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

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

PE 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*

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	2,978.219	1,143.313	903.172	1,033.903	-	1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
MD08: <i>Ground Based Midcourse</i>	2,978.219	1,095.755	569.622	739.423	-	739.423	745.957	724.329	531.841	484.155	Continuing	Continuing
MC08: <i>Cyber Operations</i>	-	0.000	0.000	2.124	-	2.124	2.126	2.129	2.132	2.135	Continuing	Continuing
MT08: <i>Ground Based Midcourse Test</i>	-	0.000	80.381	98.895	-	98.895	98.074	73.442	74.986	87.036	Continuing	Continuing
MX08: <i>Ground Based Midcourse Development Support</i>	-	0.000	207.133	142.856	-	142.856	152.208	155.397	163.185	170.067	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	47.558	46.036	50.605	-	50.605	47.135	47.271	43.054	38.431	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

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 Ground-based Midcourse Defense (GMD) program is the element of the Ballistic Missile Defense System (BMDS) that provides combatant commanders with a continuously available (24 hours a day, 7 days a week, 365 days a year) capability to defend the Homeland against limited Intercontinental Ballistic Missile (ICBM) attacks. The GMD capability consists of Ground Based Interceptors (GBI), GMD Fire Control system (GFC) , GMD Communications Network (GCN), In-Flight Interceptor Communications System Data Terminals (IDT) and all of the ground Launch Support Systems (LSS) (silos, silo interface vaults (SIVs), environmental control systems, command launch equipment (CLE), firing circuits and safety systems). The 30 operationally deployed GBIs located at Fort Greely, Alaska (26 GBIs) and Vandenberg Air Force Base, California (4 GBIs) each deliver a single Exoatmospheric Kill Vehicle (EKV) to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GMD Fire Control System consists of fire control nodes in Fort Greely, Alaska and Missile Defense Integration and Operations Center (MDIOC) Colorado Springs, Colorado. IDTs are currently located in Fort Greely, Alaska, Vandenberg Air Force Base, California, Eareckson Air Station, Alaska, and the Missile Defense Agency (MDA) plans to deliver an additional IDT to Fort Drum, New York. The GMD capability leverages integration of Ballistic Missile Defense System sensors in Japan, Alaska, California, United Kingdom, Greenland, and Turkey. Development objectives for GMD include: testing and validating the performance of the Capability Enhancement I and II (CE-I and CE-II) GBIs, development and testing of capability upgrades, manufacturing additional GBIs in support of operational requirements, flight testing, upgrading fielded GBIs, and conducting a comprehensive component ground testing and upgrades program that will improve GBI reliability and minimize the number of GBIs required to destroy each ICBM threat.

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 BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*

In response to FTG-06a failed intercept, the program continues to develop and qualify a modified Inertial Measurement Unit, Firmware, and Cradle Isolation to improve the Exoatmospheric Kill Vehicle's (EKV) performance in flight. Critical to the program's success is the Systems Engineering and Test activities associated with the design modification and component testing leading up to a fully Certified IMU Design. To reduce the concurrency risk to the GMD program's ability to execute the test program and deliver the remaining CE-II GBIs, the Agency has instituted a more rigorous and systematic approach to proving out the FTG-06a failure mitigations. Included in the new program is a robust design process, additional qualification tests and design verification tests, and a final certification review of all data thus ensuring the mitigations fully address the FTG-06a root cause failure. To further reduce the concurrency risk to the GMD program, the Agency has established manufacturing gates for the IMU, the EKV's, and the eventual emplacements of the CE-II GBI's. These manufacturing gates are anchored to knowledge based decisions and events included in the new more robust design and qualification process. This new approach to reduce design/manufacturing concurrency and ensure manufacturing activities are not proceeding until sufficient engineering data indicates a readiness to proceed will significantly contribute to the program's ability to successfully establish interceptor testing and delivery baselines.

Cyber Operations sustains Missile Defense Agency (MDA) DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of Plans of Action and Milestones (POA&Ms) for MDA Ground-based Midcourse Defense (GMD) mission systems.

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).

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	1,159.456	903.172	914.603	-	914.603
Current President's Budget	1,143.313	903.172	1,033.903	-	1,033.903
Total Adjustments	-16.143	0.000	119.300	-	119.300
• 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	-0.279	0.000			
• SBIR/STTR Transfer	-15.863	0.000			
• Other Adjustment	-0.001	0.000	119.300	-	119.300

Change Summary Explanation

FY 2014 funding was adjusted to: 1) Initiate the refurbishment, upgrade and High Altitude Electromagnetic Pulse (HEMP) hardening of Missile Field 1 at Fort Greely, Alaska; 2) fully fund Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK UEWB and Ft. Drum, NY IDT assets, support SBIRS interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes, 3) Initiate the Ground Systems Technology Refresh effort which provides upgrades to the Ground Systems components by reducing life cycle costs and

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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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>
ensuring sustainability, and 4) Initiate the Ground Systems suite 6B4 to provide Feature Aided Track Correlation and Feature Aided Target Object Mapping, and incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes.		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				MD08: Ground Based Midcourse			
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
MD08: Ground Based Midcourse	2,978.219	1,095.755	569.622	739.423	-	739.423	745.957	724.329	531.841	484.155	Continuing	Continuing
Quantity of RDT&E Articles		5	5	1		1	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												
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 Ground-based Midcourse Defense (GMD) program is described as follows:												
The focus of the GMD program is to enhance the reliability of Ground Based Interceptors (GBIs) and sensor architecture to ensure the most effective architecture to support the maximum probability of successful intercepts against first generation Intercontinental Ballistic Missiles (ICBMs) - greatest protection at lowest cost.												
GMD plans to confirm and improve the reliability of GBIs by instituting the GBI Reliability Growth Testing Program and the Component Reliability Program by conducting flight and ground tests, analyzing performance trends, and identifying reliability improvements for GBI component hardware. Testing of deployed GBIs will demonstrate current reliability while companion efforts on assemblies and components ensure that ongoing fleet upgrades to eliminate known risks are effective.												
Missile Defense Agency (MDA) will continue to provide for the operations, training, and sustainment of GMD fielded capability at Fort Greely, Alaska; Eareckson Air Station, Alaska; Vandenberg Air Force Base, California; the Missile Defense Integration Operations Center (MDIOC), Colorado and across the nation-wide GMD Communications Network.												
In FY 2011, a Failure Review Board (FRB) determined the cause of unsuccessful intercept of Flight Test Ground-based Midcourse Defense-06a (FTG-06a). GMD is incorporating the Agency's direction to reduce concurrency risk in the RTI Systems Engineering and Test activities by changing the FY 2013 - FY 2014 test program to include three intercept test missions and establish a spiral manufacturing approach to deliver the remaining CE-II GBIs. GMD is executing a Return To Intercept (RTI) program that addresses the root cause; develops modified designs; confirms a solution to the issue through intensive ground testing; conducts non-intercept flight tests, Controlled Test Vehicle (CTV-01 and CTV-02); and an intercept test mission, Flight Test Ground-based Midcourse Defense-09 (FTG-09). The Changes to the GMD flight test schedule may be necessary pending final analysis of the CTV-01 test.												
GMD continues to build sub-assemblies that are not affected by FTG-06a root cause failure for the Interceptors (GBI) (GBIs 34-44) and deliver the Flight Test Interceptors required to support the RTI program. Once the corrective action is verified through ground and flight testing, operational interceptor deliveries will resume												

