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	577.550	206.874	232.170	269.921	-	269.921	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency							Date: March 2014		
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
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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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC01: <i>Cyber Operations</i>	-	-	0.538	0.547	-	0.547	0.556	0.573	0.583	0.600	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

Project MC01 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD01 of this PE

A. Mission Description and Budget Item Justification

The funds in this project sustain 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 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 2013	FY 2014	FY 2015
Title: Network/System Certification and Accreditation (C&A)	-	0.538	0.547
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: -Conduct cyber security / information assurance engineering and architecture planning for C2BMC information technology systems.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -Plan and test the IA controls for Ballistic Missile Defense System (BMDS) C2BMC systems. -Develop C2BMC DIACAP certification and accreditation packages. -Conduct Controls Validation Testing (CVT) of C2BMC mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies. -Conduct annual information assurance reviews on the C2BMC enclaves to assess compliance in implementing and maintaining IA controls. <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> -Conduct cyber security / information assurance engineering and architecture planning for C2BMC information technology systems. -Plan and test the IA controls for Ballistic Missile Defense System (BMDS) C2BMC systems. -Develop C2BMC DIACAP certification and accreditation packages. -Conduct Controls Validation Testing (CVT) of C2BMC mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies. -Conduct annual information assurance reviews on the C2BMC enclaves to assess compliance in implementing and maintaining IA controls. 			
Accomplishments/Planned Programs Subtotals	-	0.538	0.547

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

N/A

Remarks

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency Date: March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>
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Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned for Spiral 8.4 capability development. Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency											Date: March 2014				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MC01 / <i>Cyber Operations</i>						

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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) - IA/ CND Network/System C&A	C/CPFF	Torch Technologies : Various	0.000	-		0.538	Jul 2014	0.547		-		0.547	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.538		0.547		-		0.547	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.538	0.547	-	0.547	-	-	-

Remarks
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT01: <i>C2BMC Test</i>	-	41.520	54.252	56.237	-	56.237	57.401	52.582	59.577	45.960	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

N/A

A. Mission Description and Budget Item Justification

TESTING

To ensure C2BMC capabilities delivered are consistent with the Priorities Capabilities List and are interoperable with other Ballistic Missile Defense System (BMDS) components, C2BMC will support system will support system flight and ground testing, and wargames and exercises as detailed in the MDA Integrated Master Test Plan (IMTP).

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

	FY 2013	FY 2014	FY 2015
Title: Integrated Master Test Plan	41.520	54.252	56.237
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
<ul style="list-style-type: none"> - Participated in and analyzed results of ground and flight tests (including FTG-07, FTM-20, and FTO-01), wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP) - Planned, collected data, assessed, examined, and reported on C2BMC spiral integration testing - Supported interoperability and integration of the BMDS program elements - Supported the field testing of the European Deployment -- Provided infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> -- C2BMC Control Center (CCC) -- System Test and Operations Center (STOC) -- Ballistic Missile Defense System (BMDS) Communications Network (BCN) -- BMDS Network Operations and Security Center (BNOSC) -- Distributed Multi-Echelon Distributed Training system (DMETS) 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Continued BMD Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conducted concept development test for virtualized C2BMC services, service oriented architectures - Conducted North Atlantic Treaty Organization (NATO) Multi-National Ensemble Test #3- Conducted Exercise Rapid Arrow 2013 German Live Fire Event <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Plan, collect data, assess, examine, and report on C2BMC spiral integration testing - Support interoperability and integration of the BMDS program elements - Support the field testing of the European and Central Command Deployments - Support European Phased Adaptive Approach (EPAA) Phase 2-3 Situational Awareness (SA) Node deployments - Provide infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> -- C2BMC Command Center (CCC) (Includes BMDS Network Operations and Security Center (BNOSC)) -- System Test and Operations Center (STOC) -- Ballistic Missile Defense System (BMDS) Communications Network (BCN) -- Distributed Multi-Echelon Distributed Training system (DMETS) -- Distributed Training system (DTS) - Complete build-out of Spiral 8.2 Testbed in preparation for Verification Testing - Continue BMD Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conduct concept development test for virtualized C2BMC services, service oriented architectures - Conduct Exercise Rapid Arrow 2014 German/Dutch Live Fire Event - Complete build-out for Cyber Testing in the C2BMC Testbed (CTB) <p>Enterprise Sensors Laboratory (ESL):</p> <ul style="list-style-type: none"> -Demonstrate prototype algorithms for track and measurement level sensor data fusion and feature extraction through flight tests, ground tests and real-world targets of opportunities before incorporation into formal C2BMC spiral builds. Project MT01 funds test operations for the capabilities established in the Enterprise Sensors Laboratory and described in Project MD01. -Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable assessments of track accuracy improvements resulting from incorporation of Space Based Infra-Red System (SIBRS) Geosynchronous Earth Orbit Starer and other new Overhead Persistent Infra-Red (OPIR) sensors 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

