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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	1,674.244	356.900	366.552	418.355	-	418.355	433.470	454.452	461.991	451.947	Continuing	Continuing
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	1,674.244	285.826	194.367	245.129	-	245.129	251.253	273.981	284.174	271.341	Continuing	Continuing
MC01: <i>Cyber Operations</i>	-	0.000	0.000	0.538	-	0.538	0.547	0.556	0.566	0.583	Continuing	Continuing
MT01: <i>C2BMC Test</i>	-	0.000	59.189	54.280	-	54.280	60.328	54.355	48.127	57.999	Continuing	Continuing
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	-	58.525	94.394	96.257	-	96.257	100.261	102.242	103.085	96.970	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	12.549	18.602	22.151	-	22.151	21.081	23.318	26.039	25.054	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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.

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 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

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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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.

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.

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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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	363.640	366.552	376.116	-	376.116
Current President's Budget	356.900	366.552	418.355	-	418.355
Total Adjustments	-6.740	0.000	42.239	-	42.239
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-6.157	0.000			
• SBIR/STTR Transfer	-0.583	0.000			
• Other Adjustment	0.000	0.000	42.239	-	42.239

Change Summary Explanation

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.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	1,674.244	285.826	194.367	245.129	-	245.129	251.253	273.981	284.174	271.341	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

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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.

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

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<ul style="list-style-type: none"> - 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) <p>C2BMC ELEMENT</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> - 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 - 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 		