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment	PROJECT MD08: Ground Based Midcourse	
(GBIs 45-47 have been utilized in previous GMD flight tests). GMD will continue long lead development and manufacturing for GBIs 48-58 in support of operational requirements incorporating Failure Review Board (FRB) resolutions, flight testing, and the Reliability Growth Program.				
GMD continues building upon the Initial Homeland Defense that provides the fundamental capability against intermediate and long-range Ballistic Missiles threats. Work scope includes: 1) Conduct a CE-I intercept test, Flight Test Ground-based Midcourse Defense-07 (FTG-07); 2) Interceptors (GBIs 34-44); 3) Ground Systems 6B1.5 suite delivery to integrate an additional forward based Army/Navy Transportable Radar Surveillance-2 (AN/TPY-2) radar using the Ballistic Missile Defense System Command, Control, Battle Management, and Communications (C2BMC) System; 4) Ground Systems 6B2 suite delivery to provide expanded C2BMC essential elements of information for situational awareness, dynamic positioning capability for the In Flight Interceptor Communications System (IFICS) Data Terminal (IDT) on the Sea Based X-Band Radar (SBX) platform, SBX version 3 interoperability, Warfighter requested changes, which enables the use of data provided by up to 14 AN-TPY-2 radars; 5) Ground Based Interceptor Exoatmospheric Kill Vehicle (EKV) software version 9 Capability Enhancement II (CE- II) and version 22 Capability Enhancement I (CE-I) to incorporate in-flight performance improvements and support to the flight test program; 6) Fort Greely Power Plant, Missile Field-2, and 2nd GMD Fire Control Node delivery to provide the Warfighter with continuous dual-node operations; 7) Flight Test the weapon system against an Intermediate Range Ballistic Missile (IRBM) target with associated objects; 8) Ground Test the weapon system as a part of Ground Test - 04 (GT-04) campaign to assess Ballistic Missile Defense System (BMDS) capabilities.				
Ground-based Midcourse Defense (GMD) also continues to develop an Enhanced Homeland Defense capability against intermediate and long-range Ballistic Missiles threats. Work scope includes: 1) Interceptors (GBIs 48-58); 2) Missile Field 1 at Fort Greely, Alaska refurbishment, upgrade and High Altitude Electromagnetic Pulse (HEMP) hardening; 3) Ground Systems 6B3 suite delivery to use Near Term Discrimination (NTD) data, integrate the Clear, AK and Cape Cod, MA Upgrade to Early Warning Radar (UEWR) and Ft. Drum, NY In-Flight Interceptor Communications System (IFICS) Data Terminals (IDT) assets, support Space-Based Infrared System (SBIRS) interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes; 4) Ground Based Interceptor Exoatmospheric Kill Vehicle (EKV) software version 10 Capability Enhancement II (CE-II) and version 23 Capability Enhancement I (CE-I) to incorporate in-flight performance improvements and support to the flight test program; 5) Fort Drum, NY IDT delivery to increase system performance in specific engagement scenarios; 6) Flight Test the weapon system against targets with increasing complexity and in a salvo launch sequence; 7) Demonstrate the ability to integrate future BMDS sensor improvements; and 8) Ground Test the weapon system as a part of Ground Test - 06 (GT-06) campaign to assess BMDS capabilities.				
In response to the new projected threat to the homeland, the FY 2014 President's Budget Request contains \$53M in RDTE and \$82M in MILCON to initiate Missile Field - 1 refurbishment. This project will include demolishing and building a hardened Mechanical Electrical Building, installation of utility lines and ventilation systems, obsolescence upgrades to mission critical equipment, and acceptance/functional testing. Once completed in 2016, MF-1 will be a 6 silo High Altitude Electromagnetic Pulse (HEMP) hardened Missile Field. Additionally, the MDA will direct 6 GBIs be emplaced starting in FY 2016 achieving a full 44 GBI capability in FY 2017.				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Title: Ground Based Interceptor		549.751	295.242	408.844
Articles:		5	5	1
Description: Ground-based Midcourse Defense (GMD) delayed delivery of Capability Enhancement II (CE-II) Ground Based Interceptors (GBIs 34-44) due to the Flight Test Ground-based Midcourse Defense-06a (FTG-06a) test failure. However, GMD				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
continued to build sub-assemblies that are not affected by FTG-06a root cause failure for the Ground Based Interceptors (GBIs 34-44), and deliver the Flight Test Interceptors required to support the Return to Intercept (RTI) program. The GBI program supports defense of the Homeland by manufacturing both flight test and operational interceptors (GBIs 34-44) to both demonstrate interceptor performance as part of the Return to Intercept (RTI) program, and then to replace older fielded configuration GBIs to ensure a total of 30 operational assets are available to the Warfighter. To aid in the accomplishment of this mission, the GBI program provides developmental assets through conversion of older fielded GBIs to Flight Test configuration to support the Integrated Master Test Plan (IMTP). Available GBI components are being used in the collection of reliability and aging data as part of the Component Reliability Program. With the award of the Deployment and Sustainment Contract (DSC) in December 2011, acquisition of five Ground Based Interceptors 48-52 were initiated in FY 2012 with plans for FY 2013 acquisition of six additional Ground Based Interceptors (GBIs 53-58) to support the operations and testing. (Note: Addition of 1 GBI (58) for testing of Capability Enhancement-II (CE-II) Block I GBI per Integrated Master Test Plan (IMTP)) <i>FY 2012 Accomplishments:</i> -Continued GBI Fleet Upgrade program to enhance reliability of the fielded GMD system and to support the Component Reliability Program (CRP) by providing hardware for data collection events, such as Aging & Surveillance testing -Continued acquisition of Interceptors (GBIs 34-44) (subject to FTG-06a Failure Review Board (FRB) findings and resolution) to support both operations and testing -Continued the repurposing of two operational Ground Based Interceptors (GBIs) to support GMD Return-to-Intercept (RTI) program -Continued the repurposing of one operational GBI as a backup to support GMD RTI program -Continued flight test rotation program of fielded GBIs to support the IMTP requirements and the Component Reliability Program -Continued RTI component lab testing (failure resolution testing and risk reduction testing): continued Test E (Chamber Hot Fire) test series -Continued RTI Exoatmospheric Kill Vehicle (EKV) software mitigation / redesign efforts and Inertial Measurement Unit (IMU) firmware resolution / validation -Initiated Upgrade Kit and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs to support flight test rotations of older GBIs as part of the program plan to sustain the GBI to FY 2032 and beyond -Completed purchase of booster and EKV components including motor sets for five Interceptors (GBIs 48-52), mitigating manufacturing restart costs of the select group of warm GBI 3rd and 4th tier suppliers -Initiated acquisition of 5 Interceptors (GBIs 48-52) that are supported by the completion of the booster and EKV component purchases -Continued GBI Component Reliability Program (CRP) which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet upgrade requirements			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
-Continued Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACS) Alternate Thruster design FY 2013 Plans: -Continue acquisition of Interceptors (GBIs 34-44) (subject to FTG-06a Failure Review Board (FRB) findings and resolution) to support both operations and testing -Complete the repurposing of one operational GBI to support Ground-based Midcourse Defense (GMD) Return to Intercept (RTI) series: FTG-06b Backup -Continue incorporation of RTI resolution findings into GBI fleet -Continue GBI Software Builds and Sustainment to support operational and flight test objectives -Continue GBI Stockpile Reliability Program (SRP) which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet upgrade requirements -Continue acquisition of five Interceptors (GBIs 48-52) that are supported by the completion of the booster and EKV component purchases -Continue EKV Divert and Attitude Control System (DACS) Alternate Thruster design -Initiate acquisition of five additional Interceptors (GBIs 53-57) to support enhanced GMD testing FY 2014 Plans: -Continue Ground Based Interceptors (GBI) Fleet Upgrade program to include fielded Capability Enhancement II (CE-II) GBIs -Continue acquisition of remaining CE-II (Legacy) Ground Based Interceptors (GBIs 34-44) Should MDA eliminate CTV-02 in FY14 and instead proceed to the CE-II intercept flight test (FTG-06b) in 1st quarter FY 2014, after the successful intercept test, the remaining CE-II GBIs will begin delivering for operational emplacements. -Continue acquisition of CE-II (upgraded boosters with Block I CE-II EKV) Ground Based Interceptors (GBIs 48-58) to support both operations and testing, including a new flight test to demonstrate the capability of the CE-II Block 1 GBIs -Continue GBI Software Builds and Sustainment to support operational and flight test objectives -Complete the Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACS) Alternate Thruster design qualification to increase GBI reliability -Continue flight test rotation program of fielded GBIs to support the Integrated Master Test Plan (IMTP) requirements and the Component Reliability Program -Continue Upgrade Kit and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs -Continue the GBI Reliability Growth Testing Program and the Component Reliability Programs to eliminate known risks and identify reliability improvements for GBI component hardware -Continue to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Increase due to additional funding required in FY 2014 for the development and manufacturing of GBIs 48-58, alternate thruster design program and a more robust GBI component reliability testing program.			
Title: Systems Engineering and Program Management		106.219	85.466
Articles:		0	0
Description: Ground-based Midcourse Defense (GMD) Systems Engineering provides essential services for the development and fielding of the GMD hardware and software. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification efforts. Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated GMD element capability.			
Program Management provides for prime contractor management of the GMD program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.			
FY 2012 Accomplishments:			
-Continued requirements development, engineering analysis, capability integration, and performance verification for GMD development and Ballistic Missile Defense System (BMDS) integration, including GMD compliance with the BMD System Specification, BMD System Description Document, and Master Integration Plan (MIP)			
-Continued Technical Performance Measurement (TPM) program to assess the current GMD capabilities against the evolving BMDS threat			
-Continued modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments			
-Continued modeling and simulation verification and validation to establish high confidence in Warfighter assessments			
-Initiated the development of modeling and simulation wrapped tactical code to reduce the life cycle cost and increase the fidelity of the results.			
-Supported Component Requirements Reviews and Preliminary Design Reviews (PDR) for the GMD contribution to the BMDS Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and Ground Based Interceptor (GBI) hardware (e.g., Fleet Avionics Upgrade / Obsolescence Program) and software capabilities development to ensure delivery of a successful capability			
-Continued design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter			
-Utilized Exoatmospheric Kill Vehicle (EKV) Hardware-In-The-Loop (HWIL) 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing (PMT) and Post Flight Reconstruction (PFR) in support of Return to Intercept (RTI) program			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
-Conducted EKV Capability Enhancement II (CE-II) performance and flight environment analysis to assess EKV mitigations FY 2013 Plans: -Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration, including GMD compliance with the BMDS Specification, BMDS Description Document, and Master Integration Plan (MIP) -Continue Technical Performance Measurement (TPM) program to assess the current Ground-based Midcourse Defense (GMD) capabilities against the evolving BMDS threat -Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments -Continue modeling and simulation verification and validation to establish high confidence in Warfighter assessments -Support Component Requirements Reviews and Preliminary Design Reviews (PDR) for the GMD contribution to the Ballistic Missile Defense System (BMDS) Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and Ground Based Interceptor (GBI) hardware (e.g., Fleet Avionics Upgrade / Obsolescence Program) and software capabilities development to ensure delivery of a successful capability -Continue design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter -Utilize Exoatmospheric Kill Vehicle (EKV) Hardware-In-The-Loop (HWIL) 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing and Post Flight Reconstruction in accordance with the Integrated Master Test Plan (IMTP) to reduce execution risks from additional data and gaining confidence that capabilities performed as expected FY 2014 Plans: -Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration -Continue Technical Performance Measurement (TPM) program to assess the current GMD capabilities against the evolving BMDS threat -Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments -Continue the development of modeling and simulation wrapped tactical code to reduce the life cycle cost and increase the fidelity of the results, and initiate the code integration into a single BMDS framework to facilitate the interoperability between BMDS elements -Continue modeling and simulation verification and validation to establish high confidence in Warfighter assessments -Continue the development of modeling and simulation wrapped tactical code to reduce the life cycle cost and increase the fidelity of the results, and initiated the code integration into a single BMDS framework to facilitate the interoperability between BMDS elements.			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
-Support Component Requirements Reviews and PDR for the GMD contribution to the BMDS Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and GBI hardware (e.g., CE-II Block 1) and software capabilities development to ensure delivery of a successful capability -Continue design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter -Utilize EKV HWIL 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing and Post Flight Reconstruction in accordance with the Integrated Master Test Plan (IMTP) to reduce execution risks from additional data and gaining confidence that capabilities performed as expected -Continue providing support to the GBI Reliability Growth Testing Program and the Component Reliability Program to eliminate known risks and identify reliability improvements for GBI component hardware -Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight to ensure program meets all cost, schedule, and performance requirements Increase due to the addition of all contractor Systems Engineering and Program Management which was previously carried under other Midcourse accomplishments (GBI, GS, etc.). This change is consistent with contractor cost data reporting on the new Development and Sustainment Contract.			
Title: Program Operations Articles: Description: Program Operations provides for government management of the Ground-based Midcourse Defense (GMD) program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test and sustain the GMD system and components. FY 2012 Accomplishments: -Provided technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities -Provided contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight -Ensured GMD program compliance with internal and external direction, policies, and regulations -Conducted Internal Baseline Reviews that align with the six Missile Defense Agency (MDA) approved baselines -Continued a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety		119.215 0	118.939 0
		80.491 0	

