MDA Exhibit R-2 RDT&E Budget Item Justification APPROPRIATION/BUDGET ACTIVITY		NOMENCLA]	Date F ebruary 2	004		
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P) 0603	882C Ballis	tic Missile	Defense Mi	idcourse De	efense Segm	ient
COST (\$ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	3,056,035	3,724,066	4,384,775	3,067,800	3,087,147	1,881,298	1,802,257
3011 Block 2004 Test Bed	369,455	0	0	0	0	0	0
0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)	0	1,342,816	861,059	0	0	0	0
3012 GMD Dev & Test Bed Upgrades	2,121,573	0	0	0	0	0	0
0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development	0	1,587,089	2,331,881	2,131,180	2,113,342	0	0
0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development	0	0	0	0	0	1,236,413	1,237,596
3020 Sea-Based Midcourse Defense (SMD)	386,200	0	0	0	0	0	0
0709 AEGIS Ballistic Missile Defense Block 2004	0	640,892	965,800	177,600	0	0	0
0809 AEGIS Ballistic Missile Defense Block 2006	0	23,585	106,494	674,667	776,288	50,325	0
0909 AEGIS Ballistic Missile Defense Block 2008	0	0	0	20,100	144,700	533,840	434,577
0009 AEGIS Ballistic Missile Defense Block 2010	0	0	0	0	7,753	30,000	94,414
0402 Japanese Cooperative Program	0	53,382	72,457	24,806	0	0	0
3050 Segment Common Engineering and Integration	99,358	0	0	0	0	0	0
3090 Program-Wide Support	79,449	0	0	0	0	0	0
0602 Program-Wide Support	0	76,302	47,084	39,447	45,064	30,720	35,670

A. Mission Description and Budget Item Justification

The goal of the Ballistic Missile Defense System (BMDS) is to defend the United States and our allies, friends, and deployed forces from ballistic missiles of all ranges in all phases of flight. By the beginning of FY 2005, we will put the BMDS on alert and, for the first time, we will have a capability to defeat a ballistic missile threatening the United States. In FY 2005 and the remainder of the FYDP, we will increase the breadth and depth of our defense by adding forward-deployed, networked sensors, by adding interceptors at sea and on land, and by adding layers of increasingly capable weapons and sensors. Throughout this documentation, therefore, every activity can be tied to one of our four objectives: complete, verify and test the Initial Defensive Capability; put the Ballistic Missile Defense System on alert; develop procedures and logistics to perform and sustain concurrent testing and operations; and enhance the BMDS capability. The developed and fielded elements of the Midcourse segment comprise most of the critical components in meeting these goals in the near-term.

Implementation of the BMDS requires the development of biennial block capabilities where the subsequent block capabilities will build on and be integrated into the predecessor blocks. By incorporating spiral development, operational capabilities will be enhanced in planned, sequential increments to meet expected and evolving threats. In Block 2004, the Midcourse segment will develop and field an Initial Defensive Capability (IDC) consisting of ground-based and sea-based interceptors, sensors, and battle management systems. The Block 2006 will enhance the operational capabilities of the BMDS with the fielding of additional interceptors, sensors, battle management hardware, and software upgrades. Future blocks will not only enhance the Midcourse segment but will also incorporate Boost and Terminal phase systems from other MDA elements.

The midcourse segment systems capability is measured by Engagement Sequence Groups (ESG) which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the Midcourse Defense systems within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the Midcourse Defense interceptors against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems become available. Block 2004 includes six BMDS ESGs (Engage on AEGIS, Launch on AEGIS, Engage on Cobra Dane, Engage on UEWRs

	Date
MDA Exhibit R-2 RDT&E Budget Item Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

(Beale and Fylingdales), and Engage on Sea-Based X-Band radar. These are the focus of IDC. Block 2006 incorporates two additional BMDS ESGs (Engage on UEWR (Thule) and Launch on DSP/SBIRS). Block 2008 incorporates three additional BMDS ESGs (Engage on Forward-Based X-Band Radar (FBX), Launch/Engage on EO/IR, and Launch/Engage on THAAD). ESGs are embedded into Midcourse Defense Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including interceptor surveillance testing, EKV and SBX upgrades, and sea launched interceptors enable improvements to all ESGs and increase warfighter confidence.

In addition, the Block 2004 IDC provides a robust, flexible Test Bed to support the continuing development and testing of new and evolving BMDS technologies. This concurrent operations and testing capability supports a wide range of flight and ground test scenarios, multiple basing modes, and phenomenology. The BMDS Test Bed will incorporate capabilities to evaluate (1) countermeasures, (2) multiple target and interceptor test launch sites, (3) flexible engagement scenarios, (4) enhanced test infrastructure, and (5) a wide range of sea and land-based radar sensors.

The flow down of Ballistic Missile Defense System (BMDS) capability specifications resulting from Missile Defense National Team efforts in Command and Control, Battle Management, and Communications (C2BMC) and Systems Engineering & Integration will guide the integration of Targets and Countermeasures, Test and Evaluation, and Program Operations Support into the BMD System, the BMDS C2BMC architecture, and the BMD Test Bed.

Consistent with the MDA block management framework, the Ground-based Midcourse Element of the BMDS consists of Blocks 2004, 2006, and 2008:

- 1) The Block 2004 represents the early development and fielding of the IDC including ground-based interceptors, an upgraded Cobra Dane radar, upgraded Early Warning Radars, a Sea-Based X-Band Radar, In-Flight Interceptor Communications Systems (IFICS) data terminals (IDT), Fire Control and Communication Nodes, and communications networks including fiber and satellite communications systems.
- 2) The Block 2006 includes continued development and fielding of ground-based capabilities, integrated testing of the multi-layered BMDS components, implementing the concept of a rotable pool of interceptors to ensure latest capabilities are fielded, and researching the option of emplacing GBIs on a sea-based platform. As a follow-on to the initial capability provided in Block 2004, MDA is fielding additional ground-based interceptors, UEWRs, IDTs. These enhancements broaden the area of coverage of the initial BMDS. Additionally, it will continue the development of enhanced capabilities to detect, track, intercept, and defeat ballistic missile threats.
- 3) The Block 2008(covered under Project 0908) includes integrated testing of the multi-layered BMDS components and continued development of ground-based capabilities, countermeasures mitigation, multi-sensor fusion, advanced discrimination, enhanced EKV technologies, and additional GFC capabilities.

The Aegis Ballistic Missile Defense (Aegis BMD) element of the Midcourse Defense Segment (MDS) of the Ballistic Missile Defense System (BMDS) provides for the capability for U.S. Navy Surface Combatants to detect, track, intercept, and destroy Short Range Ballistic Missiles (SRBMs) to Intermediate Range Ballistic Missiles (IRBMs) in the terminal and midcourse phases of the battlespace while forward deployed or on Fleet Missile Defense Patrol in defense of the nation, deployed U.S. forces, friends, and allies. The extent of Aegis BMD capability against short range missiles in the terminal phase is being explored. The Aegis BMD element builds upon the existing Aegis Weapons System (AWS) and the Standard Missile (SM) infrastructure deployed in Aegis Cruisers and Destroyers.

System development and testing will be integrated with the BMDS Test Bed and architecture fully supporting the Missile Defense Agency's (MDA) capability based acquisition approach for BMD. Each technological advance in Aegis BMD will be evaluated by the Government and industry team for upgrades to the BMDS Test Bed/architecture in accordance with annual MDA decision reviews.

The Aegis BMD System element consists of five (5) major efforts:

- 1) Block 2004 will be technically capable of initial defensive operations.
- 2) Block 2006 focuses on development of improved prototype radar discrimination.
- 3) Block 2008 focuses on development of a fully integrated radar system.
- 4) Block 2010 integrates with the Navy developed Aegis Open Architecture System.
- 5) Japan Cooperative Research continues cooperative research in Ballistic Missile Defense with the Japan Defense Agency (JDA).

	Date
MDA Exhibit R-2 RDT&E Budget Item Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

Aegis BMD element objectives include the following:

- 1) Provide BMD from configured Aegis Cruisers and Destroyers against short through intermediate range ballistic missiles using capability based spiral development.
- 2) Demonstrate through live fire testing (using SM-3 guided missiles controlled by BMD modified AWS) each hit-to-kill capability improvement against more difficult ballistic missiles.
- 3) Develop the forward sensor capabilities of the Aegis AN/SPY-1 Radar integrated into the BMDS.
- 4) Demonstrate forward sensor capabilities in Ground-based Midcourse Defense (GMD) Integrated Flight Tests (IFTs).
- 5) Modify existing Aegis Cruisers and Destroyers and provide SM-3 missiles.
- 6) Develop and demonstrate enhanced discrimination capabilities.
- 7) Conduct a Short Range Ballistic Missile (SRBM) low exo-atmospheric experiment to test the ability to expand the Aegis BMD element engagement volume to lower engagement altitudes.
- 8) Continue the U.S./Japan Cooperative Research.
- 9) Expand the Aegis based defense of ballistic missiles by integrating and testing the BMDS interceptor being developed by the Missile Defense Agency (MDA).

Program-Wide Support under this project covers personnel and related support costs, statutory and fiscal requirements. May include funding for government civilians performing program-wide oversight functions such as contracting, program integration, safety, quality and mission assurance at Missile Defense Agency (MDA); cost estimating; audit; technology integration across all MDA projects; and assessment of schedule, cost and performance, documentation of related programmatic issues and, foreign currency fluctuations on limited number of foreign contracts. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510.

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004 PB)	3,103,844	3,613,266	3,841,412
Current President's Budget (FY 2005 PB)	3,056,035	3,724,066	4,384,775
Total Adjustments	-47,809	110,800	543,363
Congressional Specific Program Adjustments	0	153,000	0
Congressional Undistributed Adjustments	0	-42,200	0
Reprogrammings	-8,520	0	543,363
SBIR/STTR Transfer	-39,289	0	0

Additional funding of \$543.363 million in FY 2005 is for expanded capability to the BMDS system as directed by OSD.

				Date			
MDA Exhibit R-2A RDT&E Project Justification		February 2004					
APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE			TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603882C Ballistic Missile Defense Midcourse Defense Segment				nent			
COST (\$ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3011 Block 2004 Test Bed	369,455	0	0	0	0	0	0
RDT&E Articles Qty	(0	0	0	0	0	0

Note: This Project has been restructured beginning in FY 2004 to Project 0708. This restructure represents MDA's Block development and management framework for the BMDS.

A. Mission Description and Budget Item Justification

The Ground-Based Midcourse (GMD) segment of the Ballistic Missile Defense System (BMDS) consists of a series of block development efforts supporting the midcourse phase of the BMDS. The goals of the BMDS are (1) to complete, verify, and test the BMDS; (2) to place an operational capability on alert by September 30, 2004; (3) to enhance these fielded capabilities when appropriate; and (4) to perform concurrent operations and testing of a BMDS. The elements being developed and fielded in the Midcourse segment will comprise most of the critical components meeting these goals in the near-term.

GMD system capability is measured by Engagement Sequence Groups (ESG) which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the GMD system within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the GMD GBI against a target. Four BMDS ESGs (Engage on AEGIS, Launch on AEGIS, Engage on Cobra Dane, Engage on UEWRs and Engage on Sea-Based X-Band radar) are the focus of IDC. ESGs are embedded into GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases.

The GMD Block 2004 effort provides for the fielding of the Initial Defensive Capability (IDC) directed by the President in December 2002. The IDC initiative provides missile fields and infrastructure, ground based interceptors, In-Flight Interceptor Communication System (IFICS) Data Terminals (IDT), communication networks, and sensors, as augmented by BMDS Test Bed developmental assets initiated under Project 3011. The GMD system employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies. Block 2004 will deliver and field the initial infrastructure, field the initial increment of interceptors, and provide for initial sustainment infrastructure for the IDC.

The Block 2004 is being completed in two phases. The first phase, the initial BMDS Test Bed with a limited defensive capability, is to be completed by September 30, 2004. The second phase provides an enhanced capability and additional assets that can also be utilized for the BMDS Test Bed. It is to be completed in December 2005. The IDC consists of:

- Missile Fields and Infrastructure. The IDC consists of two (2) missiles fields at Fort Greely, AK and operational silos at Vandenberg AFB, CA. The BMDS Test Bed provides for the construction of the first missile field with operating infrastructure at Fort Greely, which is to be completed in 2004. Six (6) common silos, launch site components, and command launch equipment will be fielded in the first missile field. The IDC initiative provides for the construction of the second missile field at Fort Greely, which is to be completed in 2005. Ten (10) common silos, launch site components, and command launch equipment will be fielded in the second missile field. Additionally, IDC provides for the modification of four (4) common silos, launch site components, and command launch equipment at Vandenberg AFB in 2004.
- Ground Based Interceptors (GBI). The IDC consists of up to 20 GBI. A GBI consists of a booster and exo-atmospheric kill vehicle (EKV). The BMDS Test Bed provides up to ten (10) boosters and five (5) EKVs to field an initial five (5) GBIs at Fort Greely in 2004. The IDC initiative provides an additional ten (10) boosters and fifteen (15) EKVs to field up to four (4) GBIs at Vandenberg AFB, CA, in 2004, and up to eleven (11) additional GBIs at Fort Greely in 2005.
- IDTs. The IDC consists of five (5) IDTs at multiple sites. The BMDS Test Bed provides an IDT at Fort Greely, Shemya (AK), and VAFB in 2004 and an onboard IDT on the Sea-Based X-Band Radar to be fielded in 2005. The IDC initiative provides for an IDT at a NE Tier location in 2006. An additional IDT is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the BMDS flight test program.
- GMD Communications Network (GCN). The GCN consists of fiber optic land lines interconnected to satellite communications, both DSCS and MILSTAR. The CONUS Net connects Fort Greely and VAFB to the Joint National Integration Center (JNIC) at Shriever AFB as well as Hardware-in-the-Loop facilities in Huntsville. The BMDS Test Bed provides two (2) GMD Fire Control and Communications (GFC/C) Nodes located at Fort Greely and Shriever AFB. The IDC initiative provides a Communications Node Equipment (CNE) extension at a NE CONUS location. The Shriever

	Date
MDA Exhibit R-2A RDT&E Project Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

AFB and GCN are also connected to the Cheyenne Mountain Operations Center (CMOC) through remote workstations. The BMDS Test Bed provides satellite communications systems consisting of DSCS terminals at Fort Greely and Shemya and a MILSTAR terminal at Fort Greely. An additional DSCS terminal is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the BMDS flight test program.

- Sensors. The IDC consists of four (4) radars at multiple sites. The BMDS Test Bed provides for an upgraded Cobra Dane radar on Shemya, an Upgraded Early Warning Radar at Beale AFB in 2004 and a Sea-Based X-Band radar in 2005, and communications interface to the Aegis SPY-1 radars. The IDC initiative provides for an Upgraded Early Warning Radar at Fylingdales, United Kingdom in 2005. An additional prototype X-band radar, Ground-Based Radar Prototype (GBR-P), is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the flight test program.

Block 2004 provides a robust, flexible Test Bed to support the continuing development and testing of new and evolving BMDS technologies. This concurrent operations and testing capability supports a wide range of flight and ground test scenarios, multiple basing modes, and phenomenology. This multi-part Test Bed leverages initial GMD developmental hardware and software assets to validate the IDC operational concept and to provide increased realism for BMDS testing. The BMDS Test Bed will incorporate capabilities to evaluate: countermeasures; a wide range of sea and land-based radar sensors; more realistic test and evaluation through geographically dispersed assets and an operationally representative environment to check out component hardware and software integration, multiple target and interceptor test launch sites, flexible engagement scenarios, full spectrum of testing to demonstrate system performance including distributed, integrated ground testing; enhanced test infrastructure; and validation of construction, transportation, site activation, and logistics concepts supporting future fielding options.

The flow down of Ballistic Missile Defense System (BMDS) capability specifications resulting from Missile Defense National Team efforts in Command and Control, Battle Management, and Communications (C2BMC) and Systems Engineering & Integration will guide the integration of Targets and Countermeasures, Test and Evaluation, and Program-Wide Support into the BMD System, the BMDS C2BMC architecture, and the BMD Test Bed.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Ground-Based Interceptor (GBI)	101,194		
RDT&E Articles (Quantity)			

DISCUSSION. The Ground-Based Interceptor consists of an Exo-atmospheric Kill Vehicle (EKV) and a launch vehicle.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

FY 2003 Accomplishments:

- Continued acquisition of five (5) EKVs and ten (10) dual booster strategy boost vehicles for Fort Greely.
- Continued acquisition of six (6) common silos, launch site components for Fort Greely.
- Continued acquisition of command launch equipment and other support equipment for Fort Greely.

	FY 2003	FY 2004	FY 2005
Cobra Dane Upgrade	35,079		
RDT&E Articles (Quantity)			

DISCUSSION. Cobra Dane is an existing radar used to detect and track ballistic missile launches. This project upgrades both hardware and software to improve overall performance.

	Date	
MDA Exhibit R-2A RDT&E Project Justification	February 2004	
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment	
		_

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

FY 2003 Accomplishments:

- Initiated hardware installation.
- Completed initial software build.
- Completed facility modifications.

	FY 2003	FY 2004	FY 2005
GMD Fire Control & Communications	33,741		
RDT&E Articles (Quantity)	0		

DISCUSSION. The GMD Fire Control and Communications (GFC/C) component enables control and operation of the GMD Element as a single, integrated system. The communications component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communication System (IFICS).

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

FY 2003 Accomplishments:

- Completed IFICS fabrication.
- Completed Test Exerciser.
- Continued acquisition of IDTs for Shemya and Fort Greely.
- Initiated acquisition of relocatable IDC and Test Bed IDT for VAFB.
- Continued External System Interface (ESI) hardware procurement for AEGIS.
- Continued acquisition of GCN communication equipment and network for CONUS Ring and other IDC/Test Bed sites.
- Continued acquisition of GMD Fire Control and Communications Remote Work Stations.
- Continued acquisition of GMD Fire Control and Communications Node equipment.

	FY 2003	FY 2004	FY 2005
RDT&E Test Bed Construction	136,658		
RDT&E Articles (Quantity)			

DISCUSSION. This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data. Missile Defense System Test Bed Facilities, Phase III (Project Number MDA-504) and Missile Defense System Test Bed - Extended Test Range Facilities Phase III (Project Number DMA-506). Project Number MDA 506 was initially authorized in FY 2002 as the Missile Defense System Test Bed - Kodiak Facilities. The BMDS test range program has evolved to include other locations and this project title has been changed to "Missile Defense System Test Bed - Extended Test Range Facilities" to reflect this development. The 1391s have been updated to reflect the latest construction costs. RDT&E funding initially allocated to planning and design efforts have been redistributed to the construction efforts.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2003 Activities:

- Completed construction on major facilities (readiness & control station, entry control, missile assembly building, IDT, utility and water buildings and interceptor storage igloo).
- Initiated and completed construction on minor facilities including, EKV fuel storage buildings and security positions.
- Initiated and completed construction on Electronic Security System at Fort Greely.
- Continued construction of site access and interior site roads. Continued construction of the drainage system.
- Completed preparation of facilities for equipment installation at Fort Greely.
- Continued construction of Eareckson Air Station (Shemya) facilities.
- Initiated COBRA DANE facility modification.

	FY 2003	FY 2004	FY 2005
Element Engineering and Integration	31,074		
RDT&E Articles (Quantity)			

DISCUSSION. GMD Element Engineering provides engineering and analysis support for building and integration of the components of the 2004 IDC and Test Bed. Defines element-level capabilities, test requirements and objectives, and develops element-level assessments. Provides engineering, integration, and operations planning supporting an initial defensive operational capability. Continues the integration of component/element systems and sustains the planning effort for future fielding options. Continues to complement the BMDS Systems Engineering capability by providing detailed insight and analysis into component technical and design-specific issues.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

FY 2003 Accomplishments:

- Continued IDC and Test Bed planning, design, and scheduling.
- Continued planning for IDC and Test Bed sub-system checkout (SSCO) and system integration and checkout (SICO) at Fort Greely.
- Conducted Reagan Test Site SSCO.
- Continued acquisition of Embedded Test Node hardware.

	FY 2003	FY 2004	FY 2005
Element Test & Evaluation (T&E)	13,023		
RDT&E Articles (Quantity)			

DISCUSSION. GMD Test and Evaluation provides critical risk reduction and measurement of system performance for all GMD element components. It utilizes of a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance.

The Combined Test Force, under a single unified organization, integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, and minimizes the duplication of test resources and the time required to execute required testing.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2003 Accomplishments:

- Continued systems/elements test planning, design, and scheduling.
- Conducted IDC/Test Bed Integrated Ground Test.
- Continued planning for sub-system checkout (SSCO), system integration and checkout (SICO), and Systems Test Readiness Review (STRR).
- Initiated acquisition of Mission Control Centers (flight and ground).

	FY 2003	FY 2004	FY 2005
Site Activation	18,686		
RDT&E Articles (Quantity)			

DISCUSSION. This effort provides a broad range of site design and layout, facility requirements, and environmental management activities.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

FY 2003 Accomplishments:

- Continued to develop and verify site layout and facility requirements definition for IDC/Test Bed infrastructure.
 Continued Environmental, Safety and Health (ESH) documentation and compliance, NEPA Analyses.
- Completed coordination of facility acceptance and equipment installation.