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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 2012	FY 2013	FY 2014
<p>Title: Spiral Development</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Continued systems engineering to provide the System Description Document and the Integrated Build C and Build D specifications for the Elements to design, build, integrate and test BMDS components. The BMDS Integrated Build C specification directed limited peer-to-peer engagement coordination, sensor, resource management, initial multi-radar capability, warfighter planning, warfighter enhancements, and improved situational awareness - Continued BMDS Integrated Build D specification to incorporate the communications enhancements adding improved correlation, initial BMDS system track, and expanded BMDS C2BMC interfaces with Friends and Allies - Awarded follow on contract to continue development 	<p>222.014</p> <p>0</p>	<p>151.324</p> <p>0</p>	<p>195.780</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Continued Spiral 8.2 engineering and design and BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration - Refined and expanded the C2BMC planned architecture to incorporate Enhanced C2BMC advanced technology development in integrated discrimination and data fusion and tasking techniques using RF, infrared, advanced remote, and JOG (Joint OPIR Ground Study) sensors - Validated BMDS C2BMC model (BCM) with Critical Engagement Conditions (CECs) for system-level performance assessments. CEC are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - The C2BMC Program collected CEC data to verify models and simulations for Spiral 6.4C operations. - 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 - Updated production drawings and installation procedures - Acquired and installed Enterprise Work Stations (EWS), web browsers, and BMD Planners - Operated Spiral 6.2 and completed upgrade to Spiral 6.4C at Central Command (CENTCOM) - The C2BMC Program fielded a C2BMC Deployable Interface Node (CDIN) with a forward based AN/TPY-2 - The C2BMC program also upgraded existing suite to Spiral 6.4 suite for Central Command (CENTCOM), installed communications, supported hardware-in-the-loop (HWIL) integration testing, provided operations and sustainment, and added a training suite in CENTCOM. - Operated the new Spiral 6.4C Global Engagement Manager (GEM) hardware at European Command (EUCOM), Northern Command (NORTHCOM), Strategic Command (STRATCOM), Pacific Command (PACOM) - Continued to incorporate C2BMC Advanced Technologies and prototypes into the Enhanced C2BMC architecture - Identified and acquired the long-haul terrestrial communications circuits to support the European Phased Adaptive Approach (EPAA) Phase 1 Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) site in EUCOM - Upgraded the BMDS Communications Networks (BCN) communications systems at the Pacific Missile Range Facility to support the testing of the European Phase Adaptive Approach (EPAA) Phase 2 concept - Initiated Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Continued Active Layered Theatre Ballistic Missile Defense (ALTBMD) Systems Engineering - Completed North Atlantic Treaty Organization (NATO) Architecture Design Review - Completed Situational Awareness Node at Eskisehir, Turkey 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>- Participated in the development of NATO Staff Requirements (NSR) for new NATO Territorial Defense Mission</p> <p>FY 2013 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 - 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 and add additional Combatant Commands to operations - Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continue Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Integrate BMDS Overhead Architecture (BOA) into spiral 8.2 C2BMC - Develop the initial BMDS C2BMC Model for Spiral 8.2 - 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 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. - Finalize the C2BMC Command and Control (C2) and battle management architecture, including Enhanced C2BMC advanced technologies, to fulfill the European Phase Adaptive Approach (EPAA) 3/4 Architecture - Complete requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 3 requirements - Complete a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Complete NATO Capability 2 Interface Control Documents (ICDs)</p> <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 - 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 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. - Complete a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design - Complete NATO Capability 2 Interface Control Documents (ICDs) - 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 release, and engage on remote support with Aegis 5.1. Task initiated in FY 2013 in Budget Project MD25, PE 0603175C and scheduled for completion to support GTX-07a (FY 2017). - Deliver a C2BMC Deployable Interface Node (CDIN) in support of a second forward based AN/TPY-2 deployment to PACOM. 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
- Complete requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 4 requirements				
Increase due to 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.				
Title: Integrated Master Test Plan		32.084	0.000	0.000
		0	0	0
Articles:				
Description: N/A				
FY 2012 Accomplishments:				
<ul style="list-style-type: none"> - Participated in and analyzed results of ground and flight tests (to include FTI-01), wargames, and exercises in accordance with the 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 - Sustained the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training - Provided infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> --C2BMC Control Center (CCC) --System Test and Operations Center (STOC) --BMDS Communications Network (BCN) --Parallel Staging Network (PSN) --BMDS Network Operations and Security Center (BNOSC) - Continued BMD Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conducted concept development for virtualized C2BMC services, service oriented architectures - Conducted initial prototypes and associated operations with Concurrent, Test, Training, and Operations (CTTO) interfaces and architectures - Conducted North Atlantic Treaty Organization (NATO) Multi-National Ensemble Test #2 - Conducted Exercises Rapid Arrow 2012 German/Dutch Live Fire Event and Austere Challenge 2012 				
FY 2013 Plans:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	FY 2013	FY 2014
FY 2013 Plans are reported in budget project MT01 \$59.189 million						
FY 2014 Plans: FY 2014 Plans are reported in budget project MT01 \$54.280 million						
Title: C2BMC Experimentation Lab (X-Lab)				7.311	12.199	4.733
Articles:				0	0	0
Description: N/A						
FY 2012 Accomplishments: The X-Lab communications effort focuses on developing the next generation command and control and battle management concepts and the enabling technologies required to implement them among the BMDS. These activities will develop, integrate, and demonstrate in a system of systems concept, the Command and Control, Battle Management and Communications (C2BMC) and enabling technologies for improving BMDS performance across all mission areas and layers of defense including Early Intercept (EI) to include defense of friends and allies. BMDS integration concepts and techniques are demonstrated and evaluated in system-wide flight tests to facilitate the transition to the operational C2BMC. - Enabled integration of new capabilities into C2BMC Spiral 8.2 through performance characterization of Spiral 6.4 and Spiral 8.2 prototypes - Demonstrated and evaluated new C2BMC capabilities in live-flight test events - Continued to evolve warfighter concept of operations (CONOPS) to insert new subsystems and capabilities into the BMDS in the areas of boost phase tracking and classification, sensor resource management, weapons resource management, and post-intercept debris information flow - Continued to develop and demonstrate sensor resource management techniques with enhanced tracking under communications and bandwidth constraints - Continued to support the efforts of the Enhanced C2BMC program to develop the Integrated Sensor Manager and to prototype the interface between C2BMC and the Integrated Sensor Manager. Capability improvements have been demonstrated through a series of integrated experiments (simulation events, hardware-in-the-loop tests, and system-wide flight tests) - Conducted architecture assessments of BM functions federated within C2BMC - Integrated the CONOPS information and BM integration priorities for advanced and emerging BMDS capabilities (such as Early Intercept and Space Tracking and Surveillance System (STSS)) into battle management constructs - Refined C2BMC interfaces to BMDS Elements and Sensors						
FY 2013 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>The C2BMC Experimentation Lab (X-Lab) will focus on prototyping, demonstrating, and analyzing new C2BMC capabilities that will enable (1) status reporting and tasking of 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 will be:</p> <ul style="list-style-type: none"> - Tasking of Aegis, THAAD, and infrared sensors through cues from space based assets and other BMDS assets: Spirals 6.4 and 8.2 - Demonstrating the communications, 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> <ul style="list-style-type: none"> -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) - 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 - Characterize the performance of engineering releases of C2BMC Spiral 8.2 to mitigate risks early in the development process <p>In support of IMTP, X-Lab Test is found in budget project MT01 (\$5.422 million).</p> <p>Decrease due to Spiral 8.4 deferral reduced X-Lab support and prototyping in FY 2014.</p>				
Title: C2BMC Communications		24.417	30.844	39.223
		Articles: 0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Deployed CDIN to CENTCOM to support AN/TPY-2 fielding - Upgraded BMDS Teleports to V6.05 - Initiated planning and site prep for terrestrial fiber communications at Site K - GMD Long Haul Communications - Engineered, designed and planned for procurement and installation of radome on MET antenna, upgraded electrical systems and performed associated site preparation at Ramstein AFB - Continued development of the Protected Anti-jam/Anti-scintillation Net-Centric Systems (PAAWNS) - Supported exercises and tests of the AN/TPY-2 radar system with BMDS Communications Networks (BCN) support systems - Continued BMDS communications system integration and certifications <p>FY 2013 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) - Upgrade SBX SATCOM capability and transition land-side terminal service to COMSAT terminals at FGA and VAFB - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Install AN/GSC-52B SATCOM terminal at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Perform High Altitude Electromagnetic Pulse (HEMP) upgrade Building 543 at Ramstein AFB - Continue support for C2BMC 6.4 in EUCOM, STRATCOM, NORTHCOM, PACOM, and CENTCOM - Continue development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management; Sensors Element funded hardware, installation, and checkout) - 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 and BNOSC - Operate BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide global BMDS communications via leased 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 			