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
-Provided Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter FY 2013 Plans: -Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data -Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and test oversight to identify variances and initiate corrective actions to mitigate cost, schedule, or performance impacts -Ensure GMD program compliance with internal and external direction, policies, and regulations to deliver capability critical within a consistent and disciplined process -Conduct internal Baseline Execution Reviews (BER) to measure program progress against the six MDA approved baselines -Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs -Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter FY 2014 Plans: -Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data -Ensure Ground-based Midcourse Defense (GMD) program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process -Conduct internal Baseline Execution Reviews (BER) to measure program progress against the six Missile Defense Agency (MDA) approved baselines -Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs -Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Decrease due to the movement of Prime contract program management costs to the Systems Engineering and Program Management (SE/PM) accomplishment in FY 2014.			
Title: Ground Systems		100.291	69.975
Articles:		0	0
Description: The Ground-based Midcourse Defense (GMD) Ground Systems enable control and operation of the GMD Element as part of the Ballistic Missile Defense System (BMDS). Ground Systems consists of the GMD Fire Control, External Systems Interface (ESI), GMD Communications Network, In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Site Components (LSC) (silos, silo interface vaults (SIVs)), and Launch Support Systems (LSS) (Command Launch Equipment (CLE) and Launch Support Equipment (LSE).			
FY 2012 Accomplishments: -Initiated Ground Systems suite 6B3 to utilize Near Term Discrimination (NTD) data, integrate Ft. Drum, NY IDT assets, support Space-Based Infrared System (SBIRS) interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes -Delivered the new fourteen silo Missile Field-2 (MF-2) and Missile Field-2 Mechanical Electrical Building (MEB) to provide the Warfighter with a reliable and hardened Missile Field capability at Fort Greely, Alaska -Delivered the second Fire Direction Center (FDC) Node at Fort Greely, Alaska to provide the Warfighter with continuous dual-node operations -Initiated preliminary design in preparation for construction of an In Flight Interceptor Communications System (IFICS) Data Terminal (IDT) for Ft Drum, NY increased defensive capability against emerging threats -Initiated design efforts for storage state of Missile Field-1 (MF-1) once MF-2 is complete and operational -Completed the testing of the Fort Greely Power Plant and reached interim operational status			
FY 2013 Plans: -Continue Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK UEWR and Ft. Drum, NY IDT assets, support Space-Based Infrared System interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes -Complete the preliminary design and initiate construction efforts for an In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) at Fort Drum that will increase system performance in specific engagement scenarios -Continue storage state efforts for the Fort Greely, AK Missile Field-1 (MF-1)			
FY 2014 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
-Deliver Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK and Cape Cod, MA UEWB and Ft. Drum, NY IDT assets, support SBIRS interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes -Continue development and integration efforts for an In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) at Fort Drum, NY that will increase system performance in specific engagement scenarios -Initiate the Ground Systems Technology Refresh effort which provides upgrades to the Ground Systems components by reducing life cycle costs and ensuring sustainability. -Initiate the Ground Systems suite 6B4 to provide Feature Aided Track Correlation and Feature Aided Target Object Mapping, and incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes -Initiate the refurbishment, upgrade and High Altitude Electromagnetic Pulse (HEMP) hardening of Missile Field 1 at Fort Greely, Alaska Decrease due to Development and Sustainment Contract (DSC) efficiencies in software builds and Fort Drum development / integration.			
Title: BMDS Level Testing Articles: Description: Ground-based Midcourse Defense (GMD) executes an enhanced test program that includes expanding our flight and ground test programs to demonstrate our Initial Homeland Defense and Enhanced Homeland Defense capabilities against long-range threats. The GMD elements of the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP) are intended to demonstrate the integrated missile defense capabilities under development and ensure the capabilities delivered to the Warfighter are operationally effective, suitable, and survivable. FY 2012 Accomplishments: -Continued to support execution of Ballistic Missile Defense System (BMDS) Ground Test-04 (GT-04) test campaign to assess BMDS capabilities with integration of additional BMDS sensors -Provided test infrastructure and coordination of flight test range support from Vandenberg Air Force Base for all range activities, engineering, operators and GBI transportation -Provided Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the Ground Based Midcourse Defense system from Colorado Springs, CO -Supported pre and post-flight test mission communications to include fulfillment of Government Furnished Equipment/ Government Furnished Services requirements and data analysis		66.778 0	0.000 0
		0.000 0	0.000 0