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

	FY 2013	FY 2014	FY 2015
<p>-Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable effectiveness evaluations of sensor data fusion enabled through the incorporation of radio frequency data into the existing ESL Infrared three-dimension track formulation processes.</p> <p>-Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable characterization of the capability to extract information from observations of dim upper stages of threat systems and the ability to exploit features extracted from available sensor resource data.</p> <p>-Compile and provide test and demonstration results back to the algorithms development activity in Project MD01 to enable algorithm refinement</p> <p>C2BMC Experimentation Lab (X-Lab):</p> <ul style="list-style-type: none"> - Demonstrate maturing C2BMC technologies and software builds through flight tests, ground tests and real-world targets of opportunities before incorporation into formal C2BMC spiral builds. Project MT01 funds the test operations for the capabilities established in the X-Lab facility and described in Project MD01. -Plan, coordinate, and provide test operations utilizing maturing C2BMC technologies to produce data to enable evaluation of architecture schemas for system track data distribution and common cueing protocols across the Joint OPIR Ground (JOG), Space Based Infra-Red System (SBIRS), and MDA system architectures. -Host and test Spiral 8.2 engineering releases -Compile and provide test and demonstration results back to the development activity in Project MD01 for architecture refinement activities and Spiral 8.2 performance evaluation <p>FY 2015 Plans:</p> <p>Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP)</p> <ul style="list-style-type: none"> - Plan, collect data, assess, examine, and report on C2BMC spiral integration testing - Support interoperability and integration of the BMDS program elements - Support the field testing of the European and Central Command Deployments - Support European Phased Adaptive Approach (EPAA) Phase 2-3 Situational Awareness (SA) Node deployments - Provide infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> -- C2BMC Command Center (CCC) (Includes BMDS Network Operations and Security Center (BNOSC)) -- System Test and Operations Center (STOC) -- Ballistic Missile Defense System (BMDS) Communications Network (BCN) -- Distributed Multi-Echelon Distributed Training system (DMETS) Infrastructure -- Distributed Training system (DTS) 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Complete build-out of Spiral 8.2 Testbed for IMTP scheduled events - Continue C2BMC and NATO planning demonstrations - Continue to support NATO live fire events - Continue development and upgrades for Cyber Testing in the C2BMC Testbed (CTB) <p>Enterprise Sensors Laboratory (ESL):</p> <ul style="list-style-type: none"> -Demonstrate prototype algorithms for track and measurement level sensor data fusion and feature extraction through flight tests, ground tests and real-world targets of opportunities before incorporation into formal C2BMC spiral builds. Project MT01 funds test operations for the capabilities established in the Enterprise Sensors Laboratory and described in Project MD01. -Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable assessments of track accuracy improvements resulting from incorporation of Space Based Infra-Red System (SBIRS) Geosynchronous Earth Orbit Scanner Wideband and other new Overhead Persistent Infra-Red (OPIR) sensor data feeds -Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable effectiveness evaluations of sensor data fusion enabled through the incorporation of radio frequency data into the existing ESL Infrared three-dimension track formulation processes. -Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable characterization of the capability to extract information from observations of dim upper stages of threat systems and the ability to exploit features extracted from available sensor resource data. -Compile and provide test and demonstration results back to the algorithms development activity in Project MD01 to enable algorithm refinement <p>C2BMC Experimentation Lab (X-Lab):</p> <ul style="list-style-type: none"> - Demonstrate maturing C2BMC technologies and software builds through flight tests, ground tests and real-world targets of opportunities before incorporation into formal C2BMC spiral builds. Project MT01 funds the test operations for the capabilities established in the X-Lab facility and described in Project MD01. -Plan, coordinate, and provide test operations utilizing maturing C2BMC technologies to produce data to enable evaluation of architecture schemas for system track data distribution and common cueing protocols across the Joint OPIR Ground (JOG), Space Based Infra-Red System (SBIRS), and MDA system architectures. -Host and test Spiral 8.2 engineering releases -Compile and provide test and demonstration results back to the development activity in Project MD01 for architecture refinement activities and Spiral 8.2 performance evaluation <p>Wargames</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP)			
Program, Planning & Operations M&S participation in System Test Events -Support and analyze models and simulation in accordance with the BMDS IMTP Integrated Master Assessment Plan (IMAP): - Continue development of Spiral 8.2 assessment requirements (Assessment Objectives, Assessment Sub-Objectives, and Critical Assessment Conditions) to capture engineering, test, and analysis data to support S8.2 Technical Capability Declaration, and drive BMDS system test objectives and test resourcing in the BMDS Integrated Master Test Plan (IMTP).			
Accomplishments/Planned Programs Subtotals	41.520	54.252	56.237