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide support of AN/TPY-2 radar communications nodes - Acquire and install 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 at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Perform High Altitude Electromagnetic Pulse (HEMP) upgrade Building 543 at Ramstein AFB - 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) - 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)) - Operate CCC (includes BNOSC) 24 hours a day, 7 days a week, 365 days a year - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations to ensure continued performance and operations - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software - Provide support of AN/TPY-2 radar communications nodes to ensure continued performance and operations - Acquire and install Enterprise Work Stations, Web Browsers, and Planners <p>Increase due to the acquisition and deployment of an additional C2BMC Deployable Interface Node (CDIN).</p>				
Title: Enterprise Sensors Lab (ESL)		0.000	0.000	5.393
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments:				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments are reported in budget project MD25 PE 0603175C			
<i>FY 2013 Plans:</i> FY 2013 Plans 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 -In support of the Integrated Master Test Plan (IMTP), ESL test support is found in MT01 (\$5.670 million)			
Increase due to 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 ESL.			
Accomplishments/Planned Programs Subtotals	285.826	194.367	245.129

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	67.921	79.975	309.203		309.203	212.715	220.185	220.732	220.373	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	222.696	347.012	315.183		315.183	340.899	334.705	341.811	278.313	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	88.162	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	88.162
• 0603892C: <i>AEGIS BMD</i>	1,139.019	992.407	937.056		937.056	987.729	1,074.941	880.468	876.685	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	86.278	51.313	44.947		44.947	32.007	33.778	34.555	34.974	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	58.970	63.043	52.131		52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	183.506	9.730	44.478		44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	484.838	454.400	375.866		375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	497.550	435.747	495.257		495.257	516.092	406.611	481.527	463.660	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	75.097	297.375	0.000		0.000	0.000	0.000	0.000	0.000	0.000	372.472

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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

for Spiral 8.4 to support Phased Adaptive Approach (PAA) 4. 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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Spiral Development - C2BMC HW/SW Development, I&T	SS/CPAF	Lockheed Martin Team:Huntsville, AL	35.970	2.148		0.000		0.000		-		0.000	0.000	38.118	38.118
Spiral Development - C2BMC Hardware(HW)/ Software(SW) Development, Integration & Test (I&T)	SS/CPAF	Lockheed Martin Team:Colorado Springs, CO	393.398	14.177		0.000		0.000		-		0.000	0.000	407.575	251.587
Spiral Development - C2BMC Hardware/ Software Development, Integration & Test (I&T)	SS/IDIQ	Lockheed Martin Team:Arlington, VA	0.000	117.929		106.443	Dec 2012	112.709	Dec 2013	-		112.709	Continuing	Continuing	Continuing
Spiral Development - C2BMC Integration	Various	Services DISA Agency:-	110.956	14.091		2.713	Oct 2012	19.789	Oct 2013	-		19.789	Continuing	Continuing	Continuing
Spiral Development - C2BMC Product Engineering & Development	SS/CPAF	Lockheed Martin Team:Arlington, VA	445.434	26.636		0.000		0.000		-		0.000	0.000	472.070	472.070
Spiral Development - Common Threat Engineering	C/CR	Various:Various	1.684	0.000		0.000		0.000		-		0.000	0.000	1.684	1.684
Spiral Development - Concurrent Test Training and Operations (CTTO)	SS/CPAF	Northrop Grumman Boeing:Colorado Springs, CO	9.437	0.000		0.000		0.000		-		0.000	0.000	9.437	9.437
Spiral Development - Concurrent Test Training and Operations (CTTO) Test/Training Enhancements	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	64.286	0.000		0.000		0.000		-		0.000	0.000	64.286	64.286
Spiral Development - Contract Support Services	SS/FFP	Cobham Analytic Solutions, Paradigm, CACI, CSC:Arlington, VA/ Huntsville, AL	112.496	20.193		15.124	Oct 2012	24.338	Oct 2013	-		24.338	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 - Federally Funded Research & Development Centers / University Affiliated Research Center	MIPR	MITRE, IDA, ORNL, Aerospace, JHU/APL, GTRI:Arlington, VA/Huntsville, AL/Colorado Springs, CO	62.742	15.745		12.065	Oct 2012	16.140	Oct 2013	-		16.140	Continuing	Continuing	Continuing
Spiral Development - MDA Civilian, Travel & PCS	Various	:-Arlington, VA/Huntsville, AL/Colorado Springs, CO	33.683	11.095		14.979	Oct 2012	22.804	Oct 2013	-		22.804	Continuing	Continuing	Continuing
Spiral Development - Operations and Support (O&S) Communication Leases	IA	DISA:Scott AFB, IL	34.691	0.000		0.000		0.000		-		0.000	0.000	34.691	34.691
Spiral Development - Operations and Support (O&S) DOTMLPF	IA	SETAC:-	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	Continuing
Spiral Development - Operations and Support (O&S) Indirect Support	MIPR	DISA DECC:Pensacola, FL	19.065	0.000		0.000		0.000		-		0.000	0.000	19.065	19.065
Spiral Development - Operations and Support (O&S) Unit Personnel, Control System Improvement, Sustaining Support	SS/CPAF	Lockheed Martin Team:Arlington, VA	183.285	0.000		0.000		0.000		-		0.000	0.000	183.285	183.285
Spiral Development - Operations and Support (O&S) Warfighter Training	SS/CPAF	Lockheed Martin Team:Arlington, VA	2.665	0.000		0.000		0.000		-		0.000	0.000	2.665	2.665
C2BMC Experimentation Lab (X-Lab) - X-Lab	SS/CPAF	Various / Northrop Grumman Mission Systems:Colorado Springs, CO	11.898	7.311		12.199	Oct 2012	4.733	Oct 2013	-		4.733	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C2BMC Communications - BNOSC	SS/CPAF	Lockheed Martin Team / JRDC:Colorado Springs, CO	0.000	6.761		6.900	Oct 2012	3.224	Oct 2013	-		3.224	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding	SS/CR	DISA, PMDCATS, SPAWAR:Various	34.994	4.986		16.051	Oct 2012	25.250	Oct 2013	-		25.250	Continuing	Continuing	Continuing
C2BMC Communications - Communication Leases	SS/CR	DISA:Arlington, VA	0.000	6.200		6.143	Oct 2012	8.949	Oct 2013	-		8.949	Continuing	Continuing	Continuing
C2BMC Communications - EMR, EIS, ECI Communications	MIPR	Various:Various	63.904	0.000		0.000		0.000		-		0.000	0.000	63.904	63.904
C2BMC Communications - EUCOM Communications	MIPR	USAFE :Ramstein, DE	0.000	6.470		1.750	Oct 2012	1.800	Oct 2013	-		1.800	Continuing	Continuing	Continuing
C2BMC Communications - GCN Transition	IA	DISA:Various	18.000	0.000		0.000		0.000		-		0.000	0.000	18.000	18.000
Enterprise Sensors Lab (ESL) - Enterprise Sensor Lab	SS/CPAF	Northrop Grumman:Colorado Springs, CO	0.000	0.000		0.000		5.393	Oct 2013	-		5.393	Continuing	Continuing	Continuing
Subtotal			1,640.588	253.742		194.367		245.129		0.000		245.129			