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment		PROJECT MD08: Ground Based Midcourse
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-Provided System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs -Supported risk reduction testing through the use of the Prime Consolidated Integration Lab (PCIL) designed for engineering and integration activities leading up to scheduled flight tests and supported by appropriate analysts, environments and equipment -Continued to support the Flight Test Ground Based Interceptor-06a (FTG-06a) failure response, which includes the conduct of a non-intercept test, Controlled Test Vehicle (CTV-01), to verify FTG-06a corrective actions. The test will be a 3-stage Capability Enhancement II (CE-II) non-intercept test of the Exoatmospheric Kill Vehicle (EKV), using a GBI launched from Vandenberg Air Force Base, California. There is no target planned for this test -Continued to support the planning for Flight Test Ground-Based Midcourse Defense-09 (FTG-09), a 3-stage intercept engagement, using a Ground Based Interceptor (GBI) launched from Vandenberg Air Force Base against a target launched from Reagan Test Site (RTS) -Demonstrated Ground Based Midcourse Defense Fire Control (GFC) 6B2 capabilities during Ground Test GTX-04e. This test integrated the GFC with updated software versions of the Sea Based X-Band Radar (SBX 3.1), Aegis Ballistic Defense (Aegis BMD 4.0.1), and the Army Navy/Transportable Radar Surveillance Model-2 (AN/TPY-2) Forward Based Mode (FBM CX-1) FY 2013 Plans: Starting in FY 2013, the BMDS Level Testing accomplishment will move from Project MD08 into Project MT08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment. FY 2014 Plans: N/A				
Title: Sustainment Articles: Description: The Operations and Sustainment (O&S) mission provides for the operations, maintenance, repair, training, and sustaining engineering of the Ground-based Midcourse Defense (GMD) System. In addition to the above, O&S provides base operations support for GMD facilities in Colorado Springs, Colorado; Vandenberg Air Force Base, California; Fort Greely, Alaska and Eareckson Air Station, Alaska. FY 2012 Accomplishments: -Continued to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all Ground-based Midcourse Defense (GMD) sites -Continued to support Base Operations at all GMD Sites in accordance with host installation support agreements -Continued utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability		153.5010	0.0000	0.0000

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				PROJECT MD08: Ground Based Midcourse			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014
-Continued on-site sustaining engineering, for real time trouble shooting and ensuring logistics analysis is incorporated in technical data products -Continued to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System -Continued to perform failure analysis and resolve systemic issues to reduce sustainment costs -Continued to identify and prioritize obsolescence issues for resolution to support Ground Systems Obsolescence Upgrade Program -Continued to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system -Continued to develop and field technical manuals to maintain crew proficiency and support architecture baseline changes FY 2013 Plans: Starting in FY 2013, the Sustainment accomplishment will move from Project MD08 into Project MX08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment. FY 2014 Plans: N/A											
Accomplishments/Planned Programs Subtotals									1,095.755	569.622	739.423
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
• 0603884C: Ballistic Missile Defense Sensors	222.696	347.012	315.183		315.183	340.899	334.705	341.811	278.313	Continuing	Continuing
• 0603888C: Ballistic Missile Defense Test & Targets	88.162	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	88.162
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	356.900	366.552	418.355		418.355	433.470	454.452	461.991	451.947	Continuing	Continuing
• 0603907C: Sea Based X-Band Radar (SBX)	183.506	9.730	44.478		44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
Remarks											

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<u>D. Acquisition Strategy</u> The Ground-based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures that the GMD components are upgraded to improve both system performance and interceptor reliability in order to retain the proven GMD contribution to the Integrated Ballistic Missile Defense System (BMDS). This acquisition approach minimizes the risk of parts availability, provides opportunities for incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while exploring improved operational and technological capabilities. GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract continues development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities. The DSC emphasizes the application of performance-based tenets to provide timely high quality support of the core GMD system while reducing life cycle and long-term ownership costs. GMDs DSC acquisition strategy for transition of the legacy content into the DSC provides uninterrupted field operations; development of both Ground Systems and Interceptor (GBI) products, including manufacturing additional interceptors to support both operations and testing and the requirement to demonstrate war fighting capability through a rigorous ground and flight test program.		
<u>E. Performance Metrics</u> 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						R-1 ITEM NOMENCLATURE					PROJECT				
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment					MD08: Ground Based Midcourse				
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
Ground Based Interceptor - Alternate Thruster Program	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	27.400		0.000		15.319		-		15.319	Continuing	Continuing	Continuing
Ground Based Interceptor - GBI Component Lab Testing	C/CPIF	Boeing AL/AK/AZ/CA/CO/TX/VA:NASA WSTF, NM	0.000	47.756		0.000		2.574		-		2.574	0.000	50.330	0.000
Ground Based Interceptor - Ground Based Interceptors 34-44	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	429.644	192.168		116.956		95.648		-		95.648	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors 48-58	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	30.494		11.461		148.543		-		148.543	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors New Interceptor Development	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	39.114	58.195		59.789		42.759		-		42.759	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Prime Upgrades & Operational Spares	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	95.159	43.599		59.784		48.468		-		48.468	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Rotations for Ballistic Missile Defense System Level Testing	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	146.677	92.329		23.095		18.053		-		18.053	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Software Maintenance & Updates	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	9.590	6.517		11.550		7.793		-		7.793	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Supplier Restart / Requalification	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	90.029	17.729		0.000		0.000		-		0.000	0.000	107.758	0.000

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APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
0400: Research, Development, Test & Evaluation, Defense-Wide						PE 0603882C: Ballistic Missile Defense				MD08: Ground Based Midcourse					
BA 4: Advanced Component Development & Prototypes (ACD&P)						Midcourse Defense Segment									
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
Ground Based Interceptor - Prime Reliability Program	C/CPIF	Boeing AL/AK/ AZ:CA/CO/TX/VA	4.364	20.168		12.607		16.986		-		16.986	Continuing	Continuing	Continuing
Ground Based Interceptor - Reliability Program	MIPR	AMRDEC / Redstone Arsenal, AL:NSWC Crane, Indiana	0.000	0.000		0.000		12.434		-		12.434	Continuing	Continuing	Continuing
Ground Based Interceptor - Return to Intercept Program	SS/CPAF	Boeing AL/AK/ AZ:CA/CO/TX/VA	27.317	13.396		0.000		0.000		-		0.000	0.000	40.713	0.000
Ground Based Interceptor - Upgrades and Operational Spares	MIPR	NSWC / Crane, Indiana:AMCOM Safety Office / Huntsville, AL	0.000	0.000		0.000		0.267		-		0.267	Continuing	Continuing	Continuing
Ground Systems - FGA Future Power Plant Integration	SS/CPAF	Boeing AL/AK/ AZ:CA/CO/VA	0.000	27.128		0.000		0.000		-		0.000	0.000	27.128	0.000
Ground Systems - Fort Drum IDT	MIPR	MDA/AL:/VA/NY	0.000	0.000		0.000		0.879		-		0.879	Continuing	Continuing	Continuing
Ground Systems - Ground Systems Engineering Services	C/CPIF	Boeing AL/AK/ AZ:CA/CO/VA	39.378	0.000		1.359		0.000		-		0.000	0.000	40.737	0.000
Ground Systems - Ground Systems Hardware Development	C/CPIF	Boeing AL/AK/ AZ:CA/CO/VA	0.000	0.016		15.964		0.453		-		0.453	0.000	16.433	0.000
Ground Systems - Ground Systems – MF-1 Refurbishment and Upgrade	TBD	TBD:AK/TBD	0.000	0.000		0.000		53.000		-		53.000	Continuing	Continuing	Continuing
Ground Systems - Information Assurance	C/CPIF	Boeing AL/AK/ AZ:CA/CO/VA	0.000	0.000		7.714		0.000		-		0.000	0.000	7.714	0.000
Ground Systems - Long Haul Communications Transfer to Defense Information Systems Agency	MIPR	MDA:DISA	32.967	5.585		0.000		0.000		-		0.000	0.000	38.552	38.552