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

Remarks

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned for Spiral 8.4 capability development. Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure	SS/CPAF	Northrop-Grumman Corporation : Colorado Springs, CO	0.000	-		1.100	Oct 2013	5.435		-		5.435	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support	MIPR	Various : VA; OH; AL; NM; CA	0.000	-		4.570	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan - Integrated Master Test Plan BMDS Level Testing	SS/IDIQ	Lockheed Martin Team : Arlington, VA; Huntsville, AL; Colorado Springs, CO	0.000	12.899		19.909	Dec 2013	24.848		-		24.848	Continuing	Continuing	Continuing
Integrated Master Test Plan - Integrated Master	SS/CPAF	Northrop-Grumman Corporation :	0.000	28.621		28.673	Oct 2013	25.954		-		25.954	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Plan BMDS level Testing (Element/System Test Lab Facilities)		Colorado Springs, CO													
Subtotal			0.000	41.520		54.252		56.237		-		56.237	-	-	-

Remarks
N/A

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

			Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	41.520	54.252	56.237	-	56.237	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	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
GTI-04e Part 1 (BMDS Ground Test)	+																											
GT-206 (Glory Trip)	▲																											
FTP-07 (Patriot Flight Test)	▲																											
FTI-01 (FTO-01 Risk Reduction Flight Test)	▲																											
GM CTV-01 (GM Non Intercept Flight Test)		▲																										
FTM-20 (Aegis Intercept Flight Test)		▲																										
Fast Eagle Inc 2		▲																										
Fast Assurance		▲																										
GT-207 (Glory Trip)			▲																									
FTM-19 (Aegis Intercept Flight Test)			▲																									
FTP-08 (Patriot Flight Test)			▲																									
Fast Aim			▲																									
FTG-07 (GM Intercept Flight Test)			▲																									
FTM-22 (Aegis Intercept Flight Test)			▲																									
GTI-04e Part 1a (BMDS Ground Test)				+																								
FTM-21 (Aegis Intercept Flight Test)				▲																								
GT-209 (Glory Trip)				▲																								
GT-208-1 (Glory Trip)				▲																								
FTO-01 (Operational Test)				▲																								
Install Spiral 8.2 Mission Node - Ground Test					+	+																						
Install Spiral 8.2 Management Node - C2BMC Testbed					+	+	+																					
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed					+	+	+																					
Warfighter TP 04e (BMDS Ground Test)							☆																					
FTM-22 (IOT&E) (AEGIS 4.0.2 Intercept Flight Test)							▲																					
Fast Phoenix (BMDS Ground Test)							+																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	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
SCD PTV-01 (Aegis SCD Intercept Only Flight Test)				△																								
Israeli Cooperative Intercept Flight Test - FY 2014					✧	✧	✧	✧																				
GTD-04e Part 2 (BMDS Ground Test)					✧	✧	✧	✧	✧	✧																		
FTX-18 (Aegis 4.0.2 Target Only Flight Test)					△																							
GTI-04e Part 2 (BMDS Ground Test)					✧	✧																						
GDEx 06 Part 1 (BMDS Ground Test)						✧																						
AA CTV-01 (Aegis AA Intercept Only Flight Test)						△																						
Fast Falcon (BMDS Ground Test)							✧																					
FTG-06b (GM Intercept Flight Test)							▲																					
Fast Osprey (BMDS Ground Test)							✧																					
FTX-20 (Aegis 5.0 Target Only Flight Test)								△																				
FTM-25 (Aegis 5.0 Intercept Flight Test)								△																				
FTM-26 (Aegis 5.0 Intercept Flight Test)								△																				
Israeli Cooperative Intercept Flight Test - FY 2015									✧	✧	✧	✧																
FTP-09 (8-3) (LTPO Intercept Flight Test)									△																			
FTX-19 (Aegis 4.0.2 Target Only Flight Test)									△																			
SCD CTV-01 (AEGIS SCD Intercept Only Flight Test)									△																			
GTI-06 Part 1 (BMDS Ground Test)										✧	✧																	
FTM-24 (Aegis 4.0.2 Intercept Flight Test)											△																	
FTO-02 E1 (OTA Intercept Flight Test)											△																	
FTP-10 (8-4) (LTPO Intercept Flight Test)											△																	
GDEx 06 Part 2 (BMDS Ground Test)											✧																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency **Date:** March 2014