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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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Spiral Development - BMDS Level Testing	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	13.430	0.000		0.000		0.000		-		0.000	0.000	13.430	13.430
Integrated Master Test Plan - BMDS Level Testing-	SS/IDIQ	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	0.000	11.697		0.000		0.000		-		0.000	0.000	11.697	11.697
Integrated Master Test Plan - BMDS Level Testing	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	0.000	3.020		0.000		0.000		-		0.000	0.000	3.020	3.020
Integrated Master Test Plan - BMDS Level Testing (Element/System Test Lab Facilities)	SS/CPAF	JRDC:Colorado Springs, CO	20.226	17.367		0.000		0.000		-		0.000	0.000	37.593	37.593
Subtotal			33.656	32.084		0.000		0.000		0.000		0.000	0.000	65.740	65.740

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

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 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
 N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,674.244	285.826	194.367	245.129	0.000	245.129			

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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MC01: <i>Cyber Operations</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MC01: <i>Cyber Operations</i>	-	0.000	0.000	0.538	-	0.538	0.547	0.556	0.566	0.583	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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 2012	FY 2013	FY 2014
Title: Network/System Certification and Accreditation (C&A)	0.000	0.000	0.538
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MC01: <i>Cyber Operations</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
N/A			
<i>FY 2014 Plans:</i>			
-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	0.000	0.000	0.538

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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MC01: <i>Cyber Operations</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network/System Certification and Accreditation (C&A) - IA/CND Network/System C&A	C/CPFF	Torch Technologies:Various	0.000	0.000		0.000		0.538	Jul 2014	-		0.538	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.538		0.000		0.538			

Remarks
N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	0.538	0.000	0.538			

Remarks
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MT01: <i>C2BMC Test</i>	-	0.000	59.189	54.280	-	54.280	60.328	54.355	48.127	57.999	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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 flight and ground testing as detailed in the MDA Integrated Master Test Plan (IMTP).