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0400: Research, Development, Test & Evaluation, Defense-Wide						PE 0603882C: Ballistic Missile Defense				MD08: Ground Based Midcourse					
BA 4: Advanced Component Development & Prototypes (ACD&P)						Midcourse Defense Segment									
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
Ground Systems - Prime Fort Drum IDT	C/CPIF	Boeing AL:CO/NY/VA	0.000	4.653		7.600		0.045		-		0.045	Continuing	Continuing	Continuing
Ground Systems - Prime Ground Systems Software Development	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	27.804	62.350		33.183		60.868		-		60.868	Continuing	Continuing	Continuing
Ground Systems - Storage State MF-1	C/CPIF	Boeing AL/AK/AZ:CA/CO	0.000	0.000		4.155		0.000		-		0.000	0.000	4.155	0.000
Ground Systems - Upgrades for BMDS Level Testing	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	0.000	0.559		0.000		1.286		-		1.286	Continuing	Continuing	Continuing
Subtotal			942.043	650.042		365.217		525.375		0.000		525.375			
Remarks															
N/A															
Support (\$ 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
Systems Engineering and Program Management - Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	68.402	49.821		25.748		26.745		-		26.745	Continuing	Continuing	Continuing
Systems Engineering and Program Management - EKV HWIL Tests in Space Chamber	MIPR	AEDC:Tullahoma, TN	0.000	0.000		0.000		4.708		-		4.708	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Modeling and Simulation	MIPR	SED and McMorrow Labs:Redstone Arsenal/AL	0.000	0.000		0.000		10.676		-		10.676	Continuing	Continuing	Continuing
Systems Engineering and Program Management -	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	53.224	5.585		13.214		2.786		-		2.786	Continuing	Continuing	Continuing

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Support (\$ 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
Prime EKV HWIL Tests in Space Chamber															
Systems Engineering and Program Management - Prime Modeling and Simulation	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	88.342	22.176		30.740		20.609		-		20.609	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime System Engineering and Integration	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	189.728	28.637		15.764		22.312		-		22.312	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime-Program Management	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		0.000		43.752		-		43.752	Continuing	Continuing	Continuing
Systems Engineering and Program Management - System Engineering and Integration	MIPR	MDA ARC / Colsa:Huntsville, AL	0.000	0.000		0.000		1.969		-		1.969	Continuing	Continuing	Continuing
Program Operations - Contract Support Services	C/CPFF	Sparta, BCF, Quantech, Paradigm:AL/AK/CA/CO/VA	194.729	33.763		38.619		33.866		-		33.866	Continuing	Continuing	Continuing
Program Operations - FFRDC Support	MIPR	MIT/LL:AL/VA/CO	16.742	5.242		2.107		4.687		-		4.687	Continuing	Continuing	Continuing
Program Operations - Global Deployment Support	MIPR	MDA:AL	53.847	5.242		0.000		0.000		-		0.000	0.000	59.089	76.065
Program Operations - Govt Civilian Salaries	MIPR	MDA:AL/VA	73.750	31.562		39.083		34.150		-		34.150	Continuing	Continuing	Continuing
Program Operations - Misc Software/BB/PCS	MIPR	MDA:AL/CA/VA/CO/AK	0.000	0.137		0.931		1.454		-		1.454	Continuing	Continuing	Continuing
Program Operations - Other Govt Agencies	MIPR	Various:AL/VA/FL/CO	15.300	4.975		3.154		4.972		-		4.972	Continuing	Continuing	Continuing

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Support (\$ 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
Program Operations - Prime Program Management	C/FPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	221.220	35.959		17.024		0.000		-		0.000	0.000	274.203	0.000
Program Operations - Safety and Quality	MIPR	MDA:AL/AK/CA/VA	0.000	0.335		0.000		0.017		-		0.017	Continuing	Continuing	Continuing
Program Operations - Small Business Innovation Research (SBIR)	MIPR	MDA:AL/VA	0.000	0.000		16.675		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Travel	MIPR	MDA:AL/VA	0.000	2.000		1.346		1.345		-		1.345	Continuing	Continuing	Continuing
Sustainment - Colorado Springs Operations (Gov't Leases & Services)	MIPR	Air Force: COS, CO	8.200	7.084		0.000		0.000		-		0.000	0.000	15.284	0.000
Sustainment - Fort Greely, Alaska Operations (Gov't Leases & Services)	MIPR	Army: Ft. Greely, AK	38.729	19.604		0.000		0.000		-		0.000	0.000	58.333	0.000
Sustainment - Government Furnished Equipment & Services (GFX)	MIPR	Military Traffic Management Command: Various AL/AK/AZ/CA/CO/TX/VA	33.797	4.321		0.000		0.000		-		0.000	0.000	38.118	0.000
Sustainment - Maintenance of Primary System	C/CPIF	Boeing AL/AK/AZ:CA	340.137	49.147		0.000		0.000		-		0.000	0.000	389.284	0.000
Sustainment - Operations & Sustainment Repair and Maintenance Personnel	C/CPIF	Boeing AL/AK/AZ:CA	54.333	12.685		0.000		0.000		-		0.000	0.000	67.018	0.000
Sustainment - Sustaining Support Services	C/CPIF	Boeing AL/AK/AZ:CA	309.149	43.439		0.000		0.000		-		0.000	0.000	352.588	0.000
Sustainment - Vandenberg Air Force Base Operations (Gov't Leases & Services)	MIPR	Air Force: Vandenberg, CA	4.500	3.337		0.000		0.000		-		0.000	0.000	7.837	0.000
Sustainment - Warfighter Training	C/FPIF	Boeing AL/AK:CA/CO/VA	0.000	13.884		0.000		0.000		-		0.000	0.000	13.884	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment						PROJECT MD08: Ground Based Midcourse			
Support (\$ 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
Subtotal			1,764.129	378.935		204.405		214.048		0.000		214.048			
Remarks N/A															
Test and Evaluation (\$ 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
BMDS Level Testing - EKV HWIL Flight Tests in Space Chamber	MIPR	AEDC:Tullahoma, TN	0.000	7.284		0.000		0.000		-		0.000	0.000	7.284	0.000
BMDS Level Testing - Flight Test Planning, Analysis & Execution	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	137.872	31.860		0.000		0.000		-		0.000	0.000	169.732	0.000
BMDS Level Testing - Flight Test Range Costs	MIPR	VAFB, CA/RTS, Kwaj:PMRF, HI	24.486	15.781		0.000		0.000		-		0.000	0.000	40.267	0.000
BMDS Level Testing - Flight Test Silo Turnaround	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	7.420	3.444		0.000		0.000		-		0.000	0.000	10.864	0.000
BMDS Level Testing - Ground Test-04 Campaign (Focused-Integrated-Distributed)	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	15.640	3.114		0.000		0.000		-		0.000	0.000	18.754	0.000
BMDS Level Testing - Test Infrastructure & Support	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	86.629	5.295		0.000		0.000		-		0.000	0.000	91.924	0.000
Subtotal			272.047	66.778		0.000		0.000		0.000		0.000	0.000	338.825	0.000
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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>				PROJECT MD08: <i>Ground Based Midcourse</i>				

Management Services (\$ 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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks N/A															
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	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	2,978.219	1,095.755		569.622		739.423		0.000		739.423			

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-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

PE 0603882C: Ballistic Missile Defense
Midcourse Defense Segment

PROJECT

MD08: Ground Based Midcourse

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

	FY 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
2nd FGA GMD Fire Control Node	▲																											
Fort Greely, Alaska Missile Field - 2	✦	✦																										
Fort Greely, Alaska Power Plant	✦	✦	✦	✦	✦																							
Ground Based Interceptors (34-44)	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground Based Interceptors (48-58)	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground Based Interceptors Rotation and Upgrades	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Ground-based Midcourse Defense Ground Test-04 test campaign		✦	✦	✦	✦	✦	✦	✦	✦																			
Fort Drum, NY IDT		✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦															
Missile Field 1 Refurbishment and Upgrade									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦								

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
2nd FGA GMD Fire Control Node	1	2012	1	2012
Fort Greely, Alaska Missile Field - 2	1	2012	2	2012
Fort Greely, Alaska Power Plant	1	2012	1	2013
Ground Based Interceptors (34-44)	1	2012	1	2016
Ground Based Interceptors (48-58)	1	2012	4	2018
Ground Based Interceptors Rotation and Upgrades	1	2012	4	2018
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Ground-based Midcourse Defense Ground Test-04 test campaign	2	2012	2	2014
Fort Drum, NY IDT	2	2012	1	2015
GM CTV-01 (GM Non-Intercept Flight Test)	3	2012	3	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
Ground Systems 6B3 (FQT)	4	2013	4	2013
Missile Field 1 Refurbishment and Upgrade	1	2014	4	2016
Ground Systems 6B4 (FQT)	1	2016	1	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				PROJECT MC08: Cyber Operations			
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
MC08: Cyber Operations	-	0.000	0.000	2.124	-	2.124	2.126	2.129	2.132	2.135	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 MC08 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD08 of this PE.												
A. Mission Description and Budget Item Justification												
The funding in this project sustains Missile Defense Agency (MDA) DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager (PM/IAM) Plans of Action and Milestones (POA&Ms) for MDA Ground-based Midcourse Defense (GMD) 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	2.124	
									0	0	0	
Description: The Network/Systems Certification and Accreditation project sustains the 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.												