C. Other Program Funding Summary

								To	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing

MDA	Exhibit R-2A I	RDT&E Proje	ct Justification			Date Febr	uary 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component		ent and Prot	otypes (ACD&		OMENCLATU 8 82C Ballistic		nse Midcours	se Defense Seg	gment
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0901598C Management Headquarters -									

146,099

492,988

0

0

12.958

145,112

527,541

0

12.850

151,727

539,210

0

0

13.158

154.583

568,365

0

13,476

Continuing

141.923

479,764

0

0

0

13.884

92,449

445,356

0

0

0

14.327

35.331

887,616

138,922

138,791

7,432

D. Acquisition Strategy

System Core

Research - MDA

PE 0603890C Ballistic Missile Defense

Defense System - TMD - EMD

Defense Acquisition - EMD

PE 0604861C Theater High-Altitude Area

PE 0605502C Small Business Innovative

PE 0901585C Pentagon Reservation

PE 0604865C Patriot PAC-3 Theater Missile

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has restructured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy is to build the initial GMD parts of the BMDS Test Bed NLT 4th Quarter FY 2004 as an early BMDS Test Bed and deliver capability block upgrades as early as practical. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while expanding operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

	MDAEL	21 4 D 4 DDT 6 E D					Date	2004		
APPROPRIATION/BUDGET AC		ibit R-3 RDT&E Proj	ject Cost Ana	lysis	R-1 NOMEN	ICI ATUDE	Februa	ry 2004		
RDT&E, DW/04 Advanced (Jovelenment and D	rototymos (A	CD&D)			scila Dofone	se Midcourse I	Dofonco Som	mont
· · · · · · · · · · · · · · · · · · ·		bevelopilient and 1	lototypes (A	CDQI)	0003662C	Damsuc Wil	SSHE Detens	se midcourse i	Jerense Beg	ment
I. Product Development Cost (\$ in	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Ground-Based Interceptor (GBI)	31							1		
1 ,		Boeing/								
GBI	SS/CPAF	Various	158,889	0		0		CONT.	158,889	CONT.
Cobra Dane Upgrade										
		Boeing/								
Cobra Dane Upgrades	SS/CPAF	Various	11,600	0		0		CONT.	11,600	CONT.
GMD Fire Control & Communications										
		Boeing/								
GFC/C	SS/CPAF	Various	51,190	0		0		CONT.	51,190	CONT.
Element Engineering and Integration										
		Boeing/								
Element Engr & Integration	SS/CPAF	Various	47,812	0		0		CONT.	47,812	CONT.
Element Test & Evaluation (T&E)										
		Boeing/								
Element T&E	SS/CPAF	Various	17,500	0		0		CONT.	17,500	CONT.
Subtotal Product Development			286,991	0		0		0	286991	
Remarks										
The Prime Contractor has the respons funding, which would change the esti	mates provided		MD program and	d allocate fund	ding according	to program pro	gress. This ma	y require the Prim	e Contractor to	reallocate
II. Support Costs Cost (\$ in Thou		Daufaumina	Total		FY 2004	1	FY 2005		T	Tonget
	Contract Method	Performing Activity &	Total PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Target Value of
Cost Categories:	& Type	Activity & Location	Cost	Cost	Date	Cost	Award Date	Cost to	Cost	Contract
RDT&E Test Bed Construction	& Type	Location	Cost	Cusi	Date	COSI	Date	Complete	Cost	Contract
RDT GET TEST DEG COUSTI UCTION		COE/								
Facility Construction	MIPR	AK	2,278,521	0		0		CONT.	2,278,521	CONT.

							Date			
	MDA Exhib	oit R-3 RDT&E Pro	oject Cost Ana	lysis			Februa	ry 2004		
APPROPRIATION/BUDGET	ACTIVITY				R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Advanced	l Component De	evelopment and I	Prototypes (A	CD&P)	0603882C	Ballistic Mi	ssile Defens	se Midcourse I	Defense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		COE/								
Kodiak Construction	MIPR	AK	2,800	0		0		CONT.	2,800	CONT
Site Activation										
		Boeing/								
Site Activation	SS/CPFF	AK	54,285	0		0		CONT.	54,285	CONT
Subtotal Support Costs			2,335,606	0		0		0	2335606	
III. Test and Evaluation Cost (§	in Thousands)									
III. Test and Evaluation Cost (S	S in Thousands) Contract	Performing	Total		FY 2004	1	FY 2005	1		Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Subtotal Test and Evaluation	CC Type	2000000			240	0050	2410	Complete		
Remarks										
IV. Management Services Cost		Darforming	Total		FY 2004	1	FY 2005			Torgot
	Contract Method	Performing Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Target Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Subtotal Management Services	а турс	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Remarks										
Project Total Cost			2,622,597	0		0			2,622,597	
Damarks					1		1	1	.,,-/	

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

MDA	Ext	nibit	R-4	Sche	edule						113							Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	ent a	and I	Prot	otyp	es (ACI	D&F	?)		1 NO 0388					ssile	Def	ense	e Mi	idco	urse	e Def	fens	e Se	gme	nt	
Fiscal Year		20	003			200	04			20	005			20	006			20	007			20	008			20	009	
	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
Test Bed																												
Begin Installing Interceptors							Р	\triangle																				
DSCS Terminal - EAS					⊿			Λ																				
Milstar Terminal - FGA					Δ																							
COBRA DANE Upgrades	Δ											Δ																
Completion of Initial Test Bed Capability								Δ																				Ш
Test Bed Upgrade Decision Point							4																					Ш
Drill 6 silo holes - Greely	Δ																											
GCN- CONUS Ring and Test Bed sites	Δ						₽																					
Initiate Test Bed Testing							Δ																					
GMD Battle Mgt Fire Ctrl & Comm Node - JNIC/CMOC	△						_△																					
GMD Fire Control & Comms Node - Greely					⊿		ho																					
IFICS - Greely	Δ						\triangle																					
GBI Components I&CO							Δ																					
IFICS - Eareckson, Air Station, AK	Δ						\land																					
Sea-Based Test XBR (SBX) Planning & Acquisition	Δ																											
Acquistion																												H
<u> </u>				<u> </u>														<u> </u>	<u> </u>		I		-			<u> </u>	<u> </u>	

MDA	Exh	ibit R-4	Sche	edul	e Pro	file											Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pment	and l	Pro	toty	pes ((AC	D&I	P)		1 NO 038 8					ssile	Def	ense	e Mi	idco	urse	Def	ense	e Seg	gmer	ıt	
Fiscal Year		2003			20	004			20	005			20	06			20	07			20	08			200)9	
	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
Early Warning Radars (EWR)								_												_							
Beale Upgrades (UEWR)	Δ								<u> </u>																		
Milestones																											
Decision Points (also see 3012)	Δ		<u> </u>						<u> </u>	拉																	
Software			,		•						,							,	,		,						
Install GBIs for 2nd Missile Field- Greely			-	_			ļΑ	<u> </u> 	<u> </u>	<u> </u>	<u> </u>	Δ															
Install GBIs - VAFB				Δ			Ħ																				_
Refurbish Silos - VAFB				Δ			₽																				
Conduct Missile Field 2 Site Activation - Greely				Δ			<u> </u>	<u> </u>	<u> </u>			Δ															
Install Upgrades to NE Tier EWR				Δ																							
Install #6 GBI- Greely				Δ																							
Install NE CONUS IDT				Δ							$\overline{\mathbb{A}}$																
		-	•		•	-	<u>-</u>		<u>-</u>	<u>-</u>	•		-					=	=		-			· · · · · · · ·	-	<u>-</u>	-

MDA F	xhibit R-4A Sch	edule Detail				Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY		cause Betain		R-1 NON	MENCLATURE	10014419 20	•	
RDT&E, DW/04 Advanced Component Dev	elopment and I	Prototypes (ACD	&P)	0603882	2C Ballistic Mis	sile Defense Mid	lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009
Test Bed								
Begin Installing Interceptors		3Q-4Q						
DSCS Terminal - EAS		1Q-4Q						
Milstar Terminal - FGA		1Q-4Q						
COBRA DANE Upgrades	1Q-4Q	1Q-4Q	1Q	-4Q				
Completion of Initial Test Bed Capability		4Q						
Test Bed Upgrade Decision Point		3Q-4Q	1Q	-3Q				
Drill 6 silo holes - Greely	1Q							
GCN- CONUS Ring and Test Bed sites	1Q-4Q	1Q-3Q						
Initiate Test Bed Testing		3Q						
GMD Battle Mgt Fire Ctrl & Comm Node -								
JNIC/CMOC	1Q-4Q	1Q-3Q						
GMD Fire Control & Comms Node - Greely		1Q-3Q						
IFICS - Greely	1Q-4Q	1Q-3Q						
GBI Components I&CO		3Q						
IFICS - Eareckson, Air Station, AK	1Q-4Q	1Q-3Q						
Sea-Based Test XBR (SBX) Planning & Acquisition	1Q-4Q	1Q-4Q	1Q	-4Q				
Early Warning Radars (EWR)								
Beale Upgrades (UEWR)	1Q-4Q	1Q-4Q	1Q	-4Q				
Milestones								
Decision Points (also see 3012)	1Q-4Q	1Q-4Q	1Q	-3Q				
Software								
Install GBIs for 2nd Missile Field- Greely		4Q	1Q	-4Q	1Q			
Install GBIs - VAFB		1Q-4Q						
Refurbish Silos - VAFB		1Q-4Q						
Conduct Missile Field 2 Site Activation - Greely		1Q-4Q	1Q	-4Q	1Q			
Install Upgrades to NE Tier EWR		1Q-4Q	1Q	-4Q				
Install #6 GBI- Greely		1Q-4Q						
Install NE CONUS IDT		1Q-4Q	10	-4Q				

Project: 3011 Block 2004 Test Bed

]	Date			
MDA Exhibit R-2A RDT&E Project Justification]	February 20	004		
APPROPRIATION/BUDGET ACTIVITY	H	R-1 N	OMENCLA'	ΓURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P)	06038	882C Ballis	tic Missile	Defense Mi	idcourse De	efense Segm	ent
COST (\$ in Thousands)	FY 20	003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability								
(IDC)		0	1,342,816	861,059	0	0	0	0
RDT&E Articles Qty		0	46	46	1	0	0	0

Note: This project was previously captured in Project 3011 in FY 2003.

A. Mission Description and Budget Item Justification

The Ground-Based Midcourse (GMD) segment of the Ballistic Missile Defense System (BMDS) consists of a series of block development efforts supporting the midcourse phase of the BMDS. The goals of the BMDS are (1) to complete, verify, and test the BMDS; (2) to place an operational capability on alert by September 30, 2004; (3) to enhance these fielded capabilities when appropriate; and (4) to perform concurrent operations and testing of a BMDS. The elements being developed and fielded in the Midcourse segment will comprise most of the critical components meeting these goals in the near-term.

GMD system capability is measured by Engagement Sequence Groups (ESG) which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the GMD system within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the GMD GBI against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems become available. Block 2004 includes six BMDS IDC ESGs (Engage on AEGIS, Launch on AEGIS, Engage on Cobra Dane, Engage on UEWRs (Beale and Fylingdales), and Engage on Sea-Based X-Band radar. These are the focus of IDC. Block 2006 incorporates two additional BMDS IDC ESGs (Engage on UEWR (Thule) and Launch on DSP/SBIRS). Block 2008 incorporates three additional BMDS IDC ESGs (Engage on Forward-Based X-Band Radar (FBX), Launch/Engage on EO/IR, and Launch/Engage on THAAD). ESGs are embedded into GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI surveillance testing, EKV and GMD fire control upgrades, and sea launched GBIs enable improvements to all ESGs and increase warfighter confidence.

The GMD Block 2004 effort provides for the fielding of the Initial Defensive Capability (IDC) directed by the President in December 2002. The IDC initiative provides missile fields and infrastructure, ground based interceptors, In-Flight Interceptor Communication System (IFICS) Data Terminals (IDT), communication networks, and sensors, as augmented by BMDS Test Bed developmental assets initiated under Project 3011. The GMD system employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies. Block 2004 will deliver and field the initial infrastructure, field the initial increment of interceptors, and provide for initial sustainment infrastructure for the IDC.

The Block 2004 is being completed in two phases. The first phase, the initial BMDS Test Bed with a limited defensive capability, is to be completed by September 30, 2004. The second phase provides an enhanced capability and additional assets that can also be utilized for the BMDS Test Bed. It is to be completed in December 2005. The IDC consists of:

- Missile Fields and Infrastructure. The IDC consists of two (2) missiles fields at Fort Greely, AK and operational silos at Vandenberg AFB, CA. The BMDS Test Bed provides for the construction of the first missile field with operating infrastructure at Fort Greely, which is to be completed in 2004. Six (6) common silos, launch site components, and command launch equipment will be fielded in the first missile field. The IDC initiative provides for the construction of the second missile field at Fort Greely, which is to be completed in 2005. Ten (10) common silos, launch site components, and command launch equipment will be fielded in the second missile field. Additionally, IDC provides for the modification of four (4) common silos, launch site components, and command launch equipment at Vandenberg AFB in 2004.
- Ground Based Interceptors (GBI). The IDC consists of up to 20 GBI. A GBI consists of a booster and exo-atmospheric kill vehicle (EKV). The BMDS Test Bed provides up to ten (10) boosters and five (5) EKVs to field an initial five (5) GBIs at Fort Greely in 2004. The IDC initiative provides an additional ten (10) boosters and fifteen (15) EKVs to field up to four (4) GBIs at Vandenberg AFB, CA, in 2004, and up to eleven (11) additional GBIs at Fort Greely in 2005.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

- IDTs. The IDC consists of five (5) IDTs at multiple sites. The BMDS Test Bed provides an IDT at Fort Greely, Shemya (AK), and VAFB in 2004 and an onboard IDT on the Sea-Based X-Band Radar to be fielded in 2005. The IDC initiative provides for an IDT at a NE Tier location in 2006. An additional IDT is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the BMDS flight test program.
- GMD Communications Network (GCN). The GCN consists of fiber optic land lines interconnected to satellite communications, both DSCS and MILSTAR. The CONUS Net connects Fort Greely and VAFB to the Joint National Integration Center (JNIC) at Shriever AFB as well as Hardware-in-the-Loop facilities in Huntsville. The BMDS Test Bed provides two (2) GMD Fire Control and Communications (GFC/C) Nodes located at Fort Greely and Shriever AFB. The IDC initiative provides a Communications Node Equipment (CNE) extension at a NE CONUS location. The Shriever AFB and GCN are also connected to the Cheyenne Mountain Operations Center (CMOC) through remote workstations. The BMDS Test Bed provides satellite communications systems consisting of DSCS terminals at Fort Greely and Shemya and a MILSTAR terminal at Fort Greely. An additional DSCS terminal is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the BMDS flight test program.
- All components are integrated into the BMDS C2BMC Element in order to provide the deliberate planning tools and crisis action tools to evolve courses of action based upon a common view of the threat, available global resources, and warning order objectives.
- Sensors. The IDC consists of four (4) radars at multiple sites. The BMDS Test Bed provides for an upgraded Cobra Dane radar on Shemya, an Upgraded Early Warning Radar at Beale AFB in 2004 and a Sea-Based X-Band radar in 2005, and communications interface to the Aegis SPY-1 radars. The IDC initiative provides for an Upgraded Early Warning Radar at Fylingdales, United Kingdom in 2005. An additional prototype X-band radar, Ground-Based Radar Prototype (GBR-P), is located at the Reagan Test Site (RTS) as part of the BMDS Test Bed and will continue to support the flight test program.

Block 2004 provides a robust, flexible Test Bed to support the continuing development and testing of new and evolving BMDS technologies. This concurrent operations and testing capability supports a wide range of flight and ground test scenarios, multiple basing modes, and phenomenology. This multi-part Test Bed leverages initial GMD developmental hardware and software assets to validate the IDC operational concept and to provide increased realism for BMDS testing. The BMDS Test Bed will incorporate capabilities to evaluate: countermeasures; a wide range of sea and land-based radar sensors; more realistic test and evaluation through geographically dispersed assets and an operationally representative environment to check out component hardware and software integration, multiple target and interceptor test launch sites, flexible engagement scenarios, full spectrum of testing to demonstrate system performance including distributed, integrated ground testing; enhanced test infrastructure; and validation of construction, transportation, site activation, and logistics concepts supporting future fielding options.

The flow down of Ballistic Missile Defense System (BMDS) capability specifications resulting from Missile Defense National Team efforts in Command and Control, Battle Management, and Communications (C2BMC) and Systems Engineering & Integration will guide the integration of Targets and Countermeasures, Test and Evaluation, and Program-Wide Support into the BMD System, the BMDS C2BMC architecture, and the BMD Test Bed.

B. Accomplishments/Planned Program

Diffeedinghishmenes/Fidimed Flogram			
	FY 2003	FY 2004	FY 2005
Ground-Based Interceptor (GBI)		219,202	5,342
RDT&E Articles (Quantity)		27	0

DISCUSSION. The Ground-Based Interceptor consists of an Exo-atmospheric Kill Vehicle (EKV) and a Boost Vehicle.

FY 2003 Accomplishments:(Funded in Project 3011)

- Continued acquisition of five (5) interceptors with ten (10) dual booster strategy boost vehicles for Fort Greely.
- Continued acquisition of six (6) common silos, launch site components for Fort Greely.
- Continued acquisition of command launch equipment and other support equipment for Fort Greely.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of five (5) EKVs, ten (10) dual booster strategy boost vehicles, (6) six common silos and (6) six sets of associated command launch support equipment was initiated in FY 2002 for delivery in FY 2004.

- Completes acquisition of five (5) interceptors for Fort Greely.
- Completes acquisition of six (6) common silos, launch site components for Fort Greely.
- Completes acquisition of command launch equipment and other support equipment for Fort Greely.
- Completes assembly, integration, and installation in silos of 5 Ground-Based Interceptors at Fort Greely.
- Initiates silo/interceptor/launch systems ground testing, system level simulation, and verification, validation, and accreditation activities.
- Continues to incorporate the products of the Dual Booster Strategy.

FY 2005 Planned Accomplishments:

- Continues silo/interceptor/launch systems ground testing, system level simulation, and verification, validation, and accreditation activities.
- Continues to incorporate the products of the Dual Booster Strategy.

	FY 2003	FY 2004	FY 2005
Cobra Dane Upgrade		34,812	0
RDT&E Articles (Quantity)		1	0

DISCUSSION. Cobra Dane is an existing radar at Shemya, AK used to detect and track ballistic missile launches. This project upgrades both hardware and software to improve overall performance, execute BMDS tasking and connect to the BMDS.

FY 2003 Accomplishments: (Funded in Project 3011)

- Initiated hardware installation.
- Completed initial software upgrade build.
- Completed facility modification.

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of hardware and software upgrades to the Cobra Dane Radar was initiated in FY 2002 for delivery in FY 2004.

- Completes follow-on software upgrade build.
- Completes installation and initial checkout.
- Completes final checkout (Initial COBRA DANE upgrade complete).

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

			Date		
MDA Exhibit R-2A RDT&E Project Just	ification		February 2004	ı	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCI	ATURE		
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		0603882C Bal	listic Missile Defense Midc	ourse Defense Segmen	ıt
	FY	2003	FY 2004	FY 2005	
Beale Early Warning Radar Upgrade			30,988	1	19,597
RDT&E Articles (Quantity)]		

DISCUSSION.

Note: This effort was initiated under Project 3012 in FY 2002 and 2003.

The Beale Early Warning Radar (EWR) is an existing large, fixed, phased-array surveillance radar used to detect, track, and count individual targets early in their trajectory. The planned Beale upgrades provide the capability of not only detecting, but also providing precise tracking early enough to significantly expand the battlespace for the ground based interceptors. The Beale upgrades include both hardware and software enhancements to improve overall performance, execute BMDS functionally and, connect to the BMDS.

FY 2003 Accomplishments:(Funded in Project 3012)

- Continued flight and ground test support.
- Completed prototype string hardware.
- Completed Beale facility design.
- Completed Beale facility modification.
- Completed acquisition of Beale receiver-exciter and processors.

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of various upgrades to the Beale EWR was initiated in FY 2002 for delivery in FY 2004.

- Continues Flight and Ground Test support.
- Continues development and fielding of UEWR Software Builds.
- Completes Beale Integration and Test.
- Completes Beale Sub-system Checkout.
- Completes delivery of Beale Upgrade initial capability.
- Initiates ITWAA integration and certification.

FY 2005 Planned Accomplishments:

- Continues Flight and Ground Test support.
- Continues development and fielding of UEWR Software Builds.
- Completes ITWAA integration and certification

	FY 2003	FY 2004	FY 2005
GMD Fire Control & Communications		45,763	7,239
RDT&E Articles (Quantity)		8	1

DISCUSSION. The GMD Fire Control and Communications (GFC/C) component enables integrated control and operation of the GMD Element within the BMDS. The communications component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communication System (IFICS). The GCN includes fiber optic landlines connected to satellite

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

communications, both DSCS and Milstar. The DSCS terminals will be acquired and installed at Fort Greely and Shemya. Based on congressional directions, completion of the installation of the two DSCS terminals at Shemya has been accelerated into FY04 as a risk reduction effort for the IDC. The GCN also consists of an existing DSCS terminal at RTS supporting flight test requirements. A Milstar terminal will be installed at Fort Greely.

FY 2003 Accomplishments: (Funded in Project 3011)

- Completed IFICS fabrication.
- Completed Test Exerciser.
- Continued acquisition of IDTs for Shemya and Fort Greely.
- Initiated acquisition of relocatable IDT at VAFB.
- Continued External System Interface (ESI) hardware procurement for AEGIS.
- Continued acquisition of GCN communication equipment and network for CONUS Ring and other Test Bed sites.
- Continued acquisition of GMD Fire Control and Communications Remote Work Stations.
- Continued acquisition of GMD Fire Control and Communications Node equipment.
- Initiates acquisition and installation of a Milstar terminal at Fort Greely.

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of IFICS Data Terminals (IDT), one (1) for Shemya and one (1) for Greely, was initiated in FY 2002 for delivery in FY 2004. Acquisition of a third IFICS Data Terminal (IDT) was initiated for Vandenberg AFB in FY 2003 for delivery in FY 2004. An additional IDT is acquired for the SBX and is included in that accomplishment narrative. Acquisition of GMD Fire Control and Communications Nodes for Fort Greely and Shriever AFB with remote operator workstations at Cheyenne Mountain Operations Center (CMOC) was initiated in FY 2002 for delivery in FY 2004. Acquisition of an External System Interface (initially for the Aegis SPY-1 radar) was initiated in FY 2003 for delivery in FY 2004. Acquisition of two DSCS terminals for Shemya and one (1) for Fort Greely, was initiated in FY 2003 for delivery in FY 2004.

- Completes installation and checkout at Fort Greely.
- Completes acquisition of IDTs for Shemya and Fort Greely.
- Completes initial IDT installation and checkout, Shemya and Fort Greely.
- Completes acquisition of relocatable IDT at VAFB.
- Completes External System Interface (ESI) acquisition, installation, and checkout for AEGIS.
- Completes acquisition of GCN communication equipment and network for CONUS Ring.
- Completes acquisition of GMD Fire Control and Communications Remote Work Stations.
- Completes acquisition of GMD Fire Control and Communications Node equipment.
- Acquires and completes the installation of the two DSCS terminals at Shemya (per congressional direction) and one terminal at Fort Greely.
- Continues installation of a Milstar terminal at Fort Greely.