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

	FY 2012	FY 2013	FY 2014
Title: Integrated Master Test Plan	0.000	59.189	54.280
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: FY 2012 Plans are reported in budget project MD01 \$32.084 million			
FY 2013 Plans:			
- 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 Deployment			
- Sustain the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training			
- Provide infrastructure, network, and troubleshooting support to:			
- C2BMC Control Center (CCC)			
- System Test and Operations Center (STOC)			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Ballistic Missile Defense System (BMDS) Communications Network (BCN) - Parallel Staging Network (PSN) - BMDS Network Operations and Security Center (BNOSC) - Continue BMD OPIR Architecture (BOA) performance assessments, integration, and testing - Conduct concept development test for virtualized C2BMC services, service oriented architectures - CTTO Network Architectures - Conduct initial prototypes and associated operations with CTTO interfaces and architectures - Conduct NATO Multi-National Ensemble Test #3 / Joint Project Optical Windmill (JPOW) 2013 - Conduct Exercise Rapid Arrow 2013 German/Dutch Live Fire Event <p>FY 2014 Plans: 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 II-IV 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) -- Parallel Staging Network (PSN) -- Distributed Multi-Echelon Distributed Training system (DMETS) -- Distributed Training system (DTS) - Initial build-out of Spiral 8.2 Testbed - 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 <p>Enterprise Sensors Laboratory (ESL):</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		PROJECT MT01: <i>C2BMC Test</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	FY 2013	FY 2014
<p>-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.</p> <p>-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</p> <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> <p>- 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.</p> <p>-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.</p> <p>-Host and test Spiral 8.2 engineering releases</p> <p>-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> <p>Decrease due to the FY 2013 completion of a Spiral 8.2 lab build-out in the Missile Defense Integration and Operations (MDIOC)</p>						
Accomplishments/Planned Programs Subtotals				0.000	59.189	54.280

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	67.921	79.975	309.203		309.203	212.715	220.185	220.732	220.373	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	222.696	347.012	315.183		315.183	340.899	334.705	341.811	278.313	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	88.162	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	88.162
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,139.019	992.407	937.056		937.056	987.729	1,074.941	880.468	876.685	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	86.278	51.313	44.947		44.947	32.007	33.778	34.555	34.974	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	58.970	63.043	52.131		52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	183.506	9.730	44.478		44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	484.838	454.400	375.866		375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	497.550	435.747	495.257		495.257	516.092	406.611	481.527	463.660	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	75.097	297.375	0.000		0.000	0.000	0.000	0.000	0.000	0.000	372.472

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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	MT01: <i>C2BMC Test</i>

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 to support Phased Adaptive Approach (PAA) 4. 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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

N/A

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	0.000		0.000		1.100	Oct 2013	-		1.100	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support	MIPR	Various :VA; OH; AL;NM; CA	0.000	0.000		0.000		4.570	Oct 2013	-		4.570	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	0.000		21.853	Dec 2012	19.909	Dec 2013	-		19.909	Continuing	Continuing	Continuing
Integrated Master Test Plan - Integrated Master Test Plan BMDS level	SS/CPAF	Northrop-Grumman Corporation:Colorado Springs, CO	0.000	0.000		37.336	Oct 2012	28.701	Oct 2013	-		28.701	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Testing (Element/System Test Lab Facilities)															
Subtotal			0.000	0.000		59.189		54.280		0.000		54.280			

Remarks
N/A

Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	59.189	54.280	0.000	54.280			

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	▲																											
FTP-05 (PATRIOT Intercept Flight Test)	▲																											
European Phase Adaptive Approach (EPAA)-1 Capability Declaration	▲																											
Arrow Flight Test - FY 2012		▲																										
GTX-04e (BMDS Focused Ground Test)		▲																										
Fast Eagle Increment 1			▲																									
FTM-18 (Aegis Intercept Flight Test)			▲																									
FTM-16 E2a (Aegis Intercept Flight Test)			▲																									
FTP-06 (PATRIOT Intercept Flight Test)				▲																								
Fast Eagle Increment 1 (Follow On)				▲																								
FTP-07 (PATRIOT Intercept Flight Test)				▲																								
FTG-06b (GM Intercept Flight Test)				△																								
FTM-19 (Aegis Intercept Flight Test)				△																								
GTD-04e EUCOM (BMDS Distributed Ground Test)				✦	✦																							
FTI-01 (FTO-01 Risk Reduction Flight Test)				▲																								
GTD-04e CENTCOM (BMDS Distributed Ground Test)				✦	✦																							
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (DT)					✦	✦																						
FTO-01 (Operational Test)					✦	✦																						
FTM-21 E1/E2/E3 (Aegis Flight Test)						△																						
FTM-22 E2 (Aegis Intercept Flight Test)						△																						
AST-14 (Arrow WS Intercept Flight Test)						△																						
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (OT)						✦	✦																					
GTD-04 NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)						✦	✦																					
Install Spiral 8.2 Mission Node - Ground Test							✦	✦																				
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed							✦	✦	✦																			
Install Spiral 8.2 Management Node - C2BMC Testbed							✦	✦	✦																			
SCDPTV-01 (Aegis Flight Test)								△																				