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	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
FTG-09 (GM Intercept Flight Test)											▲																	
FTX-21 (Aegis SBT Target Only Flight Test)											▲																	
SCD CTV-02 (AEGIS SCD Intercept Only Flight Test)											▲																	
FTO-02 E2 (OTA Intercept Flight Test)											▲																	
GTI-06 Part 2 (BMDS Ground Test)											✦																	
FTT-18 (TH Intercept Flight Test)											▲																	
GTD-06 Part 3 (BMDS Ground Test)											✦																	
FTP-11 (8-OT2) (LTPO Intercept Flight Test)											▲																	
FTP-12 (8-OT3) (LTPO Intercept Flight Test)											▲																	
FTP-13 (8-OT4) (LTPO Intercept Flight Test)											▲																	
GTD-06 Part 1a (BMDS Ground Test)											✦																	
Warfighter TP 06 (BMDS Ground Test)											✦																	
Israeli Cooperative Intercept Flight Test - FY 2016															✦	✦	✦	✦										
FTM-27 (Aegis SBT Intercept Flight Test)															▲													
GTD-06 Part 2 (BMDS Ground Test)															✦	✦												
GTD-06 Part 1b (BMDS Ground Test)															✦													
SFTM-01 E2 (Aegis 5.1 Intercept Only Flight Test)															▲													
FTG-15 (GM Intercept Flight Test)															▲													
SFTM-01 E1 (Aegis 5.1 Target Only Flight Test)															▲													
GTX-07a (BMDS Ground Test)																												✦
GDEx 07a (BMDS Ground Test)																												✦
GTI-07a (BMDS Ground Test)																												✦

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	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
SFTM-02 (Aegis 5.1 Intercept Flight Test)																												
FTX-24 (Aegis SBT Target Only Flight Test)																												
Israeli Cooperative Intercept Flight Test - FY 2017																												
FTT-15 (THAAD Intercept Flight Test)																												
Warfighter TP 07a (BMDS Ground Test)																												
GDEx 07b (BMDS Ground Test)																												
GTD-07a Part 2 (BMDS Ground Test)																												
Spiral 8.2 EUCOM Capability Declaration																												
Spiral 8.2 NORTHCOM/PACOM Capability Declaration																												
FTG-13 (OTA Intercept Flight Test)																												
FTX-22 (SN Target Only Flight Test)																												
GTD-07a Part 1 (BMDS Ground Test)																												
FTM-28 (Aegis SBT Intercept Flight Test)																												
Spiral 8.2 CENTCOM Capability Declaration																												
GTX-07b (BMDS Ground Test)																												
FTM-31 (Aegis SBT Intercept Flight Test)																												
GM CTV-03 (GM Intercept Only Flight Test)																												
FTM-29 (Aegis 5.0 Intercept Flight Test)																												
Israeli Cooperative Intercept Flight Test - FY 2018																												
FTO-03 E2 (OTA Intercept Flight Test)																												
GDEx 07b Part 2 (BMDS Ground Test)																												
FTM-33 (Aegis SBT Intercept Flight Test)																												
FTM-32 (Aegis SBT Intercept Flight Test)																												
PA-07b (BMDS Ground Test)																												
GTI-07b (BMDS Ground Test)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-04e Part 1 (BMDS Ground Test)	1	2013	1	2013
GT-206 (Glory Trip)	1	2013	1	2013
FTP-07 (Patriot Flight Test)	1	2013	1	2013
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
GM CTV-01 (GM Non Intercept Flight Test)	2	2013	2	2013
FTM-20 (Aegis Intercept Flight Test)	2	2013	2	2013
Fast Eagle Inc 2	2	2013	2	2013
Fast Assurance	2	2013	2	2013
GT-207 (Glory Trip)	3	2013	3	2013
FTM-19 (Aegis Intercept Flight Test)	3	2013	3	2013
FTP-08 (Patriot Flight Test)	3	2013	3	2013
Fast Aim	4	2013	4	2013
FTG-07 (GM Intercept Flight Test)	4	2013	4	2013
FTM-22 (Aegis Intercept Flight Test)	4	2013	4	2013
GTI-04e Part 1a (BMDS Ground Test)	4	2013	4	2013
FTM-21 (Aegis Intercept Flight Test)	4	2013	4	2013
GT-209 (Glory Trip)	4	2013	4	2013
GT-208-1 (Glory Trip)	4	2013	4	2013
FTO-01 (Operational Test)	4	2013	4	2013
Install Spiral 8.2 Mission Node - Ground Test	4	2013	1	2014
Install Spiral 8.2 Management Node - C2BMC Testbed	4	2013	2	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Element and User Gateway Nodes (5) - C2BMC Testbed	4	2013	2	2014
Warfighter TP 04e (BMDS Ground Test)	1	2014	1	2014
FTM-22 (IOT&E) (AEGIS 4.0.2 Intercept Flight Test)	1	2014	1	2014
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
SCD PTV-01 (Aegis SCD Intercept Only Flight Test)	1	2014	1	2014
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2015
FTX-18 (Aegis 4.0.2 Target Only Flight Test)	2	2014	2	2014
GTI-04e Part 2 (BMDS Ground Test)	2	2014	3	2014
GDEx 06 Part 1 (BMDS Ground Test)	3	2014	3	2014
AA CTV-01 (Aegis AA Intercept Only Flight Test)	3	2014	3	2014
Fast Falcon (BMDS Ground Test)	4	2014	4	2014
FTG-06b (GM Intercept Flight Test)	4	2014	4	2014
Fast Osprey (BMDS Ground Test)	4	2014	4	2014
FTX-20 (Aegis 5.0 Target Only Flight Test)	1	2015	1	2015
FTM-25 (Aegis 5.0 Intercept Flight Test)	1	2015	1	2015
FTM-26 (Aegis 5.0 Intercept Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY 2015	1	2015	4	2015
FTP-09 (8-3) (LTPO Intercept Flight Test)	2	2015	2	2015
FTX-19 (Aegis 4.0.2 Target Only Flight Test)	2	2015	2	2015
SCD CTV-01 (AEGIS SCD Intercept Only Flight Test)	2	2015	2	2015
GTI-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
FTM-24 (Aegis 4.0.2 Intercept Flight Test)	3	2015	3	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency **Date:** March 2014