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of a Milstar terminal for Fort Greely, was initiated in FY 2003 for delivery in FY 2005.

- Completes installation of a Milstar terminal at Fort Greely.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

			Date			
MDA Exhibit R-2A RDT&E Project Justification			Febru	ary 2004		
APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE		ATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes	s (ACD&P)	0603882C Ball	listic Missile Defe	nse Midcou	rse Defense Segment	
	FY	7 2003	FY 2004		FY 2005	
RDT&E Test Bed Construction				38,135		0
RDT&E Articles (Quantity)						

DISCUSSION. This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data. Missile Defense System Test Bed Facilities, Phase III (Project Number MDA-504) and Missile Defense System Test Bed - Extended Test Range Facilities Phase III (Project Number DMA-506). Project Number MDA 506 was initially authorized in FY 2002 as the Missile Defense System Test Bed - Kodiak Facilities. The BMDS test range program has evolved to include other locations and this project title has been changed to "Missile Defense System Test Bed - Extended Test Range Facilities" to reflect this development. The 1391s have been updated to reflect the latest construction costs. RDT&E funding initially allocated to planning and design efforts have been redistributed to the construction efforts.

FY 2003 Activities:(Funded in Project 3011)

- Completed construction on major facilities (readiness & control station, entry control, missile assembly building, IDT, utility and water buildings and interceptor storage igloo).
- Initiated and completed construction on minor facilities including, EKV fuel storage buildings and security positions.
- Initiated and completed construction on Electronic Security System at Fort Greely.
- Continued construction of site access and interior site roads. Continued construction of the drainage system.
- Completed preparation of facilities for equipment installation at Fort Greely.
- Continued construction of Eareckson Air Station (Shemya) facilities.
- Initiated COBRA DANE facility modification.

FY 2004 Planned Activities:

- Completes equipment installation for missile field, IDTs and DSCS at Fort Greely.
- Completes construction on site access and interior site roads and drainage system.
- Completes construction on facilities (IDT, COBRA DANE, DSCS, and Test Support Facilities) at Eareckson Air Station (Shemya).

	FY 2003	FY 2004	FY 2005
Sea-Based X-Band Radar (SBX)		370,014	168,465
RDT&E Articles (Quantity)			2

DISCUSSION.

Note: This effort was initiated under Project 3012 in FY 2002 and 2003. The SBX development was initiated in FY 2002. This acquisition is necessary to ensure that a Test XBR is ready to be integrated into the Ballistic Missile Defense System Test Bed in the fourth quarter of FY 2005. The SBX provides high-resolution tracking and discrimination data to the GMD fire control, thereby significantly enhancing BMDS performance.

The Sea-Based Test X-Band Radar (SBX) is a Midcourse Defense sensor that will support the IDC and Integrated Flight Tests and will provide the capability of exercising all GMD sensor functions (weapon task plan, in-flight target update, target object map and kill assessment). The SBX will include an IFICS Data Terminal. The SBX will be a relocateable, phased-array (half populated) radar. The ability of the SBX to be relocated enables full use of extended test range capabilities for all land and air target launches, provides more realistic siting, and facilitates operationally realistic testing. The SBX will be mounted on a modified, sea-going, semi-submersible platform similar to the oil drilling platforms currently in use worldwide.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2003 Accomplishments: (Funded in Project 3012)

- Initiated acquisition of long-lead items associated with the radar.
- Initiated acquisition of main radar structure.
- Initiated acquisition of radar electronic components.
- Initiated construction of operations and support structures and facilities for platform.
- Initiated acquisition of operations and support equipment for platform.

FY 2004 Planned Accomplishments:

- Completes fabrication of main radar structure.
- Completes installation of radar structure.
- Completes acquisition and initiates installation of radar electronic components.
- Completes fabrication of operations and support structures and facilities for platform.
- Continues acquisition of operations and support equipment for platform.
- Initiates installation of radar electronic components.

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of one (1) Sea-Based Test X-Band Radar (SBX) was initiated in FY 2002 for delivery in FY 2005. Acquisition of one (1) IFICS Data Terminal (IDT), fixed to the SBX platform, was initiated in FY 2002 for delivery in FY 2005.

- Completes installation of radar electronic components.
- Completes acquisition of operations and support equipment for platform.
- Completes integration and checkout of Sea-based X-band Radar.

	FY 2003	FY 2004	FY 2005
Initial Defensive Capability (Ground-Based Interceptors (GBI))		340,663	469,901
RDT&E Articles (Quantity)		9	42

DISCUSSION. The Ground-Based Interceptor consists of an Exo-atmospheric Kill Vehicle (EKV) and a Booster Vehicle. These Interceptors represent an enhancement to the basic Block 2004 of five (5) Ground Based Interceptor (GBI) Test Bed capability by adding: Eleven (11) GBIs at Fort Greely by FY 2005, and four (4) GBIs at Vandenberg AFB (VAFB) in FY 2004. This effort will provide the United States with a fielded Initial Defensive Capability (IDC) against ballistic missile threats.

FY 2004 Planned Accomplishments:

RDT&E Articles: Acquisition of 5 EKVs is initiated in FY 2004 for delivery in FY 2004. Refurbishment of 2 silos with 2 sets of command launch equipment at VAFB was initiated in FY 2002 for delivery in FY 2004.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

- Acquires and installs five EKVs (4 EKVs for VAFB and 1 for Fort Greely; boosters previously acquired).
- Initiates acquisition of up to ten (10) EKVs for Fort Greely.
- Initiates acquisition of up to ten (10) Boosters for Fort Greely.
- Initiates acquisition of additional common silos for Fort Greely.
- Completes refurbishment of two (2) silos at VAFB.

FY 2005 Planned Accomplishments:

RDT&E Articles: Acquisition of up to 10 EKVs and up to 10 Boosters is initiated in FY 2004 for delivery in FY 2005. Acquisition of 10 silos and 10 sets of command launch equipment was initiated in FY 2004 for delivery in FY 2005. Refurbishment of 1 silo with 1 set of command launch equipment at VAFB was initiated in FY 2004 for delivery in FY 2005.

- Completes acquisition and installation of up to 10 Boosters for Fort Greely.
- Completes acquisition and installation of up to 10 EKVs for Fort Greely.
- Completes acquisition and installation of common silos for Fort Greely.
- Completes refurbishment of one (1) silo at VAFB.

	FY 2003	FY 2004	FY 2005
Initial Defensive Capability (UEWR & IDT)		65,286	42,216
RDT&E Articles (Quantity)		0	1

DISCUSSION: The Fylingdales UEWR provides GMD fire control access and increased early warning capability for potential threat objects launched from north and east of CONUS. Processor upgrades, along with the associated GMD Communications Network (GCN) connectivity, are planned for full implementation of the Fylingdales UEWR by FY 2005. The IDT provides the capability for midcourse communications with eastbound interceptors from existing Test Bed assets. The IDT shall be located in accordance with a siting analysis to provide favorable communications with launched interceptors. The NE Tier IDT is deferred from FY05 to FY06 to fund critical IDC GBI requirements.

FY 2004 Planned Accomplishments:

- Initiates acquisition of UEWR hardware.
- Initiates installation of UEWR hardware.
- Begins installation of UEWR software.
- Initiates IT/WAA integration and certification for the UEWR.

FY 2005 Planned Accomplishments:

- Completes acquisition of UEWR hardware.
- Completes installation of UEWR hardware.
- Completes installation of UEWR software.
- Completes Integrated Tactical Warning and Attack Assessment and certification for the UEWR.
- Initiates acquisition of IDT.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

			Date	
MDA Exhibit R-2A RDT&E Pro	oject Justification		February 2004	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLAT	ΓURE	
RDT&E, DW/04 Advanced Component Development and Pr	rototypes (ACD&P)	0603882C Ballis	tic Missile Defense Midcourse l	Defense Segment
	FY	2003	FY 2004	FY 2005
Initial Defensive Capability (RDT&E Construction)			116,437	134,59
RDT&E Articles (Quantity)				
DISCUSSION This CMD DDT & Construction request is further justified in	the ecommony in a DD 1201	Errhibita DDT %E Cor	atmention Data. The 1201s have been un	datad to maffact the latest

DISCUSSION. This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data. The 1391s have been updated to reflect the latest construction costs for the Initial Defensive Capability.

FY 2004 Planned Accomplishments:

- Initiates construction of 10 common silos and supporting facilities at Fort Greely.
- Initiates and completes site facility designs for IDT [NE Tier, CONUS] and UEWR [Fylingdales, UK].
- Initiates facilities construction for UEWR [Fylingdales, UK].

FY 2005 Planned Accomplishments:

- Completes construction of 10 common silos and supporting facilities at Fort Greely.
- Completes facilities construction for UEWR [Fylingdales, UK].
- Initiates facilities construction for IDT [NE Tier, CONUS]

	FY 2003	FY 2004	FY 2005
Element Engineering and Integration		29,786	10,624
RDT&E Articles (Quantity)			

DISCUSSION. GMD Element Engineering provides engineering and analysis support for building and integration of the components of the 2004 Test Bed. Defines element-level capabilities, test requirements and objectives, and develops element-level assessments. Provides engineering, integration, and operations planning supporting the Initial Defensive Capability. Continues the integration of component/element systems and sustains the planning effort for future fielding options. Continues to support and complement the BMDS Systems Engineering capability by providing detailed insight and analysis into component technical and design-specific issues.

FY 2003 Accomplishments: (Funded in Project 3011)

- Continued Test Bed planning, design, and scheduling.
- Continued planning for Test Bed sub-system checkout (SSCO) and system installation and checkout (SICO) at Fort Greely.
- Conducted Reagan Test Site SSCO.
- Continued acquisition of Embedded Test Node hardware.

FY 2004 Planned Accomplishments:

- Conducts sub-system checkout (SSCO) assessments for Shemya (Cobra Dane), Boulder, Buckley, Vandenberg Air Force Base (VAFB), ESI (Aegis Weapon System Radar), Beale UEWR, Fort Greely Interceptor site, and Test IDT capability.
- Conducts Test Bed systems integration and checkouts (SICO).
- Completes acquisition and installation of Embedded Test Node hardware.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

	1112	
MDA Exhibit R-2A RDT&E Project Justification		Date February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missil	e Defense Midcourse Defense Segment
FY 2005 Planned Accomplishments: - Completes system integration test and checkout.		

	FY 2003	FY 2004	FY 2005
Element Test & Evaluation (T&E)		14,636	3,078
RDT&E Articles (Quantity)			

DISCUSSION. GMD Test and Evaluation provides critical risk reduction and measurement of system performance for all GMD element components. It utilizes a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance. The GMD Combined Test Force, under a single unified organization, integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, and minimizes the duplication of test resources and the time required to execute required testing.

FY 2003 Accomplishments:(Funded in Project 3011)

- Continued systems/elements test planning, design, and scheduling.
- Conducted Test Bed Integrated Ground Test.
- Continued planning for sub-system checkout (SSCO), system installation and checkout (SICO), and Systems Test Readiness Review (STRR).
- Initiated acquisition of Mission Control Centers (flight and ground).

FY 2004 Planned Accomplishments:

- Supports SSCO assessments for Shemya (Cobra Dane), Boulder, Buckley, Vandenberg Air Force Base (VAFB), ESI (Aegis Weapon System Radar), Beale UEWR, Fort Greely interceptor site, and Test Bed IDT capability.
- Conducts Test Bed Integrated Ground Test.
- Supports systems check-outs (SCO) and test readiness reviews.
- Completes acquisition of Mission Control Centers (flight and ground).

FY 2005 Planned Accomplishments:

- Completes Systems Test Readiness Review documentation.

	FY 2003	FY 2004	FY 2005
Community Impacts		6,585	
RDT&E Articles (Quantity)			

DISCUSSION.

FY 2004 Planned Accomplishments:

- Completes community impact mitigation efforts including education programs, and social service grants.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

				Date	
MDA Exhibit R-2A RDT&E Project Justi	ification			February 2004	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCL	ATURE		
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603882C Bal	listic Missile	e Defense Midcou	rrse Defense Segment
	FY	2003	F	Y 2004	FY 2005
Site Activation				30,509	
RDT&E Articles (Quantity)					

DISCUSSION. This effort provides a broad range of site design and layout, facility requirements, and environmental management activities. Per congressional direction, additional funding has been provided for physical security upgrades, network defense, information assurance, and organizational security at Fort Greely.

FY 2003 Accomplishments:(Funded in Project 3011)

- Continued to develop and verify site layout and facility requirements definition for IDC (including Test Bed) infrastructure.
- Continued Environmental, Safety and Health (ESH) documentation and compliance, NEPA Analyses.
- Continued facility acceptance and equipment installation coordination.

FY 2004 Planned Accomplishments:

- Completes development and verification of site layout and facility requirements definition for the IDC (including Test Bed) infrastructure.
- Continues Environmental, Safety and Health (ESH) documentation and compliance, NEPA Analyses.
- Completes facility acceptance and equipment installation coordination.
- Initiate and complete security upgrades at Fort Greely.

C. Other Program Funding Summary

C. Other Frogram Funding Summary									
								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

						Date					
MDA	Exhibit R-2A I	RDT&E Proje	ct Justification		February 2004						
APPROPRIATION/BUDGET ACTIVITY			R-1 N	OMENCLATU	RE						
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603882C Ballistic Missile Defense Midcourse Defense Segment									gment		
								То	Total		
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost		
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing		
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing		
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing		
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing		
PE 0604861C Theater High-Altitude Area											

0

0

0

13.884

0

0

0

12.958

0

0

0

12,850

0

0

0

13.158

D. Acquisition Strategy

Research - MDA

Defense System - TMD - EMD

Defense Acquisition - EMD

PE 0604865C Patriot PAC-3 Theater Missile

PE 0605502C Small Business Innovative

PE 0901585C Pentagon Reservation

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has restructured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy is to build the initial GMD parts of the BMDS Test Bed NLT 4th Quarter FY 2004 as an early BMDS Test Bed and deliver capability block upgrades as early as practical. In addition, the President has directed that the Test Bed be enhanced with additional interceptors and two sensor upgrades. These enhancements will be folded into ongoing development and implementation of the core Test Bed, and take advantage of all development up to this time. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

887,616

138,922

138,791

7,432

0

0

0

14,327

26 of 167

UNCLASSIFIED

Continuing

Continuing

Continuing

Continuing

0

13,476

Continuing

Continuing

Continuing

Continuing

	MDA Fybi	bit R-3 RDT&E Proj	iact Cast Ana	lveie			Date Februa i	ry 2004		
APPROPRIATION/BUDGET A	CTIVITY				R-1 NOMEN		-			
RDT&E, DW/04 Advanced	Component D	Development and P	rototypes (A	CD&P)	0603882C I	Ballistic Mis	sile Defense	e Midcourse D	efense Segi	ment
I. Product Development Cost (\$ i						T.				
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Ground-Based Interceptor (GBI)								-		
Ground-Based Interceptor (GBI)	SS/CPAF	Boeing/ Various	0	219,202	1Q	5,342	2Q	CONT.	224,544	CONT
Cobra Dane Upgrade										
Cobra Dane Upgrade	SS/CPAF	Boeing/ Various	0	34,812	1Q	0		CONT.	34,812	CONT
Beale Early Warning Radar Upgrade										
Beale UEWR	SS/CPAF	Boeing/ Various	0	30,988	1Q	19,597	1/2Q	CONT.	50,585	CONT
GMD Fire Control & Communications										
GMD Battle Management (Fire Control) & Comms	SS/CPAF	Boeing/ Various	0	45,763	1Q	7,239	1/2Q	CONT.	53,002	CONT
Sea-Based X-Band Radar (SBX)										
Sea-Based X-Band Radar (SBX)	SS/CPAF	Boeing/ Various	0	370,014	1Q	168,465	1Q	CONT.	538,479	CONT
Initial Defensive Capability (Ground-Based Interceptors (GBI))										
IDC (GBI)	SS/CPAF	Boeing/Various		340,663	1Q	469,901	1/2Q	CONT.	810,564	CONT
Initial Defensive Capability (UEWR & IDT)										
IDC (UEWR & IDT)	SS/CPAF	Boeing/ Various	0	65,286	1Q	42,216	1/2Q	CONT.	107,502	CONT
Element Engineering and Integration										
Element Engr & Integration	SS/CPAF	Boeing/ Various	0	29,786	1Q	10,624	1/2Q	CONT.	40,410	CONT

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

27 of 167 UNCLASSIFIED

	MDA Fyh	ibit R-3 RDT&F Proi	ect Cost Ana	lveie			Date Februa	ry 2004		
	MDA Exhibit R-3 RDT&E Project Cost Analysis PRIATION/BUDGET ACTIVITY E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment				ment	
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Element Test & Evaluation (T&E)										
Element T&E Subtotal Product Development	SS/CPAF	Boeing/ Various	0	14,636 1,151,150	1Q	3,078 726,462	1/2Q	CONT.	17,714 1877612	CONT.

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

II. Support Costs Cost (\$ in Thousands)

11. Support Costs Cost (\$ in Thou	isanus)									
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
RDT&E Test Bed Construction										
		COE/								
Construction	MIPR	AK	0	38,135	1Q	0		CONT.	38,135	CONT.
Initial Defensive Capability (RDT&E Construction)										
Construction	MIPR	COE/AK/CA	0	116,437	1Q	134,597	1Q	CONT.	251,034	CONT.
Community Impacts										
		Various/								
Community Impacts	C/CPAF	AK	0	6,585	1Q	0		CONT.	6,585	CONT.
Site Activation										
		Boeing/								
Site Activation	SS/CPFF	Various	0	30,509	1Q	0		CONT.	30,509	CONT.
Subtotal Support Costs			0	191,666		134,597		0	326263	

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

	MDA Exhil	bit R-3 RDT&E Pro	ject Cost Ana	llysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET AC	CTIVITY				R-1 NOMEN	ICLATURE				
RDT&E, DW/04 Advanced (0603882C	Ballistic Mis	sile Defens	e Midcourse l	Defense Seg	ment				
III. Test and Evaluation Cost (\$ i	n Thousands)									
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Subtotal Test and Evaluation										
Remarks										
IV. Management Services Cost (\$	in Thousands)									
3	Contract	Performing	Total		FY 2004		FY 2005			Target
'	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Subtotal Management Services										
Remarks										
Project Total Cost			0	1,342,816		861,059			2,203,875	
Remarks										

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

29 of 167

UNCLASSIFIED

MD	A Exh	ibit R	-4 Scł	iedu	le Pro	ofile										Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D	evelo	nmen	t and	Pro	totv	nes (A	CD	&P)		-1 NO					ssile	Def	enso	e Mi	dco	urse	Def	fens	e See	omei	nt	
, and the second of the second											0_0	Dui	115010	7 1 7 1 1	55110					ui st			بالمان	511101		
Fiscal Year		2003 2004 2005								20	006			20	07			20	800		2009					
	1	2	3 4	1	2	3	4	1 2	2 3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Test Bed	_																									
Begin Installing Interceptors						14	Δ																			
DSCS Terminal - EAS				Δ			Δ																			
Milstar Terminal - FGA				Δ	igg	$\perp \perp$	Δ																			
COBRA DANE Upgrades	△			+		+	<u> </u>	<u> </u>		╬																
Completion of Initial Test Bed Capability							Δ																			
Test Bed Upgrade Decision Point						14	4	+	\perp	7																
Drill 6 silo holes - Greely	Δ																									
GCN- CONUS Ring and Test Bed sites	Δ			<u> </u>	<u> </u>	\perp																				
Initiate Test Bed Testing						Δ																				
GMD Battle Mgt Fire Ctrl & Comm Node -	Δ_					\perp_{\wedge}																				
JNIC/CMOC	+	\vdash	-	_			-	+	+		1													\longrightarrow	\dashv	-
GMD Fire Control & Comms Node - Greely	Δ			+-	Ŧ				+					-								_			_	
IFICS - Greely		Ħ	Ŧ	Ŧ		+ - +	-	-	-		-			-								_			-	
GBI Components I&CO	+	\vdash		╂				+	+	-	-													\longrightarrow	\dashv	
IFICS - Eareckson, Air Station, AK Sea-Based Test XBR (SBX) Planning &	Δ-	Ħ	Ŧ	Ė		$\overrightarrow{+}$	-	-	-		-		-	-								_			-	
Acquisition	△			$\frac{1}{1}$		$\frac{1}{1}$	$\frac{1}{1}$	+	+	┿																
			•	•		-	•		•						-											

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

MDA	Exh	ibit R	2-4 S	Sche	dule	Prof	file											Date Feb	rua	ry 2	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	evelo	pmen	ıt aı	nd F	roto	otyp	es (A	ACI	D&I	?)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																	
Fiscal Year	2003 2004 2005			005 2006				2007 2008				08	2009															
	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
Early Warning Radars (EWR)																												
Beale Upgrades (UEWR)	Δ	4	4									V																
Milestones																												
Decision Points (also see 3012)		_	1								$\vdash \!$																	
Software																												
Install GBIs - VAFB					Ā			Δ																				
Install GBIs for 2nd Missile Field- Greely								Δ					A															
Refurbish Silos - VAFB					<u>4</u>			△																				
Conduct Missile Field 2 Site Activation - Greely					4								Δ															
Install Upgrades to NE Tier EWR					4	[Ţ																
Install #6 GBI- Greely					4			\wedge																				
Install NE CONUS IDT									Δ							A												
																											\Box	
																											\Box	
1																											—	

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

MDA E	xhibit R-4A Sch	edule Detail				Date February 20	04			
APPROPRIATION/BUDGET ACTIVITY					MENCLATURE					
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603882C Ballistic Missile Defense Midcourse Defense Segment										
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009		
Test Bed										
Begin Installing Interceptors		3Q-4Q								
DSCS Terminal - EAS		1Q-4Q								
Milstar Terminal - FGA		1Q-4Q								
COBRA DANE Upgrades	1Q-4Q	1Q-4Q	1Q	-4Q						
Completion of Initial Test Bed Capability		4Q								
Test Bed Upgrade Decision Point		3Q-4Q	1Q	-3Q						
Drill 6 silo holes - Greely	1Q									
GCN- CONUS Ring and Test Bed sites	1Q-4Q	1Q-3Q								
Initiate Test Bed Testing	<u> </u>	3Q								
GMD Battle Mgt Fire Ctrl & Comm Node -										
JNIC/CMOC	1Q-4Q	1Q-3Q								
GMD Fire Control & Comms Node - Greely		1Q-3Q								
IFICS - Greely	1Q-4Q	1Q-3Q								
GBI Components I&CO		3Q								
IFICS - Eareckson, Air Station, AK	1Q-4Q	1Q-3Q								
Sea-Based Test XBR (SBX) Planning & Acquisition	1Q-4Q	1Q-4Q	1Q	-4Q						
Early Warning Radars (EWR)										
Beale Upgrades (UEWR)	1Q-4Q	1Q-4Q	1Q	-4Q						
Milestones	<u> </u>	-								
Decision Points (also see 3012)	1Q-4Q	1Q-4Q	1Q	-3Q						
Software	<u> </u>			-						
Install GBIs - VAFB		1Q-4Q								
Install GBIs for 2nd Missile Field- Greely		4Q	1Q	-4Q	1Q					
Refurbish Silos - VAFB		1Q-4Q								
Conduct Missile Field 2 Site Activation - Greely		1Q-4Q	10	-4Q	1Q					
Install Upgrades to NE Tier EWR		1Q-4Q	-	-4Q						
Install #6 GBI- Greely		1Q-4Q		. `						
Install NE CONUS IDT			10	-4Q	1Q-4Q					

Project: 0708 Ground-Based Midcourse Defense (GMD) Block 2004 Test Bed/Initial Defensive Capability (IDC)

32 of 167 UNCLASSIFIED

MDA Exhibit R-2A RDT&E Project Justification		Date February 2	004				
APPROPRIATION/BUDGET ACTIVITY	R-	-1 NOMENCLA	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	P) 00	603882C Ballis	tic Missile	Defense Mi	idcourse De	efense Segn	nent
COST (\$ in Thousands)	FY 200	03 FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3012 GMD Dev & Test Bed Upgrades	2,121,5	573 0	0	0	0	0	0
RDT&E Articles Qty		10 0	0	0	0	0	0

Note: This Project has been restructured beginning in FY 2004 to Project 0808. This restructure represents MDA's block development and management framework for the BMDS.