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
<i>FY 2012 Accomplishments:</i> A new Cyber Operations budget project (MC08) was created for FY 2014 - previous efforts funded from budget project MD08 <i>FY 2013 Plans:</i> A new Cyber Operations budget project (MC08) was created for FY 2014 - previous efforts funded from budget project MD08 <i>FY 2014 Plans:</i> -Fund Ground-based Midcourse Defense (GMD) Information Assurance Manager (IAM) civilian salaries. -Conduct cyber security / Information Assurance (IA) engineering and architecture planning for GMD information technology systems. -Plan and test the IA controls for Ballistic Missile Defense System (BMDS) GMD systems. -Develop GMD DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. -Conduct Controls Validation Testing (CVT) of GMD mission systems and provide Plan of Action and Milestones to mitigate IA deficiencies. -Conduct annual information assurance reviews on the GMD enclaves to assess compliance in implementing and maintaining IA controls.			
Accomplishments/Planned Programs Subtotals		0.000	0.000
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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment						PROJECT MC08: Cyber Operations			
Support (\$ 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
Network / System Certification and Accreditation (C&A) - BMDS CND/IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton:MDA AL	0.000	0.000		0.000		0.541	Jul 2014	-		0.541	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies:MDA AL	0.000	0.000		0.000		1.425	Jul 2014	-		1.425	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Civilian Salaries	MIPR	MDA:AL/VA	0.000	0.000		0.000		0.158	Oct 2013	-		0.158	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		2.124		0.000		2.124			
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		2.124		0.000		2.124			
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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</i>	

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

	FY 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
BMDs Cybersecurity Policy Development									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Transition to Cybersecurity Risk Management Framework (CRMf)									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Information Assurance Certification and Accreditation (C&A) Package Preparation/Submission									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Cybersecurity Program Policy / Risk Management									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Cybersecurity Mitigation Monitoring and Tracking									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMDS Cybersecurity Policy Development	1	2014	4	2018
GMD Transition to Cybersecurity Risk Management Framework (CRMF)	1	2014	4	2018
GMD Information Assurance Certification and Accreditation (C&A) Package Preparation/ Submission	1	2014	4	2018
GMD Cybersecurity Program Policy / Risk Management	1	2014	4	2018
GMD Cybersecurity Mitigation Monitoring and Tracking	1	2014	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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				PROJECT MT08: Ground Based Midcourse Test			
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
MT08: Ground Based Midcourse Test	-	0.000	80.381	98.895	-	98.895	98.074	73.442	74.986	87.036	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												
Budget Project MT08: Ground-based Midcourse Test consists of three accomplishment areas; Infrastructure, Flight Test, and Ground Test. Infrastructure consists of the support and framework required to successfully conduct both flight and ground testing. Flight Test and Ground Test accomplishments consist of the execution of the individual tests.												
Ground-based Midcourse Defense (GMD) executes an enhanced test program that includes expanding our flight and ground test programs to demonstrate our Initial Homeland Defense and Enhanced Homeland Defense capabilities against long-range threats. The GMD elements of the BMDS Integrated Master Test Plan (IMTP) are intended to demonstrate the integrated missile defense capabilities under development and ensure the capabilities delivered to the Warfighter are operationally effective, suitable, and survivable.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: Infrastructure									0.000	40.557	23.441	
									Articles: 0	0	0	
Description: Provides support associated with day-to-day operations of the flight and ground test programs to include engineering support for ground test planning, execution, and post-event reconstruction.												
FY 2012 Accomplishments: See Budget Project MD08 for FY 2012 Accomplishments												
FY 2013 Plans: -Provide test infrastructure and coordination of flight test range support from Vandenberg Air Force Base, California for all range activities, engineering, operators and Ground Based Interceptor (GBI) transportation												

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
-Provide Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the Ground-based Midcourse Defense (GMD) system from Colorado Springs, CO -Support pre- and post-flight test mission communications to include fulfillment of Government Furnished Equipment (GFE) / Government Furnished Services (GFS) requirements and data analysis -Provide System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs -Support risk reduction testing through the use of the Prime Consolidated Integration Lab designed for engineering and integration activities leading up to scheduled flight tests and supported by appropriate analysts, environments and equipment FY 2014 Plans: -Provide test infrastructure and coordination of flight test range support from Vandenberg Air Force Base, California for all range activities, engineering, operators and GBI transportation, including preparation for the first GBI salvo flight test -Provide Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the GMD system from Colorado Springs, CO -Support pre- and post-flight test mission communications to include fulfillment of GFE /GFS requirements and data analysis -Provide System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs -Support risk reduction testing through the use of the Prime Consolidated Integration Lab designed for engineering and integration activities leading up to scheduled flight tests and supported by appropriate analysts, environments and equipment Decrease due to Development and Sustainment Contract (DSC) efficiencies, lab consolidations, and innovations to test infrastructure. Additionally System Engineering and Program Management (SE/PM) costs were moved to the SE/PM accomplishment in FY 2014.			
Title: Flight Test Articles: Description: Flight tests demonstrate the capabilities and/or phenomenology that cannot be adequately tested or obtained during ground testing. Flight tests also provide opportunities to test actual hardware and to demonstrate Ballistic Missile Defense System (BMDS) Element interoperability under operationally realistic conditions. FY 2012 Accomplishments:		0.000 0	27.119 0
		67.242 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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
See Budget Project MD08 for FY 2012 Accomplishments			
FY 2013 Plans: -Complete post-mission analysis for Flight Test Ground-based Midcourse Defense-06b (FTG-06b), a 3-stage Capability Enhancement II (CE-II) intercept engagement with associated objects, using a GBI launch from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS) -Initiate planning for the Flight Test Ground-based Midcourse Defense-08 (FTG-08), intercept engagement with associated objects, using a Ground Based Interceptor (GBI) launch from Vandenberg Air Force Base, California against an Intermediate Range Ballistic Missile (IRBM) target -Initiate planning for the Flight Test Ground-based Midcourse Defense-11 (FTG-11), a salvo intercept test against one Intercontinental Ballistic Missile (ICBM) target with associated objects, using GBIs launched from Vandenberg Air Force Base, California FY 2014 Plans: - Conduct Flight Test Ground-based Midcourse Defense Control Test Vehicle-02 (GM CTV-02), using a GBI launched from Vandenberg Air Force Base, California -Conduct Flight Test Ground-based Midcourse Defense-09 (FTG-09), using a GBI launched from Vandenberg Air Force Base, California against an IRBM target. The MDA is considering changes to the GMD flight test schedule pending final analysis of the CTV-01 test. Initial results indicate very robust performance of the CE-II EKV. If conclusive, we will eliminate CTV-02 in FY14 and instead fly the next CE-II intercept flight test (FTG-06b) in 1st quarter FY 2014, and plan to then conduct a second GBI Intercept Flight Test in late FY 2014. -Collect Critical Engagement Conditions (CEC) / Empirical Measurement Events (EME) data that validates Models and Simulations (M&S) -Initiate planning for the Flight Test Ground-based Midcourse Defense-11 (FTG-11), a salvo intercept test against one ICBM target with associated objects, using GBI launched from Vandenberg Air Force Base, California -Initiate planning to participate in the BMDS system-level Flight Test Other-10 (FTX-10), a Sensor Tracking Test Increase due to the increased costs for Prime contract and Test Range and Resources for the planning and execution of a flight test.			
Title: Ground Test Articles: Description: Ground tests demonstrate and validate Warfighter tactics, techniques, and procedures. Ground tests are executed both in the Hardware-in-the-loop (HWIL) lab and in the field. HWIL lab tests integrate and assess Ballistic Missile Defense System		0.000 0	12.705 0
		8.212 0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency								DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				PROJECT MT08: Ground Based Midcourse Test			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2012	FY 2013	FY 2014	
(BMDS) system- level performance based on new element capabilities. Ground tests in the field use existing fielded element assets and tactical communication networks, to integrate, assess and demonstrate the new element capabilities.											
FY 2012 Accomplishments: See Budget Project MD08 for FY 2012 Accomplishments											
FY 2013 Plans: -Complete support and execution of BMDS Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors -Initiate planning of BMDS Ground Test-06 test campaign											
FY 2014 Plans: -Demonstrate and test the mission functionality of the Ground-based Midcourse Defense (GMD) Ground Fire Control (GFC) version 6B2 BMDS capabilities using fielded assets and long haul communications networks during the Ground Test GTD-04e -Integrate with other BMDS elements and demonstrate GMD Ground Fire Control (GFC) 6B3 capabilities using a lab based Hardware-in-the-Loop (HWIL) Configuration during the Ground Test GTX-06a -Continue to support execution of BMDS Ground Test-06 test campaign to assess BMDS capabilities with integration of additional BMDS assets (Ft. Drum, NY In Flight Information Communication System (IFICS) Data Terminal (IDT), Clear and Cape Cod Upgraded Early Warning Radar (UEWR) Integration, and the Space-Based Infrared System (SBIRS) Increment 2 Change) Decrease due to DSC efficiencies.											
Accomplishments/Planned Programs Subtotals								0.000	80.381	98.895	
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
• 0603914C: Ballistic Missile Defense Test	484.838	454.400	375.866		375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
• 0603915C: Ballistic Missile Defense Targets	497.550	435.747	495.257		495.257	516.092	406.611	481.527	463.660	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The Ground-based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures that the GMD components are upgraded to improve both system performance and interceptor reliability in order to retain											