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Events	Start		End	
	Quarter	Year	Quarter	Year
FTP-10 (8-4) (LTPO Intercept Flight Test)	3	2015	3	2015
GDEx 06 Part 2 (BMDS Ground Test)	3	2015	3	2015
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
FTX-21 (Aegis SBT Target Only Flight Test)	4	2015	4	2015
SCD CTV-02 (AEGIS SCD Intercept Only Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
GTI-06 Part 2 (BMDS Ground Test)	4	2015	4	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
GTD-06 Part 3 (BMDS Ground Test)	1	2016	1	2016
FTP-11 (8-OT2) (LTPO Intercept Flight Test)	1	2016	1	2016
FTP-12 (8-OT3) (LTPO Intercept Flight Test)	1	2016	1	2016
FTP-13 (8-OT4) (LTPO Intercept Flight Test)	1	2016	1	2016
GTD-06 Part 1a (BMDS Ground Test)	1	2016	1	2016
Warfighter TP 06 (BMDS Ground Test)	1	2016	1	2016
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016
FTM-27 (Aegis SBT Intercept Flight Test)	2	2016	2	2016
GTD-06 Part 2 (BMDS Ground Test)	2	2016	3	2016
GTD-06 Part 1b (BMDS Ground Test)	3	2016	3	2016
SFTM-01 E2 (Aegis 5.1 Intercept Only Flight Test)	3	2016	3	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
SFTM-01 E1 (Aegis 5.1 Target Only Flight Test)	3	2016	3	2016
GTX-07a (BMDS Ground Test)	4	2016	4	2016
GDEx 07a (BMDS Ground Test)	4	2016	4	2016
GTI-07a (BMDS Ground Test)	1	2017	1	2017
SFTM-02 (Aegis 5.1 Intercept Flight Test)	1	2017	1	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency **Date:** March 2014