A. Mission Description and Budget Item Justification

The Ground-Based Midcourse (GMD) segment of the Ballistic Missile Defense System (BMDS) is a key component of the Initial Defensive Capability (IDC) and all future BMDS Blocks being fielded by MDA. It consists of ground-based interceptors, sensors, and fire control systems fielded in multiple locations. The GMD employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies. The goals of the BMDS are (1) to complete, verify, and test the BMDS; (2) to place an operational capability on alert by September 30, 2004; (3) to enhance these fielded capabilities when appropriate; and (4) to perform concurrent operations and testing of a BMDS. The elements being developed and fielded for the Midcourse segment will comprise most of the critical components in meeting these goals in the near-term. Project 0808 provides the development for the GMD hardware and software components for the BMDS. This development consists of a series of block development efforts.

GMD system capability is measured by Engagement Sequence Groups (ESG) which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the GMD system within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the GMD GBI against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems become available. Block 2004 includes six BMDS ESGs (Engage on AEGIS, Launch on AEGIS, Engage on Cobra Dane, Engage on UEWRs (Beale and Fylingdales), and Engage on Sea-Based X-Band radar. These are the focus of IDC. Block 2006 incorporates two additional BMDS ESGs (Engage on UEWR (Thule) and Launch on DSP/SBIRS). Block 2008 incorporates three additional BMDS ESGs (Engage on Forward-Based X-Band Radar (FBX), Launch/Engage on EO/IR, and Launch/Engage on THAAD). ESGs are embedded into GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI surveillance testing; EKV and GMD fire control upgrades; and sea launched GBIs enable improvements to all ESGs and increase warfighter confidence.

The capability blocks of the GMD portion of the BMDS are defined as follows:

Block 2004 (contained in Projects 3011, 0708, 3012, and 0808) consists of the early development of the initial GMD hardware and software components of the BMDS IDC and Test Bed. This includes the development of the ground-based interceptor, specifically the booster and EKV; X-Band radar technologies, including the GBR-P; fire control and communications technologies, including the In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs); test range resources; and future fielding planning.

Block 2006 (contained in Projects 3012 and 0808) consists of the continuing development and fielding of capabilities to detect, track, intercept, and defeat ballistic missile threats. This also includes fielding of the Missile Defense Plan II (MDP-II). MDP-II fields additional interceptors (up to 20), UEWRs, IDTs, a second Sea-Based X-Band radar, and a third site. Block 2006 also includes continuing development and evolution of the wide range of software supporting the IDC and assessment, test, and evaluation of alternative GBI basing options. A basing concept under study examines the option of mounting GBIs on a sea-based relocatable platform to enhance responsiveness to emerging threats.

Block 2008 (Project 0908) development efforts are currently focused on sustaining engineering and spiral upgrades to the components of the GMD segment of the BMDS and integrated flight test of GBI components. This development effort will mature key technologies in logical stages to provide an enhanced and more robust BMDS Test Bed (using operationally representative hardware and software vice developmental hardware and software), and a continuing program to develop and demonstrate a wide range of "Hit-to-Kill" technologies.

The GMD Block 2004/2006 development program provides an integrated development and test program of more capable interceptors (both boost and kill vehicles), targets, sensors, battle management technologies, and GMD Fire Control and Communications systems and infrastructure. Specifically, the Project 0808 provides the following:

Project: 3012 GMD Dev & Test Bed Upgrades

	Date
MDA Exhibit R-2A RDT&E Project Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

- The GMD is developing boosters from two vendors to support the IDC. This risk reduction initiative will help ensure that reliable components are readily available for future fielding and testing requirements. Because of the dual booster development initiative, significant delays and turbulence to the IDC and test programs were avoided when the provider of the upper stage (CSD) for the BV+ booster (Lockheed) suffered significant damage to their propellant mixer in an explosion. Near-term booster acquisitions were shifted to the other booster supplier (OSC) avoiding delays to the IDC and flight test program. The Orbital (OSC) Boost Vehicle (OBV) and the BV+ will be the launch vehicles for the Exo-atmospheric Kill Vehicle (EKV). Both boosters are in development with booster verification flight tests planned in FY 2004.
- The EKV is a "Hit-to-Kill" payload designed to acquire, discriminate, track, and intercept targets in the midcourse phase of flight. The key components and technologies of the EKV include the acquisition and tracking sensors, the on-board maneuvering system, and the on-board vehicle C3 systems. Component development is on going and is demonstrated as part of the block improvement process in the Integrated Flight Test program.
- The sensor development program is a mix of enhancements to existing radar assets and development of new radar capabilities. The program will continue the software upgrades to the Early Warning Radars at Beale and Fylingdales, and the Cobra Dane radar at Shemya. The program continues planning for potential upgrades to other Early Warning Radar (EWR) sites. The key elements of the upgrades are the software builds to improve the effectiveness of the radars. A broad range of X-Band Radar (XBR) technologies will continue in development to support the SBX. The Ground Based Radar Prototype (GBR-P) located at the Ronald Reagan Test Site (RTS), at Kwajalein, is being used as part of the Integrated Flight Test program, and serves as a demonstration platform for these evolving radar technologies.
- The GMD Fire Control and Communications component is an integrated communications network of nodes, to enable the GMD element to function as part of the BMDS. This includes:
- -- Various communications links (e.g., CONUS ring, Alaska leased lines and Satellite Communications (SATCOM) to Shemya, Fort Greely, and In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs).
- -- GMD Fire Control and Communications Nodes [Fort Greely and Joint National Integration Center (JNIC) with remote operator workstations at Cheyenne Mountain Operations Center (CMOC)]
- -- In-Flight Interceptor Communications System Data Terminal (IDTs) at various locations.

These FC&C development initiatives continue on these technologies and components meeting future block capability requirements. This effort will be developed as part of the BMDS overarching BMC/C2 architecture.

- One of the most significant activities supported by this project is the component and systems level testing. The integrated flight and ground tests; the component level developmental testing; modeling and simulation; and the Verification, Validation, and Accreditation testing are critical to the successful fielding of all IDC components. The GMD test program is designed to demonstrate a broad range of GMD component development efforts. These incremental capabilities include multiple launches against multiple threat targets as the block capabilities mature. These components under test include boosters, EKVs, launch infrastructure, sensors, and interfaces with other BMDS elements. Additionally, the test program will incorporate Aegis Weapon System (AWS) radars to support GMD integrated flight test program. The test regimen will significantly expand to include operational interceptors both for ground and flight testing. These will subsequently to replaced with new interceptors from the ongoing production line to ensure the most technically capable GBI inventory while ensuring backward compatibility to the maximum extent possible. This rotable pool of GBI assets provides GMD the capability to maintain youngest average age for interceptors on alert. GMD will continuously evaluate the capabilities of available interceptors through this inventory surveillance program to be initiated in FY06 to ensure that the newest, most technologically capable missiles are on Alert. Older GBIs will be used for the Integrated Flight Test Program (up to 3 IFTs per year) to verify/validate maturing component capability improvements.
- Software is another key area of development supporting the BMDS. Software development supports the Upgraded Early Warning radars, the X-Band radars, the IDTs, EKV on-board processing and interfaces, the GBI systems interfaces, system-wide communications interfaces and nodes, and fire control. This software must support not only the operational BMDS but also the systems-wide testing during ground and flight tests.
- Planning continues to provide a capability to respond to additional future fielding orders in the shortest time possible. This includes site surveys and activation planning, silo design and planning, facility planning, environmental impact studies and assessments, logistics planning, and operational procedures

Project: 3012 GMD Dev & Test Bed Upgrades

B. Accomplishments/Planned Program			
	FY 2003	FY 2004	FY 2005
Ground Based Interceptor (GBI)	623,900		
RDT&E Articles (Quantity)	8		

DISCUSSION. The GBI development program funds the development of booster and EKV technologies. It also provides developmental assets for flight-testing. GMD has successfully demonstrated a hit-to-kill capability in five (5) separate flight tests

FY 2003 Accomplishments:

RDT&E Test Articles: Acquisition of 2 GBIs (includes both EKVs and boost vehicles) was initiated in FY 2001 for delivery in FY 2003. Acquisition of 4 boost vehicles (Booster Verification Flights) was initiated in FY 2001 for delivery in FY 2003.

- Conducted booster/EKV integration, ground/system tests, and Integrated Flight Tests.
- Completed acquisition of boosters for Booster Verification flights.
- Conducted Booster Verification flights.
- Continued Objective Booster development.
- Continued common silo and common command launch equipment development.
- Initiated refurbishment 2 silos at VAFB and equip for flight test.
- Continued development of EKV technologies to improve system discrimination, performance, and producibility in the areas of on-board sensors and processors, software/algorithms, vehicle maneuvering, and C3 systems.
- Continued modeling and simulation development.

	FY 2003	FY 2004	FY 2005
X Band Radar Technology Development	87,142		
RDT&E Articles (Quantity)			

DISCUSSION. X-Band radar technologies provide high-resolution tracking and discrimination data to the GMD fire control and subsequently the EKV thereby significantly enhancing the tracking and discrimination capabilities of the system. This effort develops highly sophisticated software algorithms to enhance target discrimination and material and component enhancements to improve power output and sensitivity. This technology forms the basis for the SBX.

FY 2003 Accomplishments

- Continued XBR systems integration into Test Bed Architecture.
- Continued development of a systems design and ground testing program to measure systems effectiveness.
- Completed XBR Receiver/Exciter, Beam Steering Group software testing.
- Continued to develop and field XBR Software Builds.
- Continued flight and ground test support.
- Continued operation and maintenance of GBR-P.

Project: 3012 GMD Dev & Test Bed Upgrades

Date MDA Exhibit R-2A RDT&E Project Justification APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) ROT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) ROT&E Articles (Quantity) DISCUSSION. The Sea-Based Test X-Band Radar (SBX) is a Midcourse Defense sensor that will support the IDC and Integrated Flight Tests and provides the capability of exercising all GMD

DISCUSSION. The Sea-Based Test X-Band Radar (SBX) is a Midcourse Defense sensor that will support the IDC and Integrated Flight Tests and provides the capability of exercising all GMD sensor functions (weapon task plan, in-flight target update, target object map and kill assessment). The SBX will include an IFICS Data Terminal. The SBX will be a relocatable, phased-array (half populated) radar. The ability of the SBX to be relocated enables full use of extended test range capabilities for all land and air target launches, provides more realistic siting, and facilitates operationally realistic testing. The SBX will be mounted on a modified, sea-going, semi-submersible platform similar to the oil drilling platforms currently in use.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005. The SBX development was initiated in FY 2002 with the acquisition of long-lead items associated with the radar. This acquisition is necessary to ensure that the XBR is ready to be integrated into the Ballistic Missile Defense System IDC and Test Bed in the fourth quarter of FY 2005.

FY 2003 Accomplishments:

- Initiated acquisition of the sea-based platform.
- Initiated acquisition of main radar structure.
- Initiated acquisition of radar electronic components.
- Initiated construction of operations and support structures and facilities for platform.
- Initiated acquisition of operations and support equipment for platform.

	FY 2003	FY 2004	FY 2005
Upgraded Early Warning Radar (UEWR) Development	36,452		
RDT&E Articles (Quantity)			

DISCUSSION. Upgraded Early Warning Radars (UEWRs) are large, fixed, phased-array surveillance radars used to detect, track, and count individual targets early in their trajectory. UEWRs are also effective in cueing the higher resolution X-Band radars to the location and trajectory of incoming targets. The planned upgrades provide precise tracking early enough to significantly expand the battlespace for the ground-based interceptors. This program will provide for the development of enhanced EWR software.

FY 2003 Accomplishments:

- Continued flight and ground test support.
- Continued planning for potential future UEWR sites.

Project: 3012 GMD Dev & Test Bed Upgrades

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) Beale Early Warning Radar Upgrade RDT&E Articles (Quantity) Date February 2004 R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment FY 2003 FY 2004 FY 2005 ROT&E Articles (Quantity) DISCUSSION. The Beale Early Warning Radar (EWR) is a large, fixed, phased-array surveillance radar used to detect, track, and count individual targets early in their trajectory. The planned Beale

DISCUSSION. The Beale Early Warning Radar (EWR) is a large, fixed, phased-array surveillance radar used to detect, track, and count individual targets early in their trajectory. The planned Beale upgrades provide the capability of not only detecting, but provide precise tracking early enough to significantly expand the battlespace for the ground based interceptors into the early stages of flight. The Beale upgrades include both hardware and software enhancements to improve overall performance.

Note: This effort has been moved to Project 0708 in FY 2004 and 2005.

FY 2003 Accomplishments:

- Continued flight and ground test support.
- Completed prototype string hardware.
- Completed Beale facility Design.
- Completed Beale facility modification.
- Completed acquisition of Beale receiver-exciter and processors.

	FY 2003	FY 2004	FY 2005
GMD Fire Control & Communications	218,201		
RDT&E Articles (Quantity)			

DISCUSSION. The GMD Fire Control and Communications (GFC/C) enables control and operation of the GMD Element as part of the BMDS. The communications component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communication Systems (IFICS).

FY 2003 Accomplishments:

- Continued flight and ground test support.
- Continued development and installation of ESI software builds.
- Continued development and installation of IFICS software builds.
- Initiated development and installation of Test Exercise software builds.
- Continued development and installation of GMD software builds.

	FY 2003	FY 2004	FY 2005
Element Engineering & Integration	175,916		
RDT&E Articles (Quantity)			

DISCUSSION. GMD Element Engineering provides engineering and analysis support for building and integrating the functional components of the 2004 IDC and Test Bed. Defines element-level test requirements and objectives and develops element-level assessments and capability-based requirements. Provides engineering, integration, and operations planning supporting an initial defensive

Project: 3012 GMD Dev & Test Bed Upgrades

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) | Date | February 2004 | | R-1 NOMENCLATURE | | 0603882C Ballistic Missile Defense Midcourse Defense Segment

operational capability. Continues the integration of component/element systems and sustains the planning effort for future fielding options. Continues to support and complement the BMDS systems engineering capability by providing detailed insight and analysis into component technical and design-specific issues.

FY 2003 Accomplishments:

- Completed Integration Phase 2 (IP-2) and Integrated Assessment Review (IAR).
- Completed IP-3 Integrated Technical Review (ITR).
- Completed IP-4 Integrated Design Review (IDR).
- Conducted software management and specialty engineering.
- Conducted software verification and validation.
- Conducted modeling and simulation development.
- Conducted system analyses, integration, and verification.
- Supported integrated ground tests and specialty testing.
- Conducted pre- and post-flight test analyses.

	FY 2003	FY 2004	FY 2005
Element Test and Evaluation	252,578		
RDT&E Articles (Quantity)	2		

DISCUSSION. GMD Test and Evaluation utilizes a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources providing critical risk reduction and measurement of system performance for all GMD element components. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance.

The GMD Combined Test Force, under a single unified organization, integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, and minimizes the duplication of test resources and the time required to execute required testing.

FY 2003 Accomplishments:

RDT&E Test Articles: Acquisition of 2 targets initiated in 2001 for delivery in FY 2003.

- Conducted Integrated Flight Tests (IFT).
 - -- Successfully conducted IFT-9.
- -- Conducted IFT-10, but did not meet test expectations due to the failure of a component causing the EKV not to separate from the booster.
- -- Successfully conducted booster verification test, BV-6, the first flight of the Orbital (OSC) Boost Vehicle (OBV).
- Performed pre- and post-test analyses.
- Continued operation and maintenance of System Test Lab, Prime Contractor Integrated Laboratory (PCIL), and Integrated Systems Test Center (ISTC).
- Continued ground and flight test planning, design, and scheduling.
- Performed analyses to define target requirements.
- Established Element Test Objectives.

Project: 3012 GMD Dev & Test Bed Upgrades

			Date	
MDA Exhibit R-2A RDT&E Project Justi	fication		February 2004	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCL	ATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603882C Bal	listic Missile Defense Midco	urse Defense Segment
	FY	2003	FY 2004	FY 2005
Program Planning and Management		130,542		
RDT&E Articles (Quantity)				

DISCUSSION.

FY 2003 Accomplishments:

- Provided government program office staff and infrastructure for the management of the GMD Program.
- Provided technical and business management expertise to support GMD Joint Program Office (JPO) tasks and activities, financial management, including cost and schedule performance assessments, configuration management, and integration planning activities.
- Provided requirements clarification and verification of H/W and S/W development including management of IV&V activities, test and evaluation planning and execution.
- Continued program management, subcontract management, quality assurance, and technical and testing oversight.

	FY 2003	FY 2004	FY 2005
Logistics Planning, Production and Protection	249,887		
RDT&E Articles (Quantity)			

DISCUSSION. GFX represents the materiel and services provided to the prime contractor in support of the GMD development and test efforts. It includes Government Furnished Equipment (GFE), Information (GFI), Facilities (GFF), and Services (GFS) (including communication leases).

FY 2003 Accomplishments:

- Continued to coordinate and provide GFX (over 700 lines items) to the prime contractor to support IDC and Test Bed activations and GMD test program.
- Continued to provide management efforts to activate a logistics support system to include site support activations and validation, logistical support requirements, and IDC and Test Bed readiness reviews
- Conducted quality assurance planning and implementation.
- Continued to provide comprehensive on-site logistics support to the Site Activation Command (SAC) Alaska and other IDC and extended Test Bed sites as required.
- Continued to provide functional support for production, quality, configuration and change management.
- Conducted sustainment, fielding, siting, and facility planning.
- Conducted reliability and maintainability analyses.
- Continued to provide program protection to the IDC and Test Bed including physical security.

	FY 2003	FY 2004	FY 2005
Site Activation	54,055		
RDT&E Articles (Quantity)			
DIGGLIGGION III. CC			

DISCUSSION. This effort provides a broad range of site design and layout, facility requirements, and environmental management activities.

Project: 3012 GMD Dev & Test Bed Upgrades

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2003 Accomplishments:

- Continued Block 2004 IDC/Test Bed activation.
- Updated IDC/Test Bed site activation plans.
- Continued siting, NEPA, and ESH analysis for Block 2004 Test Bed.
 Initiated siting and Joint Spectrum Center (JSC) Electromagnetic Interference (EMI) analysis for SBX.

C. Other Program Funding Summary

3 3								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing

Project: 3012 GMD Dev & Test Bed Upgrades

MDA	Exhibit R-2A I	RDT&E Projec	Date February 2004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component		R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment								
	FY 2003	FY 2004	FY 2005	FY 200	6	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0		0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0		0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0		0	0	0	0	Continuing	Continuing

D. Acquisition Strategy

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has restructured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy is to build the initial GMD parts of the BMDS Test Bed NLT 4th Quarter FY 2004 as an early Defensive Operational Capability and deliver capability block upgrades as early as practical. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Fyhih	it R-3 RDT&E Pro	niect Cost Ana	lveie			Date Februa	rv 2004		
APPROPRIATION/BUDGET AC		II K-3 KDT&E ITO	ject Cost Alia	19818	R-1 NOMEN	ICLATURE	Februa	1 y 2004		
RDT&E, DW/04 Advanced (evelopment and F	Prototypes (A	CD&P)			sile Defens	e Midcourse D	efense Seg	ment
I. Product Development Cost (\$ in	-	*	71	,					8	
, , , , , , , , , , , , , , , , , , ,	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Ground Based Interceptor (GBI)										
		Boeing/								
GBI	SS/CPAF	Various	837,556	0		0		CONT.	837,556	CON
X Band Radar Technology Development										
		Boeing/								
	SS/CPAF	Various	88,484	0		0		CONT.	88,484	CONT
Sea-Based X-Band Radar										
		Boeing/								
	SS/CPAF	Various	41,900	0		0		CONT.	41,900	CON
Upgraded Early Warning Radar (UEWR) Development										
		Boeing/								
	SS/CPAF	Various	22,660	0		0		CONT.	22,660	CON
Beale Early Warning Radar Upgrade										
		Boeing/								
	SS/CPAF	Various	107,900	0		0		CONT.	107,900	CON
GMD Fire Control & Communications										
		Boeing/								
	SS/CPAF	Various	392,166	0		0		CONT.	392,166	CON
Element Engineering & Integration										
		Boeing/								
	SS/CPAF	Various	136,713	0		0		CONT.	136,713	CONT
Element Test and Evaluation										
		Boeing/								
	SS/CPAF	Various	114,954	0		0		CONT.	114,954	CONT

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Exhi	bit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMEN 0603882C 1		ssile Defens	e Midcourse l	Defense Seg	ment
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Logistics Planning, Production and Protection		Boeing /								
Subtotal Product Development	SS/CPAF	Various	21,325 1,763,658	0		0		CONT.	21,325 1763658	CONT.