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
the proven GMD contribution to the Integrated Ballistic Missile Defense System (BMDS). This acquisition approach minimizes the risk of parts availability, provides opportunities for incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while exploring improved operational and technological capabilities. GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract continues development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities. The DSC emphasizes the application of performance-based tenets to provide timely high quality support of the core GMD system while reducing life cycle and long-term ownership costs. GMDs DSC acquisition strategy for transition of the legacy content into the DSC provides uninterrupted field operations; development of both Ground Systems and Interceptor (GBI) products, including manufacturing additional interceptors to support both operations and testing; and the requirement to demonstrate war fighting capability through a rigorous ground and flight test program. <u>E. Performance Metrics</u> 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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment						PROJECT MT08: Ground Based Midcourse Test			
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
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 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
Infrastructure - Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		7.753		9.236		-		9.236	Continuing	Continuing	Continuing
Infrastructure - Prime Program Management	C/FPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		1.004		0.000		-		0.000	0.000	1.004	0.000
Infrastructure - Systems Engineering	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.930		0.000		-		0.000	0.000	0.930	0.000
Flight Test - Prime Program Management	C/FPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		1.067		0.000		-		0.000	0.000	1.067	0.000
Flight Test - Systems Engineering	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.988		0.000		-		0.000	0.000	0.988	0.000
Ground Test - Prime Program Management	C/FPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.543		0.000		-		0.000	0.000	0.543	0.000
Ground Test - System Engineering	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.503		0.000		-		0.000	0.000	0.503	0.000
Subtotal			0.000	0.000		12.788		9.236		0.000		9.236			
Remarks - Starting in FY 2014, Program Management and Systems Engineering moves back to MD08 due to the way the Development and Sustainment Contract (DSC) was awarded.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					PROJECT				
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment					MT08: Ground Based Midcourse Test				
Test and Evaluation (\$ 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
Infrastructure - Additional Ground Test Activities	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		0.467		0.000		-		0.000	0.000	0.467	0.000
Infrastructure - Government Infrastructure Support, Labs, and Communications	MIPR	VAFB/AL:CO	0.000	0.000		0.000		8.358		-		8.358	Continuing	Continuing	Continuing
Infrastructure - Prime Infrastructure Support, Labs, and Communications	C/CPIF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		0.000		5.847		-		5.847	Continuing	Continuing	Continuing
Infrastructure - Support Infrastructure	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		9.693		0.000		-		0.000	0.000	9.693	0.000
Infrastructure - Test Communications	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		7.794		0.000		-		0.000	0.000	7.794	0.000
Infrastructure - Test Labs	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		12.916		0.000		-		0.000	0.000	12.916	0.000
Flight Test - Integration EKV HWIL Tests in Space Chamber	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Flight Test - Planning and Silo Refurbishment	C/CPIF	Boeing AL/AK/AZ/ CA:CO/OR/TX/VA	0.000	0.000		0.000		29.874		-		29.874	Continuing	Continuing	Continuing
Flight Test - Planning, Analysis & Execution	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		18.182		0.000		-		0.000	0.000	18.182	0.000
Flight Test - Range Costs	MIPR	VAFB, CA:RTS, Kwaj PMRF, HI	0.000	0.000		2.143		0.000		-		0.000	0.000	2.143	0.000
Flight Test - Range, Resources, and Engineering	MIPR	VAFB/CO:PMRF	0.000	0.000		0.000		37.368		-		37.368	Continuing	Continuing	Continuing
Flight Test - Silo Turnaround	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		4.739		0.000		-		0.000	0.000	4.739	0.000
Ground Test - Ground Test-04 Campaign	C/CPAF	Boeing AL/AK/AZ/ CA:CO/TX/VA	0.000	0.000		10.356		1.000		-		1.000	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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment						PROJECT MT08: Ground Based Midcourse Test			
Test and Evaluation (\$ 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
Ground Test - Ground Test-06 Campaign	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		1.303		3.659		-		3.659	Continuing	Continuing	Continuing
Ground Test - System Level Ground Test	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.000		3.553		-		3.553	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		67.593		89.659		0.000		89.659			
Remarks - Starting in FY 2014, Government Infrastructure Support, Labs, and Communications and Prime Infrastructure Support, Labs, and Communications now contains: Test Communications, Support Infrastructure, Test Labs, and Additional Ground Test Activities, due to the way the Development and Sustainment Contract (DSC) was awarded. - Starting in FY 2014, Integration EKV HWIL Tests in Space Chamber moves to the Systems Engineering and Program Management accomplishment in MD08. - Starting in FY 2014, Flight Test Planning and Silo Refurbishment were combined due to the way the Development and Sustainment Contract (DSC) was awarded.															
Management Services (\$ 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
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		80.381		98.895		0.000		98.895			
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: Research, Development, Test & Evaluation, Defense-Wide
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603882C: Ballistic Missile Defense
Midcourse Defense Segment

PROJECT

MT08: Ground Based Midcourse Test

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
Ground-based Midcourse Defense Ground Test-04 test campaign		✦	✦	✦	✦	✦	✦	✦	✦	✦																		
CTV-02 (GM Non-Intercept Flight Test) *												○																
Ground-based Midcourse Defense Ground Test-06 test campaign												✦	✦	✦	✦	✦	✦											
FTG-09 (GM Intercept Flight Test) *												○																
FTG-11 (GM SALVO Intercept Flight Test)																○												
Ground-based Midcourse Defense Ground Test-07 test campaign																		✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
FTG-15 (GM Intercept Flight Test)																				○								
FTG-13 (GM Intercept Flight Test)																							○					
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												△

Note

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Ground-based Midcourse Defense Ground Test-04 test campaign	2	2012	2	2014
GTD-04e Part 1 (BMDS Distributed Ground Test) OT	1	2013	1	2013
GTI-04e Part 1 (BMDS Integrated HWIL Ground Test) DT/OT	1	2013	1	2013
GTI-04e Part 1 (BMDS Integrated HWIL Ground Test)	1	2013	1	2013
GTD-04e Part 1 (BMDS Distributed Ground Test)	2	2013	2	2013
GTI-04e Part 1a (BMDS Integrated HWIL Ground Test)	3	2013	3	2013
GTI-04e Part 1a (BMDS Integrated HWIL Ground Test) DT/OT	3	2013	3	2013
GTI-04e Part 2 (BMDS Integrated HWIL Ground Test)	4	2013	4	2013
GTI-04e Part 2 (BMDS Integrated HWIL Ground Test) DT/OT	4	2013	4	2013
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2014
CTV-02 (GM Non-Intercept Flight Test) *	2	2014	2	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
GTX-06 (BMDS Ground Test)	3	2014	4	2014
Ground-based Midcourse Defense Ground Test-06 test campaign	3	2014	1	2016
FTG-09 (GM Intercept Flight Test) *	4	2014	4	2014
GTI-06 Part 1 (BMDS Ground Test)	4	2014	1	2015
GTD-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	3	2015	4	2015
FTG-11 (GM SALVO Intercept Flight Test)	4	2015	4	2015
GTD-06 Part 2 (BMDS Ground Test)	4	2015	1	2016

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTX-07a (BMDS Ground Test)	1	2016	3	2016
Ground-based Midcourse Defense Ground Test-07 test campaign	1	2016	4	2018
GTI-07a (BMDS Ground Test)	2	2016	4	2016
FTG-15 (GM Intercept Flight Test)	4	2016	4	2016
GTD-07a Part 1 (BMDS Ground Test)	4	2016	1	2017
GTD-07a Part 2 (BMDS Ground Test)	1	2017	2	2017
GTX-07b (BMDS Ground Test)	2	2017	4	2017
FTG-13 (GM Intercept Flight Test)	4	2017	4	2017
GTI-07b (BMDS Ground Test)	4	2017	2	2018
GTD-07b Part 1 (BMDS Ground Test)	2	2018	4	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