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
FTX-20 (Aegis Simulated Intercept Flight Test)																												
GTD-04e Part 2 (BMDS Ground Test)												▲																
Israeli Cooperative Intercept Flight Test - FY 2014												✦	✦															
GTI-ISR-14 (BMDS Ground Test)												✦	✦	✦	✦													
FTX-18 (Aegis Simulated Intercept Flight Test)												▲																
FTX-19 (Aegis Simulated Intercept Flight Test)												▲																
GM CTV-02 (GM Non Intercept Flight Test)												▲																
AA CTV-01 (Aegis Ashore Flight Test)												▲																
FTM-23 (Aegis Intercept Flight Test)												▲																
Fast Event 1												▲																
Fast Event 2												▲																
GTX-06 (BMDS Ground Test)												✦	✦															
FTM-24 (Aegis Intercept Flight Test)												▲																
FTG-09 (GM Intercept Flight Test)												▲																
GTI-06 Part 1 (BMDS Ground Test)												✦	✦															
AA FTM-01 (Aegis Ashore Intercept Flight Test)												▲																
AA FTM-02 (Aegis Ashore Intercept Flight Test)												▲																
FTM-25 (Aegis Intercept Flight Test)												▲																
FTM-26 (Aegis Intercept Flight Test)												▲																
FTX-21 (Aegis SBT Simulated Intercept Flight Test)												▲																
Israeli Cooperative Intercept Flight Test - FY 2015																												
SCDCTV-01 (Aegis Flight Test)																												
GTD-06 Part 1 (BMDS Ground Test)																												
FTM-27 (Aegis Intercept Flight Test)																												
FTX-22 (Cobra Dane Flight Test)																												
FTT-11a (THAAD Intercept Flight Test)																												
GTI-06 Part 2 (BMDS Ground Test)																												
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												
SCDCTV-02 (Aegis Flight Test)																												
FTG-11 (GM Intercept Flight Test) (Salvo)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
GTD-06 Part 2 (BMDS Ground Test)																												
GTX-07a (BMDS Ground Test)															◆	◆												
Israeli Cooperative Intercept Flight Test - FY 2016															◆	◆	◆	◆										
GTI-07a (BMDS Ground Test)															◆	◆	◆											
SFTM-01 E1 (Aegis Simulated Intercept Flight Test)																△												
SFTM-01 E2 (Aegis Intercept Flight Test)																△												
FTX-23 (Aegis Flight Test)																△												
FTG-15 (GM Intercept Flight Test)																△												
GTD-07a Part 1 (BMDS Ground Test)																◆	◆											
SFTM-02 (Aegis Intercept Flight Test)																	△											
FTX-24 (Aegis SBT Flight Test)																	△											
Spiral 8.2 Tri-Node Capability Declaration																	△											
Israeli Cooperative Intercept Flight Test - FY 2017																	◆	◆	◆	◆								
GTD-07a Part 2 (BMDS Ground Test)																	◆	◆										
FTT-15 (THAAD Intercept Flight Test)																		△										
Spiral 8.2 EUCOM Capability Declaration																		△										
GTX-07b (BMDS Ground Test)																		◆	◆	◆								
FTM-28 (Aegis Intercept Flight Test)																			△									
Spiral 8.2 CENTCOM Capability Declaration																			△									
FTG-13 (GM Intercept Flight Test)																				△								
GTI-07b (BMDS Ground Test)																					◆	◆	◆					
FTM-30 (Aegis Intercept Flight Test)																						△						
FTM-31 (Aegis Intercept Flight Test)																							△					
FTM-29 (Aegis Intercept Flight Test)																								△				
Israeli Cooperative Intercept Flight Test - FY 2018																								◆	◆	◆	◆	
GTD-07b Part 1 (BMDS Ground Test)																									◆	◆	◆	
FTM-33 (Aegis Intercept Flight Test)																										△		
FTM-32 (Aegis Intercept Flight Test)																											△	
GTD-07b Part 2 (BMDS Ground Test)																											◆	◆

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018							
	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				
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																																△