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

II. Support Costs Cost (\$ in Thousands)

11. Support Costs Cost (\$ in Thou	Contract	Performing	Total		FY 2004		FY 2005			Target
		_		EN 2004		EX. 2005		G	m . 1	
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Ground Based Interceptor (GBI)										
		Davidson/								
	SS/FP	AL	564	0		0		CONT.	564	CONT
		Mevatec/								
	SS/FP	AL	7,282	0		0		CONT.	7,282	CONT
		TSI/								
	SS/FP	AL	5,794	0		0		CONT.	5,794	CON
		Sparta/								
	C/CPFF	AL	1,730	0		0		CONT.	1,730	CONT
		AMCOM/								
	MIPR	AL	437	0		0		CONT.	437	CONT
		USASMDC/								
	MIPR	AL	337	0		0		CONT.	337	CONT
		DOT/ITOP/								
	MIPR	DC	487	0		0		CONT.	487	CONT
		Mitre/								
	MIPR	AL	131	0		0		CONT.	131	CONT

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Exh	ibit R-3 RDT&E Proje	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET A	CTIVITY				R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Advanced 0	Component 1	Development and Pr	ototypes (A	CD&P)	0603882C	Ballistic Mis	ssile Defens	e Midcourse D	efense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		Misc/								
	MIPR	Various	214	0		0		CONT.	214	CONT.
		Misc/								
	Various	Various	1,651	0		0		CONT.	1,651	CONT.
		CSC/								
	SS/FP	AL	7,245	0		0		CONT.	7,245	CONT.
		SMC/								
	MIPR	CA	8,649	0		0		TBD	8,649	TBD
X Band Radar Technology Development										
	C/FP	TBE	1,440	0		0		TBD	1,440	TBD
	C/FP	CSC	552	0		0		TBD	552	TBD
	SS/CPAF	Ga. Tech	1,730	0		0		CONT.	1,730	CONT.
	C/FP	Mevatech	7,578	0		0		CONT.	7,578	CONT.
	MIPR	AMCOM	1,667	0		0		CONT.	1,667	CONT.
	C/CPFF	Xontech	780	0		0		CONT.	780	CONT.
Upgraded Early Warning Radar (UEWR) Development										
		Xontech/								
	MIPR	Boston, MA	2,700	0		0		TBD	2,700	TBD
		TRW/								
	C/CPAF	JNIC	338	0		0		TBD	338	TBD
		AFRL/								
	C/CPFF	ESC, Hanscom AFB	120	0		0		TBD	120	TBD
Element Engineering & Integration										
		TSC/SMDC/								
	MIPR	AL	1,100	0		0		CONT.	1,100	CONT.
	MIPR	NSWC/ Dahlgren, VA	5,795	0		0		CONT.	5,795	CONT
	1	<u>I</u>			1	1		<u>l</u>		

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Ext	nibit R-3 RDT&E Proje	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUD	GET ACTIVITY				R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Adva	anced Component	Development and Pro	ototypes (A	CD&P)	0603882C	Ballistic Mis	sile Defens	e Midcourse D	efense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		DTRA/								
	MIPR	Dulles, VA	1,360	0		0		CONT.	1,360	CON
		NAIC/								
		Wright Patterson,								
	MIPR	AFB	900	0		0		CONT.	900	CON
		SBIRS SPO/								
	MIPR	LA AFB, CA	2,900	0		0		CONT.	2,900	CON'
		DTD/GMD/								
	MIPR	Huntsville, AL	2,200	0		0		CONT.	2,200	CON
		GME Engineering								
		Analysis/								
	MIPR	Huntsville, AL	3,190	0		0		CONT.	3,190	CON
		GMD Studies & Analysis/								
	MIPR	Huntsville, AL	1,900	0		0		CONT.	1,900	CON
	MILL	CSC/	1,900	0		0		CONT.	1,900	CON
	SS/CPFF	Arlington, VA	18,288	0		0		CONT.	18,288	CON
	35/CPFF	MIT Lincoln Labs/	10,200	0		0		CONT.	10,200	CON
	MIPR	Cambridge, MA	973	0		0		CONT.	973	CON
	MIPK	Photon Labs/	973	0		0		CONT.	9/3	CON
	MIPR	Arlington, VA	1,334	0		0		CONT.	1,334	CON
	MIPK	IDA/	1,354	0		0		CONT.	1,554	CON
	SS/CPAF	Arlington, VA	230	0		0		CONT.	230	CON
	SS/CPAF	Miltec/	230	0		0		CONT.	230	CON
	C/CPAF	Huntsville, AL	0	0		0		CONT.		CON
	С/СРАГ		0	0		U		CON1.		CON
	MIDD	Aerospace Corp./	550	0				TDD	550	TTD
	MIPR	Los Angeles, CA	400	0		0		TBD CONT.	550 400	TB
	C/CPAF	Various	400	0		0		CON1.	400	CON
	MIDD	JNIC/	£ 400	0				CONT	5 400	COM
	MIPR	Colorado Springs, CO	5,480	0		0		CONT.	5,480	CON

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Ext	nibit R-3 RDT&E Proje	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET A	ACTIVITY	-			R-1 NOMEN	NCLATURE	-	•		
RDT&E, DW/04 Advanced	Component	Development and Pro	ototypes (A	CD&P)	0603882C	Ballistic Mis	sile Defens	e Midcourse D	efense Seg	ment
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Program Planning and Management	0.171							200041010		
		CSC/								
SPT DC	C/CPAF	DC	94,875	0		0		CONT.	94,875	CONT.
SPT HSV	C/CPAF	CSC/ AL	44,226	0		0		CONT.	44,226	CONT.
		SMDC/								1
TRADOC System Manager	MIPR	AL	21,136	0		0		CONT.	21,136	CONT.
Logistics Planning, Production and Protection										
Logistic/GFX	C/CPFF	Nichols/ SY Tech	709	0		0		TBD	709	TBD
	C/CPFF	CSC/ AL	612	0		0		CONT.	612	CONT.
	C/CPFF	L3 Communications/ AL	1,018	0		0		CONT.	1,018	CONT.
		Mevatech/	·						·	
	C/CPFF	AL	862	0		0		CONT.	862	CONT.
	C/CPFF	TSI/ AL	450	0		0		CONT.	450	CONT.
	C/CPFF	MSAIC	48	0		0		CONT.	48	CONT.
	MIPR	AMCOM/ IMMC	690	0		0		CONT.	690	CONT.
	MIPR	AMCOM/ OGA	0	0		0		CONT.	370	CONT.
	MIPK	Mevatech/	0	0		0		CONT.		CONT.
	C/CPFF	AL	425	0		0		CONT.	425	CONT.
	C/CPFF	CSC	100	0		0		TBD	100	TBD
	C/CPFF	SY Tech	2,100	0		0		CONT.	2,100	CONT.

Project: 3012 GMD Dev & Test Bed Upgrades

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Contract Method & Type MIPR MIPR	Performing Activity & Location Colsa/ AL COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	Cost Total PYs Cost 65 40,922 275 6 5,353 500 609 400	FY 2004 Cost 0 0 0 0 0 0 0	FY 2004 Award Date		Februa ssile Defens FY 2005 Award Date	Cost to Complete CONT. CONT. CONT. CONT. CONT. CONT.	Total Cost 65 40,922 275 6 5,353	Target Value of Contract CONT. CONT. CONT. CONT. CONT.
Contract Method & Type MIPR	Performing Activity & Location Colsa/ AL COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	Total PYs Cost 65 40,922 275 6 5,353 500 609	FY 2004 Cost 0 0 0 0 0 0 0	FY 2004 Award Date	FY 2005 Cost 0 0 0 0 0 0	FY 2005 Award	Cost to Complete CONT. CONT. CONT. CONT. CONT.	Total Cost 65 40,922 275 6 5,353	Target Value of Contract CONT. CONT. CONT. CONT.
Method & Type MIPR	Activity & Location Colsa/ AL COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	PYs Cost 65 40,922 275 6 5,353 500 609	Cost 0 0 0 0 0 0 0 0 0 0	Award Date	0 0 0 0 0 0 0 0 0	Award	CONT. CONT. CONT. CONT. CONT. CONT.	Cost 65 40,922 275 6 5,353	Value of Contract CONT. CONT. CONT. CONT.
Cost Categories: & Type MIPR	Location Colsa/ AL COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	Cost 65 40,922 275 6 5,353 500 609	Cost 0 0 0 0 0 0 0 0 0 0	Date	0 0 0 0 0 0 0 0 0		CONT. CONT. CONT. CONT. CONT. CONT.	Cost 65 40,922 275 6 5,353	CONT. CONT. CONT. CONT. CONT.
MIPR MIPR MIPR MIPR MIPR MIPR MIPR MIPR	Colsa/ AL COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	65 40,922 275 6 5,353 500 609	0 0 0 0 0		0 0 0 0	Date	CONT. CONT. CONT. CONT. CONT.	65 40,922 275 6 5,353	CONT. CONT. CONT. CONT.
MIPR	AL COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	40,922 275 6 5,353 500 609	0 0 0 0 0 0		0 0 0		CONT. CONT. CONT. CONT.	40,922 275 6 5,353	CONT. CONT. CONT.
MIPR	COE DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	40,922 275 6 5,353 500 609	0 0 0 0 0 0		0 0 0		CONT. CONT. CONT. CONT.	40,922 275 6 5,353	CONT. CONT. CONT.
MIPR	DTRA/ VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	275 6 5,353 500 609	0 0 0 0 0		0 0 0		CONT. CONT. CONT.	275 6 5,353 500	CONT.
MIPR	VA NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	5,353 500 609	0 0 0 0		0 0		CONT. CONT.	5,353 500	CONT.
MIPR	NSA/ VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	5,353 500 609	0 0 0 0		0 0		CONT. CONT.	5,353 500	CONT.
MIPR MIPR MIPR MIPR MIPR MIPR MIPR MIPR	VA USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	5,353 500 609	0 0		0		CONT.	5,353	CONT.
MIPR MIPR MIPR MIPR MIPR MIPR MIPR MIPR	USACE/ AL USASMDC/ AL USAF MET&CAL Schriever AFB	5,353 500 609	0 0		0		CONT.	5,353	CONT.
MIPR MIPR MIPR MIPR MIPR MIPR MIPR MIPR	AL USASMDC/ AL USAF MET&CAL Schriever AFB	500 609	0		0		CONT.	500	
MIPR MIPR MIPR MIPR MIPR MIPR MIPR MIPR	USASMDC/ AL USAF MET&CAL Schriever AFB	500 609	0		0		CONT.	500	
MIPR MIPR MIPR MIPR MIPR MIPR MIPR	AL USAF MET&CAL Schriever AFB	609	0						CONT.
MIPR MIPR MIPR MIPR MIPR MIPR MIPR	USAF MET&CAL Schriever AFB	609	0						CONT.
MIPR MIPR MIPR MIPR MIPR MIPR	Schriever AFB				0		CONTE		
MIPR MIPR MIPR MIPR		400			O I		CONT.	609	CONT.
MIPR MIPR MIPR		400	0		0		CONT.	400	CONT.
MIPR MIPR	NSA	21	0		0		CONT.	21	CONT.
MIPR	Schriever AFB	59	0		0		CONT.	59	CONT.
	CST	150	0		0		CONT.	150	CONT.
	USASMDC/								
G/GDEE	AL	1,376	0		0		CONT.	1,376	CONT.
CACREE	CSC/								
C/CPFF	AL	384	0		0		TBD	384	TBD
	Sparta/								
C/CPFF	AL	384	0		0		TBD	384	TBD
	AMCOM/								
MIPR	AL	906	0		0		TBD	906	TBD
MIPR	OGA	446	0		0		TBD	446	TBD
	USACE/								
	AL	2,000	0		0		TBD	2,000	TBD
	TRW/DC/								
Program Protection C/CPAF	AL	4,300	0		0		TBD	4,300	TBD
·									

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Exh	iibit R-3 RDT&E Proje	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET A					R-1 NOMEN	NCLATURE				•
RDT&E, DW/04 Advanced	Component 1	Development and Pro	ototypes (A	CD&P)	0603882C	Ballistic Mis	sile Defens	e Midcourse D	efense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		USASMDC/AL/								
	MIPR	AL	2,380	0		0		TBD	2,380	TBD
		Various	800	0		0		CONT.	800	CONT.
Production	MIPR	AMRDEC/AL	1,600	0		0		CONT.	1,600	CONT.
	CPFF	Various/AL	3,472	0		0		CONT.	3,472	CONT.
		USASMDC/								
Govt Furnished Information	MIPR	AL	75,865	0		0		TBD	75,865	TBD
		USASMDC/								
Base Support and Real Property	MIPR	AL	0	0		0		CONT.		CONT.
Site Activation										
		CSC/								
	C/CPFF	AL	2,217	0		0		CONT.	2,217	CONT.
	MIPR	Various	2,917	0		0		CONT.	2,917	CONT.
		USACE/								
	MIPR	Huntsville, AL	6,928	0		0		CONT.	6,928	CONT.
		CSC/								
	C/CPFF	AL	2,888	0		0		CONT.	2,888	CONT.
		L3 Communications/								
	C/CPFF	AL	1,789	0		0		CONT.	1,789	CONT.
		U.S. Army War College/								
	MIPR	PA	1,440	0		0		CONT.	1,440	CONT.
		Various	3,050	0		0		CONT.	3,050	CONT.
		Mevatech/								
	C/CPFF	AL	1,817	0		0		CONT.	1,817	CONT.
		Nichols/								
	C/CPFF	AL	1,078	0		0		CONT.	1,078	CONT.
		CSC/								
	C/CPFF	AL	6,413	0		0		CONT.	6,413	CONT.

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Fyb	ibit R-3 RDT&E Proj	not Cost Ano	lveje			Date Februa	ry 2004		
APPROPRIATION/BUDGE RDT&E, DW/04 Advance	T ACTIVITY	Ÿ			R-1 NOMEN 0603882C			e Midcourse I	Defense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
	C/CPFF	Colsa/ AL	225	0		0		CONT.	225	CONT.
	MIPR	USACE/ Huntsville, AL	1,000	0		0		CONT.	1,000	CONT.
	C/CPFF	CSC/ AL	1,898	0		0		CONT.	1,898	CONT.
	CPFF	L3 Communications/ AL	1,291	0		0		CONT.	1,291	CONT.
	MIPR	USASMDC/ AL	4,765	0		0		CONT.	4,765	CONT.
	MIPR	USARAK/ AK	12,691	0		0		CONT.	12,691	CONT.
		Various	920	0		0		CONT.	920	CONT.
	SS/CPAF	Boeing/ Various	19,756	0		0		TBD	19,756	TBD
Subtotal Support Costs			480,633	0		0		0	480633	

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

III. Test and Evaluation Cost (\$ in Thousands)

111. Test and Evaluation Cost (ψ)	iii Tiiousanus j									
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Element Test and Evaluation										
		Colsa/								
Combined Test Force	C/CPAF	AL	7,527	0		0		CONT.	7,527	CONT.
		ASGI/								
	C/CPIF	AL	507	0		0		CONT.	507	CONT.

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Exhi	bit R-3 RDT&E Proj	ject Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGE	T ACTIVITY				R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Advance	ed Component D	Development and Pi	rototypes (A	CD&P)	0603882C	Ballistic Mis	sile Defens	e Midcourse D	efense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		Boeing/								
	SS/CPAF	Various	2,250	0		0		CONT.	2,250	CONT
		Kirtland AFB/								
	MIPR	NM	225	0		0		CONT.	225	CONT
		USAKA/								
	MIPR	AK	22,578	0		0		CONT.	22,578	CONT
		Sandia/								
	MIPR	NM	125	0		0		CONT.	125	CONT
		USASMDC/								
	MIPR	AL	3,081	0		0		CONT.	3,081	CONT
		JNTF/								
	C/TM	CO	1,861	0		0		CONT.	1,861	CONT
		Nichols/								
	MIPR	AL	1,119	0		0		CONT.	1,119	CONT
		Mevatech/								
	C/TM	AL	5,412	0		0		CONT.	5,412	CONT
		CSC/								
	C/TM	AL	2,226	0		0		CONT.	2,226	CONT
		Aeromet/								
	C/CPIF	Various	1,153	0		0		CONT.	1,153	CONT
	MIPR	SBIRS SPO	610	0		0		CONT.	610	CONT
		AMCOM/								
	MIPR	AL	1,728	0		0		CONT.	1,728	CONT
		USARSPACE/		_						
	MIPR	AL	137	0		0		CONT.	137	CONT
	,	Eglin AAFB/		-						~~-
	MIPR	FL AFR	150	0		0		CONT.	150	CONT
	MDD	Peterson AFB/	240					CONT	240	G017
	MIPR	СО	348	0		0		CONT.	348	CONT

Project: 3012 GMD Dev & Test Bed Upgrades

		ibit R-3 RDT&E Proj		lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGE					R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Advan	ced Component I	Development and Pr	rototypes (A	CD&P)	0603882C	Ballistic Mis	ssile Defens	e Midcourse I	Defense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		OGA`s/								
	MIPR	Various	612	0		0		CONT.	612	CONT.
		IEC Electronics/								
	CPFF	Various	3,069	0		0		CONT.	3,069	CONT.
		CAS/								
	C/TM	Various	1,100	0		0		CONT.	1,100	CONT.
		MIT LLNL/								
	MIPR	MA	4,944	0		0		CONT.	4,944	CONT.
		ITT/								
	C/CPFF	Various	2,480	0		0		CONT.	2,480	CONT.
		AEDC/								
	MIPR	TN	25	0		0		CONT.	25	CONT.
		Sandia/								
	MIPR	NM	3,566	0		0		CONT.	3,566	CONT.
		Mevatech/								
	C/Other	AL	100	0		0		CONT.	100	CONT.
		HAFB/								
	MIPR	MA	1,120	0		0		CONT.	1,120	CONT.
		SMDC/								
	MIPR	AL	93	0		0		CONT.	93	CONT.
		TSI/								
	Other	AL	1,005	0		0		CONT.	1,005	CONT.
		VRC/								
	C/CPFF	AL	2,953	0	<u> </u>	0		CONT.	2,953	CONT.
		Colsa/								
	C/CPFF	AL	420	0		0		CONT.	420	CONT.
		SLAD/								
	MIPR	AL	175	0		0		CONT.	175	CONT.
		CEI/					_			
	C/CPFF	AL	647	0		0		CONT.	647	CONT.

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Exhi	ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET A	ACTIVITY				R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Advanced	Component I	Development and Pr	ototypes (A	CD&P)	0603882C	Ballistic Mis	ssile Defens	e Midcourse D	efense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		TRW/								
	C/CPFF	AL	2,333	0		0		CONT.	2,333	CONT.
	MIPR	Various OGA`s	1,361	0		0		CONT.	1,361	CONT.
		SAIC/								
	C/CPFF	Various	945	0		0		CONT.	945	CONT.
		AEC/								
	MIPR	Various	788	0		0		CONT.	788	CONT.
		Sandia/								
	MIPR	NM	29,195	0		0		CONT.	29,195	CONT.
		USASMDC/								
	MIPR	AL	8,814	0		0		CONT.	8,814	CONT.
		SY Tech/								
	C/CPFF	AL	2,370	0		0		CONT.	2,370	CONT.
		SMC/								
	MIPR	AL	36,116	0		0		CONT.	36,116	CONT.
		OGA`s/								
	MIPR	Various	5,425	0		0		CONT.	5,425	CONT.
		Vandenberg AFB/								
	MIPR	CA	3,457	0		0		CONT.	3,457	CONT.
		SY Tech/								
TTEC	C/CPFF	AL	5,907	0		0		CONT.	5,907	CONT.
		SED/								
	MIPR	AL	1,050	0		0		CONT.	1,050	CONT.
		STRICOM/								
TTEC	MIPR	FL	1,078	0		0		CONT.	1,078	CONT.
		Various/								
	Various	Various	1,021	0		0		CONT.	1,021	CONT.
Subtotal Test and Evaluation			173,206	0		0		0	173206	
Remarks										

Project: 3012 GMD Dev & Test Bed Upgrades

	MOA E-L!	" ' D 4 DD#0 E D!	4 00				Date	2004		
		ibit R-3 RDT&E Proje	ect Cost Anal	lysis			Februa	ry 2004		
APPROPRIATION/BUDGET AC					R-1 NOMEN					
RDT&E, DW/04 Advanced (Component E	Development and Pr	ototypes (A	CD&P)	0603882C I	Ballistic Mis	sile Defens	e Midcourse D	Defense Segr	ment
The Prime Contractor has the respons			ID program and	l allocate fund	ling according t	to program prog	ress. This ma	y require the Prim	e Contractor to	reallocate
funding, which would change the esti	mates provided i	in this R-3 document.								
W. 34										
IV. Management Services Cost (\$	Contract	Performing	Total		FY 2004	Т	FY 2005	Г		Target
	Method	Activity &	PYs	FY 2004		FY 2005		Cost to	Total	Value of
C : C-+		•			Award		Award			
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
X Band Radar Technology Development										
		MIT Lincoln Lab/								
	FFRDC	MA	1,765	0		0	ļ	CONT.	1,765	CONT.
Upgraded Early Warning Radar (UEWR) Development										
· · · ·		MIT Lincoln Lab/			+					
	FFRDC	MA	600	0		0		CONT.	600	CONT.
		Mitre/								
	FFRDC	Various	5,763	0		0		CONT.	5,763	CONT.
		SEMCOM/	2,1.3.5	-	+	 			-,	
	C/CPFF	Various	3,654	0		0		CONT.	3,654	CONT.
		Tecolote/			<u> </u>					
	C/CPFF	Various	264	0		0		CONT.	264	CONT.
		ESC/Hanscom/			+	 				
	C/CPFF	Various	550	0		0		CONT.	550	CONT.
GMD Fire Control & Communications										
		NSWC/				1				
	MIPR	MD	4,605	0		0		CONT.	4,605	CONT.
		TRW/			+	 				
	C/CPAF	MA	8,287	0		0	ļ	CONT.	8,287	CONT.
		Mitre/IDA/					-			
	FFRDC	Various	1,545	0		0		CONT.	1,545	CONT.
		Sparta/								
	C/CPAF	AL	3,548	0		0		CONT.	3,548	CONT.