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Events	Start		End	
	Quarter	Year	Quarter	Year
FTX-24 (Aegis SBT Target Only Flight Test)	1	2017	1	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
Warfighter TP 07a (BMDS Ground Test)	3	2017	3	2017
GDEx 07b (BMDS Ground Test)	3	2017	3	2017
GTD-07a Part 2 (BMDS Ground Test)	3	2017	3	2017
Spiral 8.2 EUCOM Capability Declaration	3	2017	3	2017
Spiral 8.2 NORTHCOM/PACOM Capability Declaration	3	2017	3	2017
FTG-13 (OTA Intercept Flight Test)	3	2017	3	2017
FTX-22 (SN Target Only Flight Test)	3	2017	3	2017
GTD-07a Part 1 (BMDS Ground Test)	3	2017	3	2017
FTM-28 (Aegis SBT Intercept Flight Test)	3	2017	3	2017
Spiral 8.2 CENTCOM Capability Declaration	4	2017	4	2017
GTX-07b (BMDS Ground Test)	1	2018	1	2018
FTM-31 (Aegis SBT Intercept Flight Test)	1	2018	1	2018
GM CTV-03 (GM Intercept Only Flight Test)	1	2018	1	2018
FTM-29 (Aegis 5.0 Intercept Flight Test)	1	2018	1	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
FTO-03 E2 (OTA Intercept Flight Test)	3	2018	3	2018
GDEx 07b Part 2 (BMDS Ground Test)	3	2018	3	2018
FTM-33 (Aegis SBT Intercept Flight Test)	3	2018	3	2018
FTM-32 (Aegis SBT Intercept Flight Test)	3	2018	3	2018
PA-07b (BMDS Ground Test)	3	2018	4	2018
GTI-07b (BMDS Ground Test)	3	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	4	2018	4	2018

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency **Date:** March 2014

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Events	Start		End	
	Quarter	Year	Quarter	Year
FTG-11 (GM Intercept Flight Test)	4	2018	4	2018
FTO-03 E3 (OTA Intercept Flight Test)	4	2018	4	2018
Warfighter TP 07b (BMDS Ground Test)	1	2019	2	2019
GTD-07b Part 1 (BMDS Ground Test)	1	2019	2	2019
GTX-08 Part 1 (BMDS Ground Test)	3	2019	3	2019
GDEx 08 Part 1 (BMDS Ground Test)	3	2019	3	2019
FTG-17 (GM Intercept Flight Test)	3	2019	3	2019
GTX-08 Part 2 (BMDS Ground Test)	4	2019	4	2019
FTM-35 (AEGIS 5.0 Intercept Flight Test)	4	2019	4	2019
FTX-23 (AEGIS 5.0 Target Only Flight Test)	4	2019	4	2019
GTI-08 (BMDS Ground Test)	2	2020	3	2020
FTO-03 E1 (Strat) (OTA Intercept Flight Test)	3	2020	3	2020
GDEx 08 Part 2 (BMDS Ground Test)	3	2020	3	2020
FTX-26 (LRDR/CLEAR) (SN Target Only Flight Test)	3	2020	3	2020
FTM-34 (AEGIS 5.0 Intercept Flight Test)	3	2020	3	2020
GTD-08 Part 1 (BMDS Ground Test)	4	2020	4	2020
FTM-30 (AEGIS 5.0 Intercept Flight Test)	4	2020	4	2020
FTT-16 (TH Intercept Flight Test)	4	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
<i>MX01: Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	45.024	79.068	96.208	91.111	-	91.111	98.293	104.913	101.175	102.539	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

N/A

A. Mission Description and Budget Item Justification

OPERATIONS AND SUSTAINMENT

C2BMC Program Operations and Sustainment (O&S) consists of 1) sustaining C2BMC operational capability worldwide; 2) on-site sub-systems maintenance for all C2BMC including Combatant Commanders (COCOM) suites, Global Engagement Manager (GEM) suites, planners, remote Enterprise Work Stations (EWS), and GEM Work Stations (GWS), web browsers, and communication site(s) associated with the Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar(s); 3) the C2BMC Control Center that provides real-time resolution of operational issues; 4) vendor support which includes coordination and resolution of problems that occur with Commercial-off-the-Shelf (COTS) equipment; 5) training of operator, maintenance personnel, and testers (approximately 700 per year); 6) hardware and software maintenance and upgrade installation to ensure continuity of C2BMC operations.

On-site support provides:

- Assistance to the System Administrator of each Combatant Command
- Prime contractor support to operational users
- Maintenance of hardware and software
- Security support for the C2BMC equipment, hardware and software and auxiliary communication capabilities 24 hours a day, 7 days a week, 365 days a year through network and equipment operations monitoring
- Support to operators and testers during test, exercises, and wargames

Off-site support provides:

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- Integrated logistics support planning and management
 - Hardware and software maintenance and logistics functions that are beyond the capability of on-site support personnel
 - Inventory and spares management
 - Sustaining engineering support from the prime contractor and government activities
 - Maintenance of software licenses and vendor support agreements
 - Hardware and software maintenance agreements
 - Vendor depot support services
- C2BMC Control Center (CCC) (help desk) in Colorado Springs, CO provides:
- Real-time resolution of operational issues
 - The schedule for maintenance, systems upgrades, tests, exercises, and wargames, coordinated across all users
 - Collection of data regarding system/sub-system failures and prioritization of corrective actions
 - Review of hardware/software problems and coordination of Commercial-Off-the-Shelf (COTS) developer/vendor service calls