Note

* Accelerated test schedules possible if certain RTI program knowledge points/criteria are met

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				PROJECT MX08: Ground Based Midcourse Development Support			
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
MX08: Ground Based Midcourse Development Support	-	0.000	207.133	142.856	-	142.856	152.208	155.397	163.185	170.067	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 Missile Defense Agency (MDA) will continue to provide for the operations, training, and sustainment of Ground-based Midcourse Defense (GMD) fielded capability at Fort Greely, Alaska; Eareckson Air Station, Alaska; Vandenberg Air Force Base, California; the Missile Defense Integration Operations Center (MDIOC), Colorado and across the nation-wide GMD Communications Network.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: Sustainment Articles: Description: The Operations and Sustainment (O&S) mission provides for the operations, maintenance, repair, training, and sustaining engineering of the Ground-based Midcourse Defense (GMD) System. In addition to the above, O&S provides base operations support for GMD facilities in Colorado Springs, Colorado; Vandenberg Air Force Base, California; Fort Greely, Alaska and Eareckson Air Station, Alaska. FY 2012 Accomplishments: See Budget Project MD08 for FY 2012 Accomplishments FY 2013 Plans: -Continue to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all GMD sites -Continue to support Base Operations at all GMD sites in accordance with host installation support agreements -Continue utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability -Continue on-site sustaining engineering, for real time trouble shooting and ensuring logistics analysis is incorporated in technical data products									0.000	207.133	142.856	
									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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>		PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2012	FY 2013	FY 2014
-Continue to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System -Continue to perform failure analysis and resolve systemic issues to reduce sustainment costs -Continue to identify and prioritize obsolescence issues for resolution to support Ground Systems Obsolescence Upgrade Program -Continue to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system -Continue to develop and field technical manuals to maintain crew proficiency and support architecture baseline changes FY 2014 Plans: -Continue to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all GMD sites -Continue to support Base Operations at all GMD sites in accordance with host installation support agreements -Continue utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability -Continue on-site sustaining engineering ensuring logistics analysis is incorporated in technical data products -Continue to perform failure analysis and resolve systemic issues to reduce sustainment costs -Continue to identify and prioritize replacement part issues for resolution to support Ground Systems Sustaining Engineering Program -Continue to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system -Continue to develop and field technical manuals to support maintenance, maintain crew proficiency, and support architecture baseline changes Decrease due to Development and Sustainment Contract (DSC) efficiencies, lower labor costs, and innovations to weapon system operation and maintenance and Warfighter training. Additionally System Engineering and Program Management (SE/PM) costs were moved to the SE/PM accomplishment.					
Accomplishments/Planned Programs Subtotals			0.000	207.133	142.856
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</i>
<u>D. Acquisition Strategy</u> The Ground-based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures that the GMD components are upgraded to improve both system performance and interceptor reliability in order to retain the proven GMD contribution to the Integrated Ballistic Missile Defense System (BMDS). This acquisition approach minimizes the risk of parts availability, provides opportunities for incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while exploring improved operational and technological capabilities. GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract continues development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities. The DSC emphasizes the application of performance-based tenets to provide timely high quality support of the core GMD system while reducing life cycle and long-term ownership costs. GMDs DSC acquisition strategy for transition of the legacy content into the DSC provides uninterrupted field operations; development of both Ground Systems and Interceptor (GBI) products, including manufacturing additional interceptors to support both operations and testing; and the requirement to demonstrate war fighting capability through a rigorous ground and flight test program.		
<u>E. Performance Metrics</u> 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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment						PROJECT MX08: Ground Based Midcourse Development Support			
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
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 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
Sustainment - Colorado Springs Operations	MIPR	Air Force COS:CO	0.000	0.000		3.905		3.920		-		3.920	Continuing	Continuing	Continuing
Sustainment - Fort Greely, Alaska Operations	MIPR	Army Ft. Greely:AK	0.000	0.000		19.196		19.675		-		19.675	Continuing	Continuing	Continuing
Sustainment - Government Furnished Property & Services	MIPR	Military Traffic Management Command:Various AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		8.081		4.891		-		4.891	Continuing	Continuing	Continuing
Sustainment - Information Assurance	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		3.312		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Maintenance of Primary System	SS/CPIF	Boeing AL/AK/AZ:CA/VA	0.000	0.000		72.551		102.471		-		102.471	Continuing	Continuing	Continuing
Sustainment - Operations & Sustainment Repair and Maintenance Personnel	SS/CPIF	Boeing AL/AK/AZ:CA/VA	0.000	0.000		11.310		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Program Management	C/FPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		7.334		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - RAM-T	MIPR	Naval Surface Warfare Center:IN	0.000	0.000		3.245		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Sustaining Support Services	SS/CPIF	Boeing AL/AK/AZ:CA/VA	0.000	0.000		54.466		0.000		-		0.000	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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment						PROJECT MX08: Ground Based Midcourse Development Support			
Support (\$ 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
Sustainment - Systems Engineering	C/CPIF	Boeing AL/AK/ AZ:CA/CO/TX/VA	0.000	0.000		6.760		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Vandenberg Air Force Base Operations	MIPR	Air Force Vandenberg:CA	0.000	0.000		4.304		4.081		-		4.081	Continuing	Continuing	Continuing
Sustainment - Warfighter Training, Exercises, and Wargames	MIPR	MDA:AL/CO	0.000	0.000		12.669		7.818		-		7.818	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		207.133		142.856		0.000		142.856			
Remarks - Starting in FY 2014, RAM-T has moved to the Ground Based Interceptor accomplishment in MD08. - Starting in FY 2014, Sustainment Maintenance of Primary System now contains Sustaining Support Services and Operations & Sustainment Repair and Maintenance Personnel, due to the way the Development and Sustainment Contract (DSC) was awarded. - Starting in FY 2014, Program Management and Systems Engineering moves back to MD08 due to the way the Development and Sustainment Contract (DSC) was awarded.															
Test and Evaluation (\$ 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
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 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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>				PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</i>				
	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		207.133		142.856		0.000		142.856			
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: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Midcourse Defense Segment				PROJECT MD40: Program-Wide Support			
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: Program-Wide Support	-	47.558	46.036	50.605	-	50.605	47.135	47.271	43.054	38.431	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												
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									47.558	46.036	50.605	
									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:												
See paragraph A: Mission Description and Budget Item Justification												
Accomplishments/Planned Programs Subtotals									47.558	46.036	50.605	

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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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD40: <i>Program-Wide Support</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>						PROJECT MD40: <i>Program-Wide Support</i>			
Support (\$ 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
Program Wide Support - Agency Operations Management	C/CPAF	Various:Multi: AL, CA, CO, VA	0.000	10.558		3.709	Mar 2013	10.827	Mar 2014	-		10.827	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA:Multi: AK, AL, CA, CO, VA	0.000	34.000		35.171	Oct 2012	33.350	Oct 2013	-		33.350	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (FFP)	C/FFP	PHACIL, INC:Multi: AK, AL, CA, CO, VA	0.000	0.000		0.240	Nov 2012	0.306	Nov 2013	-		0.306	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPR)	MIPR	Various:Multi: AK, AL, CO, CA, HI, VA	0.000	0.000		2.085	Apr 2013	2.280	Apr 2014	-		2.280	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	American Institute of Aeronautics & AS:VA	0.000	0.000		0.000		0.321	Feb 2014	-		0.321	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Sustainment Transportation	Reqn	Various:AK, AL, CA	0.000	0.000		0.344	Nov 2012	0.344	Nov 2013	-		0.344	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPFF	Utah St Univ; JHU/ APL LLC:Multi: MD, UT	0.000	0.000		1.310	Jan 2013	0.000		-		0.000	1.310	2.620	0.000
Program Wide Support - Facilities and Maintenance	MIPR	Various:Multi: AK, AL, CA, VA	0.000	3.000		3.177	Mar 2013	3.177	Mar 2014	-		3.177	Continuing	Continuing	Continuing
Subtotal			0.000	47.558		46.036		50.605		0.000		50.605			
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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>				PROJECT MD40: <i>Program-Wide Support</i>				
	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	47.558		46.036		50.605		0.000		50.605			
Remarks N/A													