Project: 3012 GMD Dev & Test Bed Upgrades

MDA Exhibit R-3 (PE 0603882C)

		ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET A RDT&E, DW/04 Advanced		Development and Pr	ototypes (A	CD&P)	R-1 NOMEN 0603882C		ssile Defens	e Midcourse I	Defense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		NRC/								
	C/CPAF	Various	714	0		0		CONT.	714	CONT
		QRI/								
	C/BPA	Various	959	0		0		CONT.	959	CONT
		CSC/								
	C/CPAF	AL	1,852	0		0		CONT.	1,852	CONT
		Vanguard Research/								
	C/CPAF	AL	171	0		0		CONT.	171	CONT
		Tecolote/								
	BPA	Various	582	0		0		TBD	582	TBD
		USAF ESC/								
	MIPR	MA	84	0		0		CONT.	84	CONT
		ARL/								
	MIPR	CA	300	0		0		CONT.	300	CONT
		DISA-GFX/								
	MIPR	Various	5,531	0		0		TBD	5,531	TBD
		Mevatech/	· · · · · · · · · · · · · · · · · · ·							
	C/CPAF	AL	836	0		0		CONT.	836	CONT
	C/CPAF	TBD	885	0		0		CONT.	885	CONT
	C/CPAF	TSI	252	0		0		CONT.	252	CONT
		NSA/								
	MIPR	MD	500	0		0		TBD	500	TBD
	MIPR	Argonne NL	195	0	1	0		CONT.	195	CONT
	Various	Miscellaneous	971	0		0		CONT.	971	CONT
Subtotal Management Services			44,413	0		0		0	44413	
Subtotal Management Services Remarks			44,413	0		0		0	44413	

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

Project: 3012 GMD Dev & Test Bed Upgrades

UNCLASSIFIED											
	MDA Exhibit R-3 R	DT&E Project Cost Ana	alysis	Date February 2004							
APPROPRIATION/BUDGET ACTI RDT&E, DW/04 Advanced Con		ent and Prototypes (A	ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment							
Project Total Cost		2,461,910	0		0		2,461,910				
Remarks The Prime Contractor has the responsibil funding, which would change the estimate	lity to balance resources tes provided in this R-3 of	across the GMD program ar		ling according t	L	This may require the Pri					

Project: 3012 GMD Dev & Test Bed Upgrades

Fiscal Year			003				04			200	5		-	200	06			20	07				800				09	_
	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
Flight Tests				ı		ı								-												ı	ı	
IFT09	<u> </u>																											igdash
IFT10	Δ																											╄
IFT13B						Δ					4	ļ										<u> </u>						igspace
IFT13C						Δ			Δ																			Ļ
IFT14							Δ	_		- △↓																		ot
IFT15								Δ		4	Δ																	
FT 04-1										_	_	△																L
FTG 04-1										<u>4</u>	4	<u> </u>	Δ															
FTG 04-2											씆			∠														
FTG 04-3												4																
FTG 04-4 a/b (Salvo Mission)												4	_	_	\triangle													
FTG 04-5													4			ho												
FT 06-1													4			1												
FTG 06-1 a/b (Salvo Mission)																Р			1									
FTG 06-2																	4			R								

Project: 3012 GMD Dev & Test Bed Upgrades

MDA	Exh	ibit	R-4	Sche	dule	Pro	file											Date Feb		ry 2	2004	ı						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	ent a	nd l	Prot	otyj	pes (AC	D &]	P)				NCL. Ball			ssile	De	fens	e M	idco	ours	e Do	efens	e Se	gme	nt	
Fiscal Year	2003			2003 2004 200		005 2006				2007 2008			2009															
	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
Flight Tests																												
FTG 06-3 a/b (Salvo Mission)																		Δ			+	<u> </u>						
FTG 06-4																				Δ	+	╁	+	\ <u> </u>				
FTG 08-1																						△	#	+	₽			
FTG 08-2																						<u> </u>		+				
FTG 08-3 a/b (Salvo Mission)																								_ ∆			\triangle	
FTG 10-1																									Δ			<u> </u>
FTG 10-2																											4	<u> </u>
FTG 10-3		Ш						上	上	Ш							L	L	L		上	上	上	上			4	- ∆
Booster Verification Test						ı	ı			_									_	<u> </u>		_		_		T		
BV 6				Δ																								
BV 5						Δ				L																		
Milestones									_	_									_		_	_	_	_				
Decision Points	Δ	H						Ħ	t	Ħ						H	<u> </u>		H	┢	ŧ	╪	ŧ	+		H	\Rightarrow	
																						_						
										<u> </u>											1	-	1					

Project: 3012 GMD Dev & Test Bed Upgrades

	MDA Ewkikit D 44 Cok	adula Datail			Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compor				MENCLATURE 2C Ballistic Mis	sile Defense Mid		Segment
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Flight Tests							
IFT09	1Q						
IFT10	1Q						
IFT13B		2Q					
IFT13C		2Q-4Q	1Q				
IFT14		3Q-4Q	1Q-2Q				
IFT15		4Q	1Q-3Q				
FT 04-1			1Q-4Q				
FTG 04-1			2Q-4Q	1Q			
FTG 04-2			3Q-4Q	1Q-2Q			
FTG 04-3			4Q	1Q-3Q			
FTG 04-4 a/b (Salvo Mission)			4Q	1Q-3Q			
FTG 04-5				1Q-4Q			
FT 06-1				1Q-4Q			
FTG 06-1 a/b (Salvo Mission)				4Q	1Q-3Q		
FTG 06-2					1Q-4Q		
FTG 06-3 a/b (Salvo Mission)					2Q-4Q	1Q	
FTG 06-4					4Q	1Q-3Q	
FTG 08-1						2Q-4Q	1Q
FTG 08-2						3Q-4Q	1Q-2Q
FTG 08-3 a/b (Salvo Mission)						4Q	1Q-3Q
FTG 10-1							1Q-4Q
FTG 10-2							3Q-4Q
FTG 10-3							3Q-4Q
Booster Verification Test							
BV 6	4Q						
BV 5		2Q					

Project: 3012 GMD Dev & Test Bed Upgrades

		CITCE.						
	MDA Exhibit R-4A Sch	edule Detail				Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component					ENCLATURE C Ballistic Mis		lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY 20	005	FY 2006	FY 2007	FY 2008	FY 2009
Milestones								
Decision Points	1Q-4Q	1Q-4Q	1Q-4	łQ	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q
I								

Project: 3012 GMD Dev & Test Bed Upgrades

		Date						
MDA Exhibit R-2A RDT&E Project Justification]	February 20	004				
APPROPRIATION/BUDGET ACTIVITY	R-	1 NOMENCLA	TURE					
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P) 00	03882C Ballis	stic Missile	Defense Mi	dcourse De	fense Segn	ent	
COST (\$ in Thousands)	FY 200	3 FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development		0 1,587,089	2,331,881	2,131,180	2,113,342	0	0	
RDT&E Articles Qty		0 16	6	32	38	36	17	

Note: This Budget Project was previously captured in Project 3012 in FY 2003.

A. Mission Description and Budget Item Justification

The Ground-Based Midcourse (GMD) segment of the Ballistic Missile Defense System (BMDS) is a key component of the Initial Defensive Capability (IDC) and all future BMDS Blocks being fielded by MDA. It consists of ground-based interceptors, sensors, and fire control systems fielded in multiple locations. The GMD employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies. The goals of the BMDS are (1) to complete, verify, and test the BMDS; (2) to place an operational capability on alert by September 30, 2004; (3) to enhance these fielded capabilities when appropriate; and (4) to perform concurrent operations and testing of a BMDS. The elements being developed and fielded for the Midcourse segment will comprise most of the critical components in meeting these goals in the near-term. Project 0808 provides the development for the GMD hardware and software components for the BMDS. This development consists of a series of block development efforts.

GMD system capability is measured by Engagement Sequence Groups (ESG) which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the GMD system within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the GMD GBI against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems become available. Block 2004 includes six BMDS ESGs (Engage on AEGIS, Launch on AEGIS, Engage on Cobra Dane, Engage on UEWRs (Beale and Fylingdales), and Engage on Sea-Based X-Band radar. These are the focus of IDC. Block 2006 incorporates two additional BMDS ESGs (Engage on UEWR (Thule) and Launch on DSP/SBIRS). Block 2008 incorporates three additional BMDS ESGs (Engage on Forward-Based X-Band Radar (FBX), Launch/Engage on EO/IR, and Launch/Engage on THAAD). ESGs are embedded into GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI surveillance testing; Advanced Discrimination Initiatives, EKV and GMD fire control upgrades; and sea launched GBIs enable improvements to all ESGs and increase warfighter confidence.

The capability blocks of the GMD portion of the BMDS are defined as follows:

Block 2004 (contained in Projects 3011, 0708, 3012, and 0808) consists of the early development of the initial GMD hardware and software components of the BMDS IDC and Test Bed. This includes the development of the ground-based interceptor, specifically the booster and EKV; X-Band radar technologies, including the GBR-P; fire control and communications technologies, including the In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs); test range resources; and future fielding planning.

Block 2006 (contained in Projects 3012 and 0808) consists of the continuing development and fielding of capabilities to detect, track, intercept, and defeat ballistic missile threats. Block 2006 also includes the next increment of fielded capability with additional interceptors (up to 20), UEWRs, IDTs, and planning for a third interceptor site. Block 2006 also includes continuing development and evolution of the wide range of software supporting the IDC and assessment, test, and evaluation of alternative GBI basing options. A basing concept under study examines the option of mounting GBIs on a sea-based relocatable platform to enhance responsiveness to emerging threats.

Block 2008 (Project 0908) development efforts are currently focused on sustaining engineering and spiral upgrades to the components of the GMD segment of the BMDS and integrated flight test of GBI components. This development effort will mature key technologies in logical stages to provide an enhanced and more robust BMDS Test Bed (using operationally representative hardware and software vice developmental hardware and software), and a continuing program to develop and demonstrate a wide range of "Hit-to-Kill" technologies.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

The GMD Block 2004/2006 development program provides an integrated development and test program of more capable interceptors (both boost and kill vehicles), targets, sensors, battle management technologies, and GMD Fire Control and Communications systems and infrastructure. Specifically, the Project 0808 provides the following:

- The GMD is developing boosters from two vendors to support the IDC. This risk reduction initiative will help ensure that reliable components are readily available for future fielding and testing requirements. Because of the dual booster development initiative, significant delays and turbulence to the IDC and test programs were avoided when the provider of the upper stage (CSD) for the BV+ booster (Lockheed) suffered significant damage to their propellant mixer in an explosion. Near-term booster acquisitions were shifted to the other booster supplier (OSC) avoiding delays to the IDC and flight test program. The Orbital (OSC) Boost Vehicle (OBV) and the BV+ will be the launch vehicles for the Exo-atmospheric Kill Vehicle (EKV). Both boosters are in development with booster verification flight tests planned in FY 2004.
- The EKV is a "Hit-to-Kill" payload designed to acquire, discriminate, track, and intercept targets in the midcourse phase of flight. The key components and technologies of the EKV include the acquisition and tracking sensors, the on-board maneuvering system, and the on-board vehicle C3 systems. Component development is on going and is demonstrated as part of the block improvement process in the Integrated Flight Test program.
- The sensor development program is a mix of enhancements to existing radar assets and development of new radar capabilities. The program will continue the software upgrades to the Early Warning Radars at Beale and Fylingdales, and the Cobra Dane radar at Shemya. The program continues planning for potential upgrades to other Early Warning Radar (EWR) sites. The key elements of the upgrades are the software builds to improve the effectiveness of the radars. A broad range of X-Band Radar (XBR) technologies will continue in development to support the SBX. The Ground Based Radar Prototype (GBR-P) located at the Ronald Reagan Test Site (RTS), at Kwajalein, is being used as part of the Integrated Flight Test program, and serves as a demonstration platform for these evolving radar technologies.
- The GMD Fire Control and Communications component is an integrated communications network of nodes, to enable the GMD element to function as part of the BMDS. This includes:
- -- Various communications links (e.g., CONUS ring, Alaska leased lines and Satellite Communications (SATCOM) to Shemya, Fort Greely, and In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs).
- -- GMD Fire Control and Communications Nodes [Fort Greely and Joint National Integration Center (JNIC) with remote operator workstations at Cheyenne Mountain Operations Center (CMOC)]
- -- In-Flight Interceptor Communications System Data Terminal (IDTs) at various locations.

These FC&C development initiatives continue on these technologies and components meeting future block capability requirements. This effort will be developed as part of the BMDS overarching BMC/C2 architecture.

- One of the most significant activities supported by this project is the component and systems level testing. The integrated flight and ground tests; the component level developmental testing; modeling and simulation; and the Verification, Validation, and Accreditation testing are critical to the successful fielding of all IDC components. The GMD test program is designed to demonstrate a broad range of GMD component development efforts. These incremental capabilities include multiple launches against multiple threat targets as the block capabilities mature. These components under test include boosters, EKVs, launch infrastructure, sensors, and interfaces with other BMDS elements. Additionally, the test program will incorporate Aegis Weapon System (AWS) radars to support GMD integrated flight test program. The test regimen will significantly expand to include operational interceptors both for ground and flight testing. These will subsequently to replaced with new interceptors from the ongoing production line to ensure the most technically capable GBI inventory while ensuring backward compatibility to the maximum extent possible. This rotable pool of GBI assets provides GMD the capability to maintain youngest average age for interceptors on alert. GMD will continuously evaluate the capabilities of available interceptors through this inventory surveillance program to be initiated in FY06 to ensure that the newest, most technologically capable missiles are on Alert. Older GBIs will be used for the Integrated Flight Test Program (up to 3 IFTs per year) to verify/validate maturing component capability improvements.
- Software is another key area of development supporting the BMDS. Software development supports the Upgraded Early Warning radars, the X-Band radars, the IDTs, EKV on-board processing and interfaces, the GBI systems interfaces, system-wide communications interfaces and nodes, and fire control. This software must support not only the operational BMDS but also the systems-wide testing during ground and flight tests.
- Planning continues to provide a capability to respond to additional future fielding orders in the shortest time possible. This includes site surveys and activation planning, silo design and planning, facility planning, environmental impact studies and assessments, logistics planning, and operational procedures.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	le Defense Midcourse Defense Segment

B. Accomplishments/Planned Program			
	FY 2003	FY 2004	FY 2005
Ground Based Interceptor (GBI)		483,253	457,493
RDT&E Articles (Quantity)		8	1

DISCUSSION. The GBI development program funds the development of booster and EKV technologies. It also provides developmental assets for flight-testing. GMD has successfully demonstrated a hit-to-kill capability in five (5) separate flight tests.

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of 2 GBIs (includes both EKVs and boost vehicles) was initiated in FY 2002 for delivery in FY 2004. Acquisition of two (2) refurbished silos and two (2) command launch equipment at VAFB.

- Completes refurbishment of 2 silos and acquisition of command launch equipment (CLE) at VAFB for flight test and IDC fielding.
- Continues interceptor integration, ground/system tests, and Integrated Flight Tests.
- Continues modeling and simulation development.
- Continues common silo and common CLE development.
- Continues development of EKV technologies to improve system discrimination, performance, and producibility in the areas of on-board sensors and processors, software/algorithms, vehicle maneuvering, and C3 systems.

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of 1 Boost Vehicle initiated in FY 2003 for delivery in FY 2005.

- Continues Silo/GBI/launch systems ground testing, system level simulation, and Verification, Validation, and Accreditation activities.
- Continues interceptor, ground/system tests, and Integrated Flight Tests.
- Continues modeling and simulation development.
- Completes common silo and common CLE development.

	FY 2003	FY 2004	FY 2005
X Band Radar Technology Development		70,988	67,527
RDT&E Articles (Quantity)			1

DISCUSSION. X-Band radar technologies provide high-resolution tracking and discrimination data to the GMD fire control and subsequently the EKV thereby significantly enhancing the tracking and discrimination capabilities of the system. This effort develops highly sophisticated software algorithms to enhance target discrimination and material and component enhancements to improve power output and sensitivity. This technology forms the basis for the SBX.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	Date
MDA Exhibit R-2A RDT&E Project Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

FY 2004 Planned Accomplishments

- Continues to develop and field XBR Software Builds.
- Continues flight and ground test support.
- Continues operation and maintenance of GBR-P.
- Continues the planning, assessment and evaluation of future X- Band technologies, including technology insertion (Project Hercules).

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of XBR software build initiated in FY 2003 and delivered in FY 2005

- Continues to develop and field XBR Software Builds.
- Continues flight and ground test support.
- Supports a Radar Certification Flight (RCF).
- Continues operation and maintenance of GBR-P.
- Continues the planning, assessment and evaluation of future X- Band technologies, including technology insertion (Project Hercules).
- Initiates Primary Support Base development for future fielding options for the Sea-Based X-Band Radar.

	FY 2003	FY 2004	FY 2005
Upgraded Early Warning Radar (UEWR) Development		35,776	83,887
RDT&E Articles (Quantity)		3	1

DISCUSSION. Upgraded Early Warning Radars (UEWRs) are large, fixed, phased-array surveillance radars used to detect, track, and count individual targets early in their trajectory. UEWRs are also effective in cueing the higher resolution X-Band radars to the location and trajectory of incoming targets. The planned upgrades provide precise tracking early enough to significantly expand the battlespace for the ground-based interceptors. This program will provide for the development of enhanced EWR software.

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of two (2) UEWR software builds initiated in FY 2003 and delivered in FY 2004. Acquisition of Cobra Dane software build initiated in FY 2003 and delivered in FY 2004

- Continues flight and ground test support.
- Continues planning for potential future UEWR sites.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of XBR software build initiated in FY 2004 and delivered in FY 2005

- Continues flight and ground test support.
- Continues planning for potential future UEWR sites.
- Supports a radar certification flight.

	FY 2003	FY 2004	FY 2005
GMD Fire Control & Communications		217,668	218,654
RDT&E Articles (Quantity)		3	1

DISCUSSION. The GMD Fire Control and Communications (GFC/C) enables control and operation of the GMD Element as part of the BMDS. The communications component consists of (1) GMD Communications Network (GCN) and (2) the In-Flight Interceptor Communication Systems (IFICS).

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of GFC/C software build initiated in FY 2003 and delivered in FY 2004. Acquisition of Aegis EIS software build initiated in FY 2003 and delivered in FY 2004. Acquisition of Command Launch Equipment software build initiated in FY 2003 and delivered in FY 2004

- Continues flight and ground test support.
- Continues development and installation of ESI software builds.
- Continues development and installation of IFICS software builds.
- Initiates development and installation of Test Exercise software builds.
- Continues development and installation of GMD software builds.
- Continues the planning, assessment and evaluation of future GFC/C software and technologies enhancements.

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of GFC/C software build initiated in FY 2004 and delivered in FY 2005.

- Continues flight and ground test support.
- Continues development and installation of IFICS software builds.
- Initiates development and installation of Test Exercise software builds.
- Continues development and installation of GMD software builds.
- Continues the planning, assessment and evaluation of future GFC/C software and technologies enhancements.
- Continues software development upgrades begun in Project 0708.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

			Date	
MDA Exhibit R-2A RDT&E Project Justification			February 2004	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCL	ATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603882C Bal	listic Missile Defense Midco	urse Defense Segment
	FY	7 2003	FY 2004	FY 2005
Missile Defense Plan II (GBI)				528,348
RDT&E Articles (Quantity)				

DISCUSSION. The Ground-Based Interceptor consists of an Exo-atmospheric Kill Vehicle (EKV) and a Booster Vehicle. These Interceptors will enhance the BMDS capability against long and intermediate range ballistic missile attacks by adding twenty (20) interceptors at two sites.

FY 2005 Planned Accomplishments:

- Initiates acquisition of up to ten (10) additional EKVs for Fort Greely.
- Initiates acquisition of up to ten (10) additional boosters for Fort Greely.
- Initiates acquisition of ten (10) additional common silos for Fort Greely.
- Initiates acquisition of up to ten (10) boosters for a third site.
- Initiates acquisition of up to ten (10) EKVs for a third site.

	FY 2003	FY 2004	FY 2005
Missile Defense Plan II (UEWR and IDT)			22,385
RDT&E Articles (Quantity)			

DISCUSSION. The Thule UEWR will provide increased early warning capability for potential threat objects launched from north and east of CONUS as well as providing a backup capability to the Flyingdales UEWR. The processor (hardware and software) upgrades the GMD fire control access along with the associated GMD Communications Network (GCN) connectivity. They are planned for full implementation at Thule by FY 2007.

Two additional IDTs will be acquired to provide the capability to communicate with multiple interceptors from existing launch sites as well as planned launch sites. The IDTs will be located at Fort Greely and the third site, acquisition of these IDTs will begin in FY 2005.

FY 2005 Planned Accomplishments:

- Initiates acquisition of long lead UEWR hardware items.
- Initiates planning / design / environmental process for UEWR HW/SW installation.
- Initiates acquisition of an IDT at Fort Greely.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

				Date		
MDA Exhibit R-2A RDT&E Project Justi	fication			February 2004		
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCL	LATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603882C Bal	listic Missil	e Defense Midcou	rse Defense Segment	
	FY	2003	F	FY 2004	FY 2005	
Missile Defense Plan II (RDT&E Construction)					4	40,267
RDT&E Articles (Quantity)						
DISCUSSION This GMD RDT&F Construction request is further justified in the accomp	anving DD-1391	Exhibits RDT&E.0	Construction D	ata		

FY 2005 Planned Accomplishments:

- Initiates construction of 10 additional common silos and supporting facilities at Fort Greely.
- Initiates construction of an IDT at Fort Greely.
- Initiates and completes site facility designs for the Thule UEWR.
- Initiates site / facility designs for a future additional fielding site.