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	1	2012	1	2012
FTP-05 (PATRIOT Intercept Flight Test)	1	2012	1	2012
European Phase Adaptive Approach (EPAA)-1 Capability Declaration	1	2012	1	2012
Arrow Flight Test - FY 2012	2	2012	2	2012
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Fast Eagle Increment 1	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-16 E2a (Aegis Intercept Flight Test)	3	2012	3	2012
FTP-06 (PATRIOT Intercept Flight Test)	4	2012	4	2012
Fast Eagle Increment 1 (Follow On)	4	2012	4	2012
FTP-07 (PATRIOT Intercept Flight Test)	4	2012	4	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012
GTD-04e EUCOM (BMDS Distributed Ground Test)	4	2012	1	2013
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
GTD-04e CENTCOM (BMDS Distributed Ground Test)	1	2013	2	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (DT)	2	2013	3	2013
FTO-01 (Operational Test)	2	2013	3	2013
FTM-21 E1/E2/E3 (Aegis Flight Test)	3	2013	3	2013
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013
AST-14 (Arrow WS Intercept Flight Test)	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (OT)	3	2013	4	2013
GTD-04 NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)	3	2013	4	2013
Install Spiral 8.2 Mission Node - Ground Test	4	2013	1	2014
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Management Node - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Element and User Gateway Nodes (5) - C2BMC Testbed	4	2013	2	2014
SCDPTV-01 (Aegis Flight Test)	1	2014	1	2014
FTX-20 (Aegis Simulated Intercept Flight Test)	1	2014	1	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2014
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
GTI-ISR-14 (BMDS Ground Test)	1	2014	4	2014
FTX-18 (Aegis Simulated Intercept Flight Test)	2	2014	2	2014
FTX-19 (Aegis Simulated Intercept Flight Test)	2	2014	2	2014
GM CTV-02 (GM Non Intercept Flight Test)	2	2014	2	2014
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
FTM-23 (Aegis Intercept Flight Test)	3	2014	3	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
GTX-06 (BMDS Ground Test)	3	2014	4	2014
FTM-24 (Aegis Intercept Flight Test)	4	2014	4	2014
FTG-09 (GM Intercept Flight Test)	4	2014	4	2014
GTI-06 Part 1 (BMDS Ground Test)	4	2014	1	2015
AA FTM-01 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
AA FTM-02 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
FTM-25 (Aegis Intercept Flight Test)	1	2015	1	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-26 (Aegis Intercept Flight Test)	1	2015	1	2015
FTX-21 (Aegis SBT Simulated Intercept Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY 2015	1	2015	4	2015
SCDCTV-01 (Aegis Flight Test)	2	2015	2	2015
GTD-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
FTM-27 (Aegis Intercept Flight Test)	3	2015	3	2015
FTX-22 (Cobra Dane Flight Test)	3	2015	3	2015
FTT-11a (THAAD Intercept Flight Test)	3	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	3	2015	4	2015
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
SCDCTV-02 (Aegis Flight Test)	4	2015	4	2015
FTG-11 (GM Intercept Flight Test) (Salvo)	4	2015	4	2015
GTD-06 Part 2 (BMDS Ground Test)	4	2015	1	2016
GTX-07a (BMDS Ground Test)	1	2016	3	2016
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016
GTI-07a (BMDS Ground Test)	2	2016	4	2016
SFTM-01 E1 (Aegis Simulated Intercept Flight Test)	3	2016	3	2016
SFTM-01 E2 (Aegis Intercept Flight Test)	3	2016	3	2016
FTX-23 (Aegis Flight Test)	3	2016	3	2016
FTG-15 (GM Intercept Flight Test)	4	2016	4	2016
GTD-07a Part 1 (BMDS Ground Test)	4	2016	1	2017
SFTM-02 (Aegis Intercept Flight Test)	1	2017	1	2017
FTX-24 (Aegis SBT Flight Test)	1	2017	1	2017
Spiral 8.2 Tri-Node Capability Declaration	1	2017	1	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-07a Part 2 (BMDS Ground Test)	1	2017	2	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
Spiral 8.2 EUCOM Capability Declaration	2	2017	2	2017
GTX-07b (BMDS Ground Test)	2	2017	4	2017
FTM-28 (Aegis Intercept Flight Test)	3	2017	3	2017
Spiral 8.2 CENTCOM Capability Declaration	3	2017	3	2017
FTG-13 (GM Intercept Flight Test)	4	2017	4	2017
GTI-07b (BMDS Ground Test)	4	2017	2	2018
FTM-30 (Aegis Intercept Flight Test)	1	2018	1	2018
FTM-31 (Aegis Intercept Flight Test)	1	2018	1	2018
FTM-29 (Aegis Intercept Flight Test)	1	2018	1	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
GTD-07b Part 1 (BMDS Ground Test)	2	2018	4	2018
FTM-33 (Aegis Intercept Flight Test)	3	2018	3	2018
FTM-32 (Aegis Intercept Flight Test)	3	2018	3	2018
GTD-07b Part 2 (BMDS Ground Test)	3	2018	4	2018
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	-	58.525	94.394	96.257	-	96.257	100.261	102.242	103.085	96.970	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Off-site support provides:

- 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 2012	FY 2013	FY 2014
Title: Operations and Support	58.525	64.809	74.733
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
- Maintained C2BMC training suites			
- Sustained Global Engagement Manager (GEM) trainers			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Developed curriculum for and train operators, maintenance personnel, and testers - Resolved real-time operational issues through the C2BMC Control Center and 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 supported 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 operations 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 AN/TPY-2 at 5 deployed operational and test sites - Supported Host Nation operations, demonstrations, and tests - Provided sustainment training/skills proficiency to C2BMC operators - Upgraded and maintained computer network defense and network monitoring in the BNOSC - 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 - Supported the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - 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 2013 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 and Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC) at FY 2010 level - 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 2014 Missile Defense Agency		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<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 support of AN/TPY-2 radar communications nodes - Provide 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 - Provide sustainment training/skills proficiency to C2BMC operations - Upgrade and maintain computer network defense and network monitoring in the BNOSC - Operate the BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide support/sustainment for C2BMC installations - 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 AN/TPY-2 (previously in Program Element 0603884C, Project MD11) - Continue on-site C2BMC support of fielded sites for hardware and software (previously in Program Element 0603884C, Project MD11) - Continue C2BMC operator training for fielded capabilities (previously in Program Element 0603884C, Project MD11) - Continue 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 - 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 				
				FY 2013
				FY 2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	FY 2013	FY 2014
<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, 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 - Deploy second radar to Pacific Command (PACOM) <p>Increase due to requirements based on negotiated Prime contract value to maintain out of production hardware and software</p>						
Title: Concurrent, Test, Training, and Operations (CTTO)				0.000	29.585	21.524
				Articles:	0	0
Description: N/A						
FY 2012 Accomplishments: FY 2012 plans are captured in MX04, PE 0603888C - Ballistic Missile Defense Test and Targets \$32.389 million						
FY 2013 Plans: 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). <ul style="list-style-type: none"> - 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. 						