Training support includes:

- Developing and maintaining operator, maintenance personnel, and testers training material for C2BMC components/capabilities
- Training tailored to each deployment and/or test
- Training curriculum/courses provided for BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and the C2BMC Executive Course
- Warfighter sustainment training and skill proficiency
- Assistance to warfighter in development and execution of the Radar Management Course
- New equipment training to end-users and training organizations

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

	FY 2013	FY 2014	FY 2015
Title: Operations and Support	60.699	74.684	70.018
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
- Maintained C2BMC training suites			
- Sustained Global Engagement Manager (GEM) trainers			
- Developed curriculum for and train operators, maintenance personnel, and testers			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Resolved real-time operational issues through the C2BMC Control Center and Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC) at FY 2010 level - Provided global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provided and support communications circuits for fielded C2BMC locations - Provided integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provided support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Provided operations and sustainment personnel to support test and special operations for Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) at 5 deployed operational test sites - Support Host Nation operations, demonstrations, and tests - Provided sustainment training/skills proficiency to C2BMC operations - Upgraded and maintained computer network defense and network monitoring in the BNOSC - Operated the BNOSC 24 hours a day, 7 days a week, 365 days a year - Provided support/sustainment for C2BMC installations - Provided sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Continued round-the-clock sustainment for Communications capabilities with AN/TPY-2 (previously in Program Element 0603884C, Project MD11) - Continued on-site C2BMC support of fielded sites for hardware and software (previously in Program Element 0603884C, Project MD11) - Continued C2BMC operator training for fielded capabilities (previously in Program Element 0603884C, Project MD11) - Continued sustaining engineering support and integrated logistics support for fielded hardware and software (previously in Program Element 0603884C, Project MD11) <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Maintain C2BMC training suites - Sustain Global Engagement Manager (GEM) trainers - Develop curriculum for and train operators, maintenance personnel, and testers - Resolve real-time operational issues through the C2BMC Control Center (CCC) (includes Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provide operations support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Provide operations and sustainment personnel to support test and special operations for AN/TPY-2 at 5 deployed operational and test sites - Support Host Nation operations, demonstrations, and tests - Provide sustainment training/skills proficiency to C2BMC operators - Upgrade and maintain computer network defense and network monitoring in the CCC (including the BNOSC) - Operate the CCC (including the BNOSC) 24 hours a day, 7 days a week, 365 days a year - Provide sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Support the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continue round-the-clock sustainment for Communications capabilities with Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) - Continue on-site C2BMC support of fielded sites for hardware and software - Continue C2BMC operator training for fielded capabilities - Continue sustaining engineering support and integrated logistics support for fielded hardware and software - Plan, engineer, deploy, and sustain C2BMC Deployable Interface Node (CDIN) (and all other required network communications equipment, and shelters) to support the deployment of an AN/TPY-02 Radar to the second site in PACOM <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> Maintain C2BMC training suites - Sustain Global Engagement Manager (GEM) trainers - Develop curriculum for and train operators, maintenance personnel, and testers - Resolve real-time operational issues through the C2BMC Control Center (CCC) (includes Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provide operations support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Provide operations and sustainment personnel to support test and special operations for AN/TPY-2 at 6 deployed operational and test sites - Support Host Nation operations, demonstrations, and tests - Provide sustainment training/skills proficiency to C2BMC operators - Upgrade and maintain computer network defense and network monitoring in the CCC (including the BNOSC) - Operate the CCC (including the BNOSC) 24 hours a day, 7 days a week, 365 days a year - Provide sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, GE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Support the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continue round-the-clock sustainment for Communications capabilities with Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) - Continue on-site C2BMC support of fielded sites for hardware and software - Continue C2BMC operator training for fielded capabilities - Continue sustaining engineering support and integrated logistics support for fielded hardware and software - Provide engineering support to the SBIRS Increment 2 interface to ensure continued communications between the BMDS and GMD 			
<p>Title: Concurrent, Test, Training, and Operations (CTTO)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: Operated and Sustained C2BMC Spiral 6.4 Tri-Node (Tri-Node includes Pacific Command (PACOM), Northern Command (NORTHCOM), and Strategic Command (STRATCOM)) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS). - Operated and Sustained C2BMC Spiral 6.4 European Command (EUCOM) and Central Command (CENTCOM) Distributed Training System (DTS). - Continued providing Ballistic Missile Defense (BMD) training events across the Unified Combatant Commands while maintaining the existing architecture. - Monitored and coordinated the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of Concurrent, Test, Training, and Operations (CTTO). - Continued Development of C2BMC Spiral 8.2 Training Systems.</p> <p>FY 2014 Plans:</p>	18.369 -	21.524 -	21.093 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Operate and Sustain C2BMC Spiral 6.4 Tri-Node (Tri-Node includes PACOM, NORTHCOM, and STRATCOM) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS). - Operate and Sustain C2BMC Spiral 6.4 EUCOM and CENTCOM Distributed Training System (DTS). - Deploy C2BMC Spiral 6.4 Training Support System (TSS) to Space Missile Defense Command, C2BMC Sensor Manager Training Facility and to Strategic Command (STRATCOM). - Continue providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture. - Monitor and coordinate the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of CTTO. - Development of C2BMC Spiral 8.2 Training Systems. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Sustain deployed C2BMC Spiral 6.4 Training Support System (TSS). - Operate and Sustain C2BMC Spiral 6.4 Tri-Node (Tri-Node includes PACOM, NORTHCOM, and STRATCOM) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS). - Operate and Sustain C2BMC Spiral 6.4 EUCOM and CENTCOM Distributed Training System (DTS). - Continue providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture. - Monitor and coordinate the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of CTTO. - Development of C2BMC Spiral 8.2 Training Systems. 			
Accomplishments/Planned Programs Subtotals	79.068	96.208	91.111