	FIX 2002	FIX 2004	EW 2005
	FY 2003	FY 2004	FY 2005
Element Engineering & Integration		175,969	181,632
RDT&E Articles (Quantity)			

DISCUSSION. GMD Element Engineering provides engineering and analysis support for building and integrating the functional components of the GMD segment of the BMDS. Defines elementlevel test requirements and objectives and develops element-level assessments and capability-based requirements. Provides engineering, integration, and operations planning supporting the BMDS. Continues the integration of component/element systems and sustains the planning effort for future fielding options. Continues to complement the BMDS systems engineering capability by providing detailed insight and analysis into component technical and design-specific issues.

FY 2004 Planned Accomplishments:

- Completes IP-4 Integrated Technical Review (ITR).
- Completes Block 2006 (IP-5) Integrated Design Review (IDR).
- Continues software management and specialty engineering.
- Continues software verification and validation.
- Continues modeling and simulation development.
- Continues system analyses, integration, and verification.
- Supports integrated ground tests and specialty testing.
- Conducts pre- and post-flight test analyses.

FY 2005 Planned Accomplishments:

- Completes Block 2006 (IP-5) Integrated Technical Review (ITR).
- Continues software management and specialty engineering.
- Continues software verification and validation.
- Continues modeling and simulation development.
- Continues system analyses, integration, and verification.
- Supports integrated ground tests and specialty testing.
- · Conducts pre- and post-flight test analyses.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

MDA Exhibit D 24 DDT & Ducient Luct	ification		Date February 2004	
MDA Exhibit R-2A RDT&E Project Just	шсаноп		rebruary 2004	
APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE			LATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes	s (ACD&P)	0603882C Bal	llistic Missile Defense Midco	urse Defense Segment
	FY	7 2003	FY 2004	FY 2005
Element Test and Evaluation			200,517	186,862
RDT&E Articles (Quantity)			2	2
DISCUSSION CMD T + 1E 1 + 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 4 4 C 114	1		101 1 1 1 1 1

DISCUSSION. GMD Test and Evaluation utilizes a comprehensive infrastructure of ground-test facilities, ranges, sensors and instrumentation resources providing critical risk reduction and measurement of system performance for all GMD element components. This infrastructure allows the element engineers to successfully model and simulate test results into projections of future system performance. The GMD Combined Test Force, under a single unified organization, integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, minimizes the duplication of test resources and the time required to execute required testing, and supports BMDS level test and evaluation.

FY 2004 Planned Accomplishments:

RDT&E Test Articles: Acquisition of 2 targets initiated in FY 2002 for delivery in FY 2004.

- Continues operation and maintenance of System Test Lab, Prime Contractor Integration Laboratory (PCIL), and Integrated Systems Test Center 2 (ISTC-2).
- Continues planning activities for implementing ISTC-1.
- Continues ground and flight test planning, design, and scheduling.
- Conducts Integrated Flight Tests.
- Performs pre- and post-test analyses.
- Performs analyses to define target requirements.
- Establishes Element Test Objectives.

FY 2005 Planned Accomplishments:

RDT&E Test Articles: Acquisition of 2 targets initiated in FY 2003 for delivery in FY 2005.

- Continues operation and maintenance of System Test Lab, PCIL, and ISTC-2.
- Completes installation and implementation of ISTC-1.
- Continues ground and flight test planning, design, and scheduling.
- Conducts Integrated Ground Test (IGT) (development).
- Conducts Distributed Ground Test (DGT).
- Conducts Integrated Flight Tests.
- Performs pre- and post-test analyses.
- Performs analyses to define target requirements.
- Establishes Element Test Objectives.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

MDA Exhibit R-2A RDT&E Project Just	ification		Date February 2004		
APPROPRIATION/BUDGET ACTIVITY R-1		R-1 NOMENCI	LATURE		
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		0603882C Bal	listic Missile Defense Midco	urse Defense Segme	nt
	FY	2003	FY 2004	FY 2005	
Program Planning and Management			131,106		131,007
RDT&E Articles (Quantity)					

DISCUSSION.

FY 2004 Planned Accomplishments:

- Provides government program office staff and infrastructure for the management of the GMD Program.
- Provides technical and business management expertise to support GMD Joint Program Office (JPO) tasks and activities, financial management, including cost and schedule performance assessments, configuration management, and integration planning activities.
- Provides requirements clarification and verification of H/W and S/W development including management of IV&V activities, test and evaluation planning and execution.
- Continues program management, subcontract management, quality assurance, and technical and testing oversight.

FY 2005 Planned Accomplishments:

- Provides government program office staff and infrastructure for the management of the GMD Program.
- Provides technical and business management expertise to support GMD Joint Program Office (JPO) tasks and activities, financial management, including cost and schedule performance assessments, configuration management, and integration planning activities.
- Provides requirements clarification and verification of H/W and S/W development including management of IV&V activities, test and evaluation planning and execution.
- Continues program management, subcontract management, quality assurance, and technical and testing oversight.

	FY 2003	FY 2004	FY 2005
Logistics Planning, Production and Protection		234,904	272,610
RDT&E Articles (Quantity)			

DISCUSSION. GFX represents the materiel and services provided to the prime contractor in support of the GMD development and test efforts. It includes Government Furnished Equipment (GFE), Information (GFI), Facilities (GFF), and Services (GFS) (including communication leases).

FY 2004 Planned Accomplishments:

- Continues to coordinate, procure, and provide GFX (over 700 line items) to the prime contractor to support IDC/ Test Bed activation and GMD test program.
- Continues to provide management efforts to activate a logistics support system to include IDC/ Test Bed site support activation and validation, logistical support requirements, and IDC/ Test Bed readiness reviews.
- Continues to provide comprehensive on-site logistics support to the Site Activation Command (SAC) Alaska and other IDC/ Test Bed sites as required.
- Conducts quality assurance planning and implementation.
- Continues to provide functional support for production, quality, configuration and change management.
- Conducts sustainment, fielding, siting, and facility planning.
- Continues to provide program protection to the Test Bed including physical security.
- Conducts reliability and maintainability analyses.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2005 Planned Accomplishments:

- Continues to coordinate, procure, and provide GFX (over 700 line items) to the prime contractor to support Test Bed activation and GMD test program.
- Continues to provide management efforts to activate a logistics support system to include IDC/ Test Bed site support activations and validation, logistical support requirements, and IDC/ Test Bed readiness reviews.
- Continues to provide comprehensive on-site logistics support to the Site Activation Command (SAC) Alaska and other IDC/ Test Bed sites as required.
- Continues to provide functional support for production, quality, configuration and change management.
- Conducts sustainment, fielding, siting, and facility planning.
- Continues to provide program protection including physical security.
- Conducts reliability and maintainability analyses.

	FY 2003	EV 2004	EV 2005
	F I 2005	FY 2004	FY 2005
Site Activation		36,908	36,459
RDT&E Articles (Quantity)			

DISCUSSION. This effort provides a broad range of site design and layout, facility requirements, and environmental management activities.

FY 2004 Planned Accomplishments:

- Initiates Planning and Design of an additional facility at the Von Braun Complex located at the Redstone Arsenal to consolidate MDA personnel and activities currently located in a number of dispersed locations. Construction was planned to begin in FY 2006. Congressional add in FY 2004 has accelerated start of construction to FY 2004.
- Continues Block 2004 IDC/ Test Bed activation.
- Updates IDC/ Test Bed site activation plans.
- Continues siting, NEPA, and ESH analysis for Block 2004 IDC/ Test Bed.
- Completes siting and Joint Spectrum Center Electromagnetic Interference analysis for SBX.

FY 2005 Planned Accomplishments:

- Continues Planning and Design of an additional facility at the Von Braun Complex located at the Redstone Arsenal to consolidate MDA personnel and activities currently located in a number of dispersed locations, Construction was planned to begin in FY 2006. Congressional add in FY 2004 has accelerated start of construction to FY 2004.
- Continues IDC/ Test Bed support.
- Updates IDC/ Test Bed site activation plans.
- Continues siting, NEPA, and ESH analysis for Block 2004 IDC/ Test Bed.

	FY 2003	FY 2004	FY 2005
Contractor Logistics Support (CLS)			104,750
RDT&E Articles (Quantity)			

Discussion. This effort provides for Contractor Logistics Support (CLS) for the GMD program. CLS will provide a level-of-service consistent with established Engagement Sequence Groups (ESG). CLS will meet program support requirements by providing a flexible and robust support capability that emphasizes support of ESG assets.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2005 Planned Accomplishments:

- Establish contract for developing and gathering equipment logistics data.
- Complete logistics infrastructure and support concept initiated under Project 3011.
- Initiate CLS program for logistics support and maintenance of IDC.

C. Other Program Funding Summary

								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters – MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

MDA		Date February 2004								
					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost	
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,5	99 1,717,480	2,196,531	2,449,322	Continuing	Continuing	
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,4	76 656,152	654,015	688,119	Continuing	Continuing	
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,0	49 445,971	456,339	469,621	Continuing	Continuing	

D. Acquisition Strategy

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has restructured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy is to build the initial GMD parts of the BMDS Test Bed NLT 4th Quarter FY 2004 as an early BMDS Test Bed and deliver capability block upgrades as early as practical. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

MDA Exhibit R-3 RDT&E Project Cost Analysis							Date February 2004				
APPROPRIATION/BUDGET AC	R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment										
RDT&E, DW/04 Advanced (evelopment and P	rototypes (A	CD&P)	0603882C I	Ballistic Mis	sile Defense	e Midcourse D	efense Segi	ment	
I. Product Development Cost (\$ in	Contract	Performing	Total		FY 2004		FY 2005			Target	
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of	
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract	
Ground Based Interceptor (GBI)	31							r			
1 , , ,		Boeing/									
Ground Based Interceptor (GBI)	SS/CPAF	Various	0	456,985	1/2Q	432,538	1/2Q	CONT.	889,523	CONT	
X Band Radar Technology Development											
X Band Radar Technology Development	SS/CPAF	Boeing/ Various	0	69,723	1/2Q	66,262	1/2Q	CONT.	135,985	CONT	
Upgraded Early Warning Radar (UEWR) Development											
Upgraded Early Warning Radar	SS/CPAF	Boeing/	0	0.222	1/40	57.774	1/40	CONT	65.007	CONT	
(UEWR) Development GMD Fire Control &	SS/CPAF	Various	0	8,223	1/4Q	57,774	1/4Q	CONT.	65,997	CONT.	
Communications											
Fire Control & Communications	SS/CPAF	Boeing/ Various	0	200,460	2Q	202,305	2Q	CONT.	402,765	CONT	
Missile Defense Plan II (GBI)	SS/CITH	various	0	200,400	20	202,303	20	COIVI.	402,703	CONT	
Missic Bereise Han H (GBI)		Boeing/									
GBI`s & Silos	SS/CPAF	Various				528,348	1Q		528,348		
Missile Defense Plan II (UEWR and IDT)							-				
		Boeing/									
UEWR & IDT	SS/CPAF	Various				22,385	1Q		22,385		
Element Engineering & Integration											
		Boeing/									
Systems Engineering & Integration	SS/CPAF	Various	0	137,083	1/2Q	144,691	1/2Q	CONT.	281,774	CONT.	
Element Test and Evaluation											
	99/97/7	Boeing/		40.4		10.15-	4 (0.5	gav-	0.0 4.7	aa	
	SS/CPAF	Various	0	49,296	1/2Q	43,175	1/2Q	CONT.	92,471	CONT.	

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exhi	ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET ACTIVITY					R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Logistics Planning, Production and Protection										
Logistics Planning, Production and Protection	SS/CPAF	Boeing/ Various	0	16,100	1/2Q	16,300	1/2Q	CONT.	32,400	CONT.
Subtotal Product Development			0	937,870		1,513,778		0	2451648	

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

II. Support Costs Cost (\$ in Thousands)

II. Support Costs Cost (\$ III Thou									1	
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Ground Based Interceptor (GBI)										
		Davidson/								
	SS/FP	AL	0	1,192	1/2Q	1,192	1/2Q	CONT.	2,384	CONT
		Mevatec/								
	SS/FP	AL	0	7,894	1/2Q	7,894	1/2Q	CONT.	15,788	CONT
		TSI/								
	SS/FP	AL	0	7,449	1/2Q	6,136	1/2Q	CONT.	13,585	CON
		Sparta/								
	C/CPFF	AL	0	1,394	1/2Q	1,394	1/2Q	CONT.	2,788	CONT
		AMCOM/								
	MIPR	AL	0	354	1/2Q	354	1/2Q	CONT.	708	CONT
		USASMDC/								
	MIPR	AL	0	391	1/2Q	391	1/2Q	CONT.	782	CONT
		DOT/ITOP/								
	MIPR	AL	0	231	1/2Q	231	1/2Q	CONT.	462	CONT
		Mitre/								
	MIPR	DC	0	291	1/2Q	291	1/2Q	CONT.	582	CONT

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exhi	ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa i	ry 2004				
APPROPRIATION/BUDGET AC	CTIVITY	•			R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced (Component I	Development and Pr	ototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
	MIPR	Misc/ Various	0	100	1/2Q	125	1/2Q	CONT.	225	CONT.		
	Various	Misc/ Various	0	174	1/2Q	149	1/2Q	CONT.	323	CONT.		
	SS/FP	CSC/ AL	0	6,798	1/2Q	6,798	1/2Q	CONT.	13,596	CONT.		
Upgraded Early Warning Radar (UEWR) Development												
	SS/CPAF	Ga. Tech	0	1,220	1/2Q	1,220	1/2Q	CONT.	2,440	CONT.		
	C/CPFF	Xontech	0	780	1/2Q	780	1/2Q	CONT.	1,560	CONT.		
	C/FP	Mevatec	0	9,487	1/2Q	8,769	1/2Q	CONT.	18,256	CONT.		
	MIPR	AMCOM	0	1,620	1/2Q	1,620	1/2Q	CONT.	3,240	CONT.		
Missile Defense Plan II (RDT&E Construction)												
Facilities Construction	MIPR	COE/ AK				40,267	1Q		40,267			
Element Engineering & Integration												
	MIPR	TSC/SMDC/ AL	0	1,000	1/2Q	1,000	1/2Q	CONT.	2,000	CONT.		
	MIPR	NSWC/ Dahlgren, VA	0	4,125	1/2Q	4,125	1/2Q	CONT.	8,250	CONT.		
	MIPR	DTRA/ Dulles, VA	0	1,000	1/2Q	1,000	1/2Q	CONT.	2,000	CONT.		
	MIPR	NAIC/ Wright Patterson, AFB	0	700	1/2Q	700	1/2Q	CONT.	1,400	CONT.		
	MIPR	SBIRS SPO/ LA AFB, CA	0	1,800	1/2Q	1,800	1/2Q	CONT.	3,600	CONT.		
	MIPR	DTD/GMD/ Huntsville, AL	0	1,870	1/2Q	1,870	1/2Q	CONT.	3,740	CONT.		

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exh	ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa i	ry 2004				
APPROPRIATION/BUDGET A	CTIVITY				R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced	Component I	Development and Pr	ototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
Cost Categories.	ж турс	GME Engineering Analysis/	Cost	Cost	Date	Cost	Date	Сотрысс	Cost	Contract		
	MIPR	Huntsville, AL	0	1,980	1/2Q	1,980	1/2Q	CONT.	3,960	CONT.		
		GMD Studies & Analysis/										
	MIPR	Huntsville, AL	0	1,700	1/2Q	1,700	1/2Q	CONT.	3,400	CONT.		
	SS/CPFF	CSC/ Arlington, VA	0	17,688	1/2Q	15,743	1/2Q	CONT.	33,431	CONT.		
	MIPR	MIT Lincoln Labs/ Cambridge, MA	0	815	1/2Q	815	1/2Q	CONT.	1,630	CONT.		
	MIPR	Photon Labs/ Arlington, VA	0	700	1/2Q	700	1/2Q	CONT.	1,400	CONT.		
	SS/CPAF	IDA/ Arlington, VA	0	250	1/2Q	250	1/2Q	CONT.	500	CONT.		
	C/CPAF	Miltec/ Huntsville, AL	0	600	1/2Q	600	1/2Q	CONT.	1,200	CONT.		
	MIPR	JNIC/ Colorado Springs, CO	0	4,658	1/2Q	4,658	1/2Q	CONT.	9,316	CONT.		
Program Planning and Management												
SPT DC	C/CPAF	CSC/ DC	0	94,757	1Q	90,254	1Q	CONT.	185,011	CONT.		
SPT HSV	C/CPAF	CSC/ AL	0	20,194	1/4Q	25,406	1/4Q	CONT.	45,600	CONT.		
TRADOC System Manager	MIPR	SMDC/ AL	0	16,155	1/4Q	15,347	1/4Q	CONT.	31,502	CONT.		
Logistics Planning, Production and Protection												
	C/CPFF	CSC/ AL	0	1,072	3Q	1,072	3Q	CONT.	2,144	CONT.		

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exh	ibit R-3 RDT&E Proje	ect Cost Ana	lysis			Date Februa i	ry 2004				
APPROPRIATION/BUDGET AG					R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced (Component l	Development and Pro	ototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract	Performing	Total		FY 2004		FY 2005			Target		
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
		L3 Communications/										
	C/CPFF	AL	0	2,584	3Q	2,584	3Q	CONT.	5,168	CONT.		
		Mevatech/										
	C/CPFF	AL	0	902	3Q	902	3Q	CONT.	1,804	CONT.		
		TSI/										
	C/CPFF	AL	0	910	3Q	910	3Q	CONT.	1,820	CONT.		
	C/CPFF	MSAIC	0	96	3Q	96	3Q	CONT.	192	CONT.		
		AMCOM/										
	MIPR	IMMC	0	1,625	3Q	1,625	3Q	CONT.	3,250	CONT.		
		AMCOM/										
	MIPR	OGA	0	3,618	3Q	3,618	3Q	CONT.	7,236	CONT.		
		Mevatech/										
	C/CPFF	AL	0	1,201	3Q	1,201	3Q	CONT.	2,402	CONT.		
	C/CPFF	SY Tech	0	3,349	3Q	3,349	3Q	CONT.	6,698	CONT.		
	1 11100	Colsa/	0		20		20	CONT	120	CONT		
	MIPR	AL	0	65	3Q	65	3Q	CONT.	130	CONT.		
	1 11100	COE/	0	41.105	20	25.455	20	CONT	65 640	CONT		
	MIPR	VA	0	41,187	3Q	26,455	3Q	CONT.	67,642	CONT.		
	MDD	DTRA/	0	27.5	20	27.5	20	CONT	550	CONT		
	MIPR	VA	0	275	3Q	275	3Q	CONT.	550	CONT.		
	MIDD	NSA/ AL	0		20		20	CONT	12	CONT		
	MIPR	USACE/	0	6	3Q	6	3Q	CONT.	12	CONT.		
	MIPR	AL	0	5,353	3Q	5,353	3Q	CONT.	10,706	CONT.		
	MIPK	USASMDC/	U	3,333	30	3,333	3Q	CON1.	10,706	CON1.		
	MIPR	AL	0	500	3Q	500	3Q	CONT.	1,000	CONT.		
	MIPR	USASMDC	0	609	3Q 3Q	609	3Q 3Q	CONT.	1,000	CONT.		
	MIPR	Schriever AFB	0	400	3Q 3Q	400	3Q 3Q	CONT.	800	CONT.		
	MIPR	NSA	0	21	3Q 3Q	21	3Q 3Q	CONT.	42	CONT.		
	MIPR	Schriever AFB	0	59	3Q 3Q	59	3Q 3Q	CONT.	118	CONT.		
	MILLY	Schlievel AFD	U	39	30	39	υŲ	CONT.	110	CONT.		