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- Development of C2BMC Spiral 8.2 Training Systems.			
FY 2014 Plans:			
- 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 Pacific Command (PACOM), Northern Command (NORTHCOM), European Command (EUCOM) and Central Command (CENTCOM).			
- 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.			
Decrease due to the leveling out of Spiral 8.2 training development and Spiral 6.4 Operations and Sustainment.			
Accomplishments/Planned Programs Subtotals	58.525	94.394	96.257

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	67.921	79.975	309.203		309.203	212.715	220.185	220.732	220.373	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	222.696	347.012	315.183		315.183	340.899	334.705	341.811	278.313	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	88.162	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	88.162

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	1,139.019	992.407	937.056		937.056	987.729	1,074.941	880.468	876.685	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	86.278	51.313	44.947		44.947	32.007	33.778	34.555	34.974	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	58.970	63.043	52.131		52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	183.506	9.730	44.478		44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	484.838	454.400	375.866		375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	497.550	435.747	495.257		495.257	516.092	406.611	481.527	463.660	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	75.097	297.375	0.000		0.000	0.000	0.000	0.000	0.000	0.000	372.472

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 to support Phased Adaptive Approach (PAA) 4. 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 2014 Missile Defense Agency		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT 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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operations and Support - DOTMLPF	IA	SETAC:-	0.000	0.500		0.000		0.000		-		0.000	0.000	0.500	0.000
Operations and Support - Indirect Support	MIPR	DISA DECC/DISA TECC:Various	0.000	4.761		9.000	Oct 2012	7.650	Oct 2013	-		7.650	Continuing	Continuing	Continuing
Operations and Support - Teleport Sustainment	MIPR	SPAWAR:San Diego, CA	0.000	2.799		2.045	Oct 2012	0.000		-		0.000	0.000	4.844	0.000
Operations and Support - Unit Personnel, Control System Improvement Sustaining Support	SS/IDIQ	Lockheed Martin Team:Arlington, VA	0.000	34.803		53.764	Jan 2013	67.083	Dec 2013	-		67.083	Continuing	Continuing	Continuing
Operations and Support - Unit Personnel, Control System Improvement, Sustaining Support	SS/CPAF	Lockheed Martin Team:Arlington, VA	0.000	13.001		0.000		0.000		-		0.000	0.000	13.001	13.001
Operations and Support - Warfighter Training	IA	Lockheed Martin Team:Arlington, VA	0.000	2.661		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training And Operations	SS/CPAF	Northrop Grumman:Boeing	0.000	0.000		3.782	Nov 2012	0.000		-		0.000	0.000	3.782	3.782
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	0.000		25.803	Dec 2012	21.524	Dec 2013	-		21.524	Continuing	Continuing	Continuing
Subtotal			0.000	58.525		94.394		96.257		0.000		96.257			

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

N/A

Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	58.525	94.394	96.257	0.000	96.257			

Remarks

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	12.549	18.602	22.151	-	22.151	21.081	23.318	26.039	25.054	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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 2012	FY 2013	FY 2014
Title: Program Wide Support	12.549	18.602	22.151
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD40: <i>Program-Wide Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	12.549	18.602	22.151

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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD40: <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	0.000	1.749		0.457	Jun 2013	0.029	Jun 2014	-		0.029	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various:Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	0.000	0.000		0.015	Oct 2012	0.000		-		0.000	0.015	0.030	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AK, AL, CA, CO, HI, VA	0.000	0.000		2.290	Nov 2012	3.100	Nov 2013	-		3.100	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various:Multi: AK, AL, CA, CO, HI, VA	0.000	8.000		15.053	Oct 2012	17.973	Oct 2013	-		17.973	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various:Multi: AK, AL, CA, CO, VA	0.000	0.000		0.787	Nov 2012	1.049	Nov 2013	-		1.049	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services Travel	Allot	Various:Multi: AL, CA, CO, VA	0.000	2.800		0.000		0.000		-		0.000	2.800	5.600	0.000
Subtotal			0.000	12.549		18.602		22.151		0.000		22.151			

Remarks
N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	12.549	18.602	22.151	0.000	22.151			

Remarks
N/A