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

Remarks

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned for Spiral 8.4 capability development. Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operations and Support - Indirect Support	MIPR	DISA DECC/DISA TECC : Various	4.761	9.000		7.650	Oct 2013	7.803		-		7.803	Continuing	Continuing	Continuing
Operations and Support - Teleport Sustainment	MIPR	SPAWAR : San Diego, CA	2.799	2.045		-		-		-		-	-	4.844	-
Operations and Support - Unit Personnel, Control System Improvement Sustaining Support	SS/IDIQ	Lockheed Martin Team : Arlington, VA	34.803	49.654		67.034	Dec 2013	62.215		-		62.215	Continuing	Continuing	Continuing
Operations and Support - Warfighter Training	IA	Lockheed Martin Team : Arlington, VA	2.661	-		-		-		-		-	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training And Operations	SS/CPAF	Northrop Grumman : Boeing	0.000	3.175		-		0.700		-		0.700	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training And Operations/Training Enhancements	SS/IDIQ	Lockheed Martin Team Arlington,VA : Huntsville, Al, Colorado Springs, CO	0.000	15.194		21.524	Dec 2013	16.743		-		16.743	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training, Test and Operations	SS/FPAF	COLSA ARC : Huntsville, AL	0.000	-		-		3.650	Oct 2014	-		3.650	Continuing	Continuing	Continuing
Subtotal			45.024	79.068		96.208		91.111		-		91.111	-	-	-

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.024	79.068	96.208	91.111	-	91.111	-	-	-

Remarks
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	12.549	16.969	22.151	25.668	-	25.668	26.818	29.062	30.750	33.252	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2013 and FY 2014, Program Wide Support reflects proportional increases as a result of increases in Ballistic Missile Defense Command and Control, Battle Management & Communication.

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 Service, and Federally Funded Research and Development Center (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, 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. Also includes legal settlements. In keeping with congressional intent, Program Wide Support is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget.

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	16.969	22.151	25.668
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	16.969	22.151	25.668

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	1.749	0.131		0.422	Jun 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPRs)	MIPR	Various : Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	0.000	0.013		-		-		-		-	0.015	0.028	-
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AK, AL, CA, CO, HI, VA	0.000	2.088		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various : Multi: AK, AL, CA, CO, HI, VA	8.000	14.388		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various : Multi: AK, AL, CA, CO, VA	0.000	0.349		21.729	Nov 2013	22.062		-		22.062	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services Travel	Allot	Various : Multi: AL, CA, CO, VA	2.800	-		-		-		-		-	2.800	5.600	-
Program Wide Support - Agency Operations, Sustainment and GPC	Allot	Various : Multi: AL, CO, VA etc.	0.000	-		-		1.454		-		1.454	Continuing	Continuing	Continuing
Program Wide Support - Facilities Maintenance SRM	MIPR	Various : Multi: AK, CA, CO, AL, MD, NJ, VA	0.000	-		-		2.152		-		2.152	Continuing	Continuing	Continuing
Subtotal			12.549	16.969		22.151		25.668		-		25.668	-	-	-

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.549	16.969	22.151	25.668	-	25.668	-	-	-

Remarks
N/A