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exh	iibit R-3 RDT&E Proje	ect Cost Ana	lysis			Date Februa i	ry 2004				
APPROPRIATION/BUDGET A	CTIVITY				R-1 NOMEN	ICLATURE						
RDT&E, DW/04 Advanced	Component l	Development and Pro	ototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract	Performing	Total		FY 2004		FY 2005			Target		
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
	MIPR	CST	0	150	3Q	150	3Q	CONT.	300	CONT.		
		USASMDC/										
	MIPR	AL	0	1,376	3Q	1,376	3Q	CONT.	2,752	CONT.		
		Various	0	2,354	2Q	2,236	2Q	CONT.	4,590	CONT.		
		AMRDEC/										
Production	MIPR	AL	0	4,028	2Q	3,948	2Q	CONT.	7,976	CONT.		
		Various/										
	CPFF	AL	0	2,664	2Q	2,410	2Q	CONT.	5,074	CONT.		
		USASMDC/										
Base Support and Real Property	MIPR	AL	0	144,400	1Q	197,090	1Q	CONT.	341,490	CONT.		
Site Activation												
	a (appp	CSC/		2.240		2 2 2 2	•	G0.177	4 400	G01 m		
	C/CPFF	AL	0	2,349	2Q	2,350	2Q	CONT.	4,699	CONT.		
	MIPR	Various	0	3,104	2Q	3,104	2Q	CONT.	6,208	CONT.		
) (IDD	USACE/	0	0.661	20	2 ((1	20	CONT	7.222	CONTE		
	MIPR	Huntsville, AL	0	3,661	2Q	3,661	2Q	CONT.	7,322	CONT.		
	C/CDEE	CSC/ AL	0	2 420	20	007	20	CONT	2 407	CONT		
	C/CPFF	L3 Communications/	0	2,420	2Q	987	2Q	CONT.	3,407	CONT.		
	C/CPFF	AL AL	0	1,499	20	946	20	CONT.	2,445	CONT.		
	C/CFFF	U.S. Army War	0	1,499	2Q	940	2Q	CONT.	2,443	CONT.		
		College/										
	MIPR	PA	0	1,207	2Q	874	2Q	CONT.	2,081	CONT.		
	1	Various	0	2,119	2Q	789	2Q	CONT.	2,908	CONT.		
		Mevatech/		<u> </u>					·			
	C/CPFF	AL	0	822	2Q	822	2Q	CONT.	1,644	CONT.		
		Nichols/										
	C/CPFF	AL	0	1,573	2Q	751	2Q	CONT.	2,324	CONT.		
		CSC/										
	C/CPFF	AL	0	4,808	2Q	7,086	2Q	CONT.	11,894	CONT.		
					1				· ·			

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Evh	ibit R-3 RDT&E Proj	ect Cost Ana	lveic			Date Februa i	rv 2004		
APPROPRIATION/BUDGET A RDT&E, DW/04 Advanced	CTIVITY	Ť			R-1 NOMEN			e Midcourse D	efense Seg	nent
TET CEL, E VIVO I ITA VARICEA	Contract	Performing	Total	(D W I)	FY 2004	erense seg.				
	Method	Activity &	PYs	FY 2004	Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of
Cook Cokooniin		Location		Cost					Cost	
Cost Categories:	& Type		Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
	G/GDEE	Colsa/	0	201	20	201	20	CONT	602	CONT
	C/CPFF	AL	0	301	2Q	301	2Q	CONT.	602	CONT.
		USACE/								
	MIPR	Huntsville, AL	0	2,019	2Q	1,337	2Q	CONT.	3,356	CONT.
		CSC/								
C/CPFF AL 0 610						610	2Q	CONT.	1,220	CONT.
		L3 Communications/								
	CPFF	AL	0	1,377	2Q	854	2Q	CONT.	2,231	CONT.
		USASMDC/								
	MIPR	AL	0	4,244	2Q	3,524	2Q	CONT.	7,768	CONT.
		USARAK/				·				
	MIPR	AK	0	3,813	2Q	7,481	2Q	CONT.	11,294	CONT.
	1	Various	0	982	-	982	2Q	CONT.	1,964	CONT.
Contractor Logistics Support (CLS)									<i>y</i>	
		Boeing/								
	SS/CPAF	AK	0	0		104,750	1/2Q	CONT.	104,750	CONT.
Subtotal Support Costs			0	465,079		643,078		0	1108157	
Remarks	1	1			1			<u> </u>	l	

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

III. Test and Evaluation Cost (\$ in Thousands)

111. I est and Evaluation Cost (\$1)	ii i iiousuiius j									
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Element Test and Evaluation										
		Colsa/								
Combined Test Force	C/CPAF	AL	0	6,021	1/2Q	6,022	1/2Q	CONT.	12,043	CONT.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exhi	ibit R-3 RDT&E Pro	ject Cost Ana	lysis			Date Februa i	ry 2004				
APPROPRIATION/BUDGET A	CTIVITY				R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced	Component I	Development and P	rototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
	C/CPIF	ASGI/ AL	0	406	1/2Q	406	1/2Q	CONT.	812	CONT.		
	SS/CPAF	Boeing/ Various	0	1,800	1/2Q	1,800	1/2Q	CONT.	3,600	CONT.		
	MIPR	Kirtland AFB/ NM USAKA/	0	180	1/2Q	180	1/2Q	CONT.	360	CONT.		
	MIPR	AK Sandia/	0	18,061	1/2Q	18,061	1/2Q	CONT.	36,122	CONT.		
	MIPR	NM	0	100	1/2Q	100	1/2Q	CONT.	200	CONT.		
	MIPR	USASMDC/ AL	0	2,465	1/2Q	2,465	1/2Q	CONT.	4,930	CONT.		
	C/TM	JNTF/ CO	0	1,489	1/2Q	1,489	1/2Q	CONT.	2,978	CONT.		
	MIPR	Nichols/ AL	0	895	1/2Q	895	1/2Q	CONT.	1,790	CONT.		
	C/TM	Mevatech/ AL	0	4,329	1/2Q	4,329	1/2Q	CONT.	8,658	CONT.		
	C/TM	CSC/ AL	0	1,781	1/2Q	1,781	1/2Q	CONT.	3,562	CONT.		
	C/CPIF	Aeromet/ Various	0	922	1/2Q	922	1/2Q	CONT.	1,844	CONT.		
	MIPR	SBIRS SPO	0	488	1/2Q	488	1/2Q	CONT.	976	CONT.		
	MIPR	AMCOM/ AL	0	1,382	1/2Q	1,382	1/2Q	CONT.	2,764	CONT.		
	MIPR	USARSPACE/ AL	0	110	1/2Q	110	1/2Q	CONT.	220	CONT.		
	MIPR	Eglin AAFB/ FL	0	120	1/2Q	120	1/2Q	CONT.	240	CONT.		

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

R-1 NOMENCLATURE RDT&E, DW/04 Advanced Component and Prototypes (ACD&P) R-1 NOMENCLATURE RDT&E, DW/04 Advanced Component and Prototypes (ACD&P) R603882C Ballistic Missile Defense Midcourse Defense Segment R-1 NOMENCLATURE RDT&E, DW/04 Advanced Component Activity & PYs Prototypes (ACD&P) Prototypes (ACD&P) Prototypes (ACD&P) Prototypes (ACD&P) RT 2005 Award Prototypes (ACD&P) Award Prototypes (ACD&P) Prototypes (A		MDA Exh	ibit R-3 RDT&E Proj	iect Cost Ana	lvsis			Date Februa	ry 2004				
Contract Performing Method Activity & PYs PY 2004 Award PY 2005 Award Cost to Total Value of Cost Categories: Peterson ArB/ Cost		ACTIVITY				R-1 NOMENCLATURE							
Method & Activity & PYs FY 2004 Award PY 2005 Award Cost Total Value of Cost Categories: Award & Cost	RDT&E, DW/04 Advanced	l Component I	Development and Pr	rototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
Cost Categories:		Contract	Performing	Total		FY 2004		FY 2005			Target		
Peterson AFB/ CO		Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of		
MIPR CO 0 278 1/2Q 278 1/2Q CONT. 556 CONT. OGA's/ MIPR Various 0 488 1/2Q 488 1/2Q CONT. 976 CONT. CPFF Various 0 2,455 1/2Q 2,455 1/2Q CONT. 4,910 CONT. CAS/ CTM Various 0 880 1/2Q 880 1/2Q CONT. 1,760 CONT. MIT LLNL/ MIPR MA 0 3,955 1/2Q 3,955 1/2Q CONT. 7,910 CONT. CCPFF Various 0 1,984 1/2Q 1,984 1/2Q CONT. 3,968 CONT. MIPR TN 0 20 1/2Q 20 1/2Q CONT. 40 CONT. MIPR NM 0 2,853 1/2Q 2,853 1/2Q CONT. 5,706 CONT. MIPR NM 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT. MIPR MA 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT. MIPR MA 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT. MIPR MA 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT. MIPR AL 0 74 1/2Q 74 1/2Q CONT. 1,608 CONT. Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. TSI/ Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. CCPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT. CCPFF AL 0 336 1/2Q 336 1/2Q CONT. 4,724 CONT. CCPFF AL 0 336 1/2Q 336 1/2Q CONT. 4,724 CONT.	Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
MIPR													
MIPR		MIPR		0	278	1/2Q	278	1/2Q	CONT.	556	CONT.		
CPFF													
CPFF		MIPR	Various	0	488	1/2Q	488	1/2Q	CONT.	976	CONT.		
C/TM Various 0 880 1/2Q 880 1/2Q CONT. 1,760 CONT MIT LLNL/ MIPR MA 0 3,955 1/2Q 3,955 1/2Q CONT. 7,910 CONT C/CPFF Various 0 1,984 1/2Q 1,984 1/2Q CONT. 3,968 CONT MIPR TN 0 20 1/2Q 20 1/2Q CONT. 40 CONT Sandia/ MIPR NM 0 2,853 1/2Q 2,853 1/2Q CONT. 5,706 CONT Mevatech/ C/Other AL 0 80 1/2Q 80 1/2Q CONT. 160 CONT HAFB/ MIPR MA 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT SMDC/ MIPR AL 0 74 1/2Q 74 1/2Q CONT. 148 CONT TSI/ Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 4,724 CONT C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 4,724 CONT SLAD/			IEC Electronics/										
C/TM		CPFF		0	2,455	1/2Q	2,455	1/2Q	CONT.	4,910	CONT.		
MIPR MA													
MIPR MA 0 3,955 1/2Q 3,955 1/2Q CONT. 7,910 CONT C/CPFF		C/TM		0	880	1/2Q	880	1/2Q	CONT.	1,760	CONT.		
C/CPFF													
C/CPFF Various 0 1,984 1/2Q 1,984 1/2Q CONT. 3,968 CONT.		MIPR		0	3,955	1/2Q	3,955	1/2Q	CONT.	7,910	CONT.		
MIPR TN 0 20 1/2Q 20 1/2Q CONT. 40 CONT.													
MIPR TN 0 20 1/2Q 20 1/2Q CONT. 40 CONT Sandia/		C/CPFF		0	1,984	1/2Q	1,984	1/2Q	CONT.	3,968	CONT.		
Sandia/ NM			AEDC/										
MIPR NM 0 2,853 1/2Q 2,853 1/2Q CONT. 5,706 CONT.		MIPR		0	20	1/2Q	20	1/2Q	CONT.	40	CONT.		
Mevatech/ AL 0 80 1/2Q 80 1/2Q CONT. 160 CONT HAFB/ MIPR MA 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT SMDC/ MIPR AL 0 74 1/2Q 74 1/2Q CONT. 148 CONT Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT VRC/ C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT Closa/ C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT SLAD/ SLAD/ SUMMER SUMER SUMMER SUMMER SUMMER SUMER SUMMER													
C/Other AL 0 80 1/2Q 80 1/2Q CONT. 160 CONT.		MIPR		0	2,853	1/2Q	2,853	1/2Q	CONT.	5,706	CONT.		
HAFB/ MA			Mevatech/										
MIPR MA 0 896 1/2Q 896 1/2Q CONT. 1,792 CONT. SMDC/ MIPR AL 0 74 1/2Q 74 1/2Q CONT. 148 CONT. TSI/ Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. VRC/ C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT. COIsa/ C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT. SLAD/		C/Other		0	80	1/2Q	80	1/2Q	CONT.	160	CONT.		
SMDC/													
MIPR AL 0 74 1/2Q 74 1/2Q CONT. 148 CONT. TSI/ Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. VRC/ C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT. C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT. SLAD/		MIPR		0	896	1/2Q	896	1/2Q	CONT.	1,792	CONT.		
TSI/ Other AL O 804 1/2Q 804 1/2Q CONT. 1,608 CONT													
Other AL 0 804 1/2Q 804 1/2Q CONT. 1,608 CONT. VRC/ C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT. C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT. SLAD/ SLAD/ 0 336 1/2Q 336 1/2Q CONT. 672 CONT.		MIPR		0	74	1/2Q	74	1/2Q	CONT.	148	CONT.		
VRC/ C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT Colsa/ C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT SLAD/ CONT C													
C/CPFF AL 0 2,362 1/2Q 2,362 1/2Q CONT. 4,724 CONT. Colsa/ C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT. SLAD/		Other		0	804	1/2Q	804	1/2Q	CONT.	1,608	CONT.		
C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT SLAD/													
C/CPFF AL 0 336 1/2Q 336 1/2Q CONT. 672 CONT. SLAD/		C/CPFF		0	2,362	1/2Q	2,362	1/2Q	CONT.	4,724	CONT.		
SLAD/													
		C/CPFF		0	336	1/2Q	336	1/2Q	CONT.	672	CONT.		
MIPR AL 0 140 1/2Q 140 1/2Q CONT. 280 CONT.													
		MIPR	AL	0	140	1/2Q	140	1/2Q	CONT.	280	CONT.		

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exhi	ibit R-3 RDT&E Proj	ject Cost Ana	lysis			Date Februa i	ry 2004				
APPROPRIATION/BUDGET	ACTIVITY				R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced	Component I	Development and Pi	rototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract	Performing	Total		FY 2004		FY 2005			Target		
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
		CEI/										
	C/CPFF	AL	0	518	1Q	518	1Q	CONT.	1,036	CONT.		
		TRW/										
	C/CPFF	AL	0	1,866	1/2Q	1,866	1/2Q	CONT.	3,732	CONT.		
	MIPR	Various OGA`s	0	1,089	1/2Q	1,089	1/2Q	CONT.	2,178	CONT.		
		SAIC/										
	C/CPFF	Various	0	756	1/2Q	756	1/2Q	CONT.	1,512	CONT.		
		AEC/										
	MIPR	Various	0	630	1/2Q	630	1/2Q	CONT.	1,260	CONT.		
		Sandia/										
	MIPR	NM	0	36,065	1/2Q	28,863	1/2Q	CONT.	64,928	CONT.		
		USASMDC/										
	MIPR	AL	0	7,051	1/2Q	7,051	1/2Q	CONT.	14,102	CONT.		
		SY Tech/										
	C/CPFF	AL	0	1,896	1/2Q	1,896	1/2Q	CONT.	3,792	CONT.		
		SMC/										
	MIPR	AL	0	28,891	1Q	28,891	1Q	CONT.	57,782	CONT.		
		OGA`s/										
	MIPR	Various	0	4,340	1/2Q	4,340	1/2Q	CONT.	8,680	CONT.		
		Vandenberg AFB/										
	MIPR	CA	0	2,765	1/2Q	2,765	1/2Q	CONT.	5,530	CONT.		
	a (appe	SY Tech/			1/20	2012	4/2.0	G0.77		G01 m		
TTEC	C/CPFF	AL	0	3,121	1/2Q	2,812	1/2Q	CONT.	5,933	CONT.		
		SED/			1/20		4/2.0	G0.77		G01.TT		
	MIPR	AL	0	671	1/2Q	671	1/2Q	CONT.	1,342	CONT.		
TTTT	MDD	STRICOM/		400	1/20	400	1/20	CONT	07.	CONT		
TTEC	MIPR	FL	0	488	1/2Q	488	1/2Q	CONT.	976	CONT.		
	***	Various/		2.020	1/00	2.004	1/20	CONT	5.01	CONTE		
	Various	Various	0	2,920	1/2Q	2,896	1/2Q	CONT.	5,816	CONT.		
Subtotal Test and Evaluation			0	151,221		143,687		0	294908			

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

		Date
MDA Exhibit R-3 RDT&E Project Cost Analysis		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

IV. Management Services Cost (\$ in Thousands)

iii Tiiousaiius)									
Contract	Performing	Total	1	FY 2004	1	FY 2005	1	1	Target
Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
									1
,	MIT Lincoln Lab/	,		1		1	1	1	
FFRDC	MA	0	1,265	1/2Q	1,265	1/2Q	CONT.	2,530	CONT.
,	MIT Lincoln Lab/	1	1	_ ,	1	11	11	1	
FFRDC	MA	0	300	2Q	301	2Q	CONT.	601	CONT.
, 1	Mitre/					1	1		
FFRDC	Various	0	9,547	1/3Q	8,423	1/3Q	CONT.	17,970	CONT.
, 1	SEMCOM/	<u> </u>				1	1	1	
C/CPFF	Various	0	3,757	1/3Q	4,140	1/3Q	CONT.	7,897	CONT.
, 1	Tecolote/	<u> </u>				1	1	1	
C/CPFF	Various	0	272	1/3Q	280	1/3Q	CONT.	552	CONT.
, 	ESC/Hanscom/	<u> </u>	<u> </u>		<u> </u>	1	1 1	1	
C/CPFF	Various	0	570	1/4Q	580	1/4Q	CONT.	1,150	CONT.
				l					
, 1	NSWC/	<u> </u>				1	1	1	
MIPR	MD	0	3,619	2Q	2,760	2Q	CONT.	6,379	CONT.
, 1	TRW/	<u> </u>				1	1	1	
C/CPAF	MA	0	3,916	2Q	3,916	2Q	CONT.	7,832	CONT.
, 	Mitre/IDA/	<u> </u>	1			1	1	1	
FFRDC	Various	0	1,147	2Q	1,147	2Q	CONT.	2,294	CONT.
C/CPAF	Sparta/	0	3.053	20	3.053	20	CONT	6.106	CONT.
	Contract Method & Type FFRDC FFRDC C/CPFF C/CPFF MIPR C/CPAF	Contract Method Activity & Location Method Activity & Location MIT Lincoln Lab/ MA MIT Lincoln Lab/ MA Mitre/ FFRDC MA Mitre/ Various SEMCOM/ Various Tecolote/ Various ESC/Hanscom/ Various NSWC/ MIPR MD TRW/ C/CPAF MA Mitre/IDA/ Mitre/IDA/ Various Sparta/	Contract Method Activity & PYs & PYs & Type Location Cost MIT Lincoln Lab/ MIT Lincoln Lab/ MIT Lincoln Lab/ MIT Lincoln Lab/ MA 0 FFRDC MA 0 Mitre/ Various 0 SEMCOM/ Various 0 Tecolote/ Various 0 ESC/Hanscom/ Various 0 TNSWC/ Warious 0 MIPR MD 0 TRW/ C/CPAF MA 0 Mitre/IDA/ Various 0 Sparta/	Contract Performing Activity & PYs FY 2004	Contract Performing Activity & PYs FY 2004 Award & Type Location Cost Cost Date	Contract Performing Activity & PYs FY 2004 Award FY 2005	Contract Method Activity & PYs FY 2004 Award FY 2005 Award & Type Location Cost Cost Date Cost Date	Contract Performing Method Activity & PY's FY 2004 Award FY 2005 Award Cost to	Contract Method Activity & PYs FY 2004 Award PY 2005 Award Cost to Location Cost Cost Date Cost Date Cost Date Cost Date Cost Cost Date Cost Cost Date Cost Cost Date Cos

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exh	ibit R-3 RDT&E Proj	ect Cost Ana	lvsis			Date Februa :	ry 2004		
APPROPRIATION/BUDGET A				,	R-1 NOMEN	ICLATURE				
RDT&E, DW/04 Advanced	Component l	Development and Pr	ototypes (A	CD&P)	0603882C 1	Ballistic Mis	ssile Defens	e Midcourse I	Defense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		NRC/								
	C/CPAF	Various	0	688	2Q	688	2Q	CONT.	1,376	CONT.
		QRI/								
	C/BPA	Various	0	874	2Q	874	2Q	CONT.	1,748	CONT.
		CSC/								
	C/CPAF	AL	0	1,767	2Q	1,767	2Q	CONT.	3,534	CONT.
		Vanguard Research/								
	C/CPAF	AL	0	84	2Q	84	2Q	CONT.	168	CONT.
		USAF ESC/								
	MIPR	MA	0	69	2Q	69	2Q	CONT.	138	CONT.
		ARL/								
	MIPR	CA	0	247	2Q	247	2Q	CONT.	494	CONT.
		Mevatech/								
	C/CPAF	AL	0	688	2Q	688	2Q	CONT.	1,376	CONT.
	C/CPAF	TBD	0	707	2Q	707	2Q	CONT.	1,414	CONT.
	C/CPAF	TSI	0	201	2Q	201	2Q	CONT.	402	CONT.
	MIPR	Argonne NL	0	140	2Q	140	2Q	CONT.	280	CONT.
	Various	Miscellaneous	0	8	2Q	8	2Q	CONT.	16	CONT.
Subtotal Management Services			0	32,919		31,338		0	64257	
Remarks	1	L	I.		1			<u>l</u>	l	

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

Project Total Cost	0	1,587,089	2,331,881	3,918,970	

Remarks

The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

MDA	Exl	xhibit R-4 Schedule Profile										,						Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	evelo	pm	ent a	and	Prot	totyj	pes ((AC	D&P	P)				NCL. Ball			ssile	Def	ense	e Mi	dco	urse	e De	fens	e Se	gme	nt	
Fiscal Year		20	003			20	004			200)5			20	06			20	07			20	008			20	09	
	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
Flight Tests		•		,		•	•											,		,			•			•	,	
IFT09	Δ																											L
IFT10	Δ																											
IFT13B						Δ																						L
IFT13C						Δ			Δ																			
IFT14							Δ			_∆																		
IFT15								4			\land																	
FT 04-1									A			\land																
FTG 04-1										4			\triangle															
FTG 04-2											A			\land														
FTG 04-3												Δ			\blacksquare													
FTG 04-4 a/b (Salvo Mission)												Δ			\blacksquare													
FTG 04-5													A			\triangleright												
FT 06-1													A			\land												
FTG 06-1 a/b (Salvo Mission)																Δ			1									
FTG 06-2																	Δ			Δ								

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exhibit R-4 Schedule Profile																	Date Feb		ry 2	2004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	ent a	nd l	Prot	toty	pes ((AC	D&]	P)				NCL. Ball			ssile	e De	fens	e M	idco	urse	e De	fense	e Seg	men	ıt	
Fiscal Year		20	003			20	004			20	005			20	06			20	007			20	008			200)9	
	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
Flight Tests																												
FTG 06-3 a/b (Salvo Mission)																		Δ			₽							_
FTG 06-4																				Δ	<u> </u>		₽					
FTG 08-1																						Δ	<u> </u>		\perp			_
FTG 08-2																							Δ			- △		
FTG 08-3 a/b (Salvo Mission)																								Δ		_	- ∆	
FTG 10-1																									4	+		
FTG 10-2																											4	
FTG 10-3								L	L	L			L			L		L	L		L	L	L		Ш		<u></u>	△
Booster Verification Test																												
BV 6				Δ																								4
BV 5						Δ													L									_
Milestones									_	_								_			_	_	_				. 1	
Decision Points	Δ					<u> </u> 		Ħ	t	⊨					H			H	H	 	t	Ħ				<u> </u>	- 4↓	4
										<u> </u>									<u> </u>				<u> </u>					_
										<u> </u>									<u> </u>				ļ					_

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

	MDA Exhibit R-4A Sch	edule Detail				Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compon	7				MENCLATURE 2C Ballistic Mis		lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY 2	005	FY 2006	FY 2007	FY 2008	FY 2009
Flight Tests								
IFT09	1Q							
IFT10	1Q							
IFT13B		2Q						
IFT13C		2Q-4Q	10)				
IFT14		3Q-4Q	1Q-	2Q				
IFT15		4Q	1Q-	3Q				
FT 04-1			1Q-	4Q				
FTG 04-1			2Q-	4Q	1Q			
FTG 04-2			3Q-	4Q	1Q-2Q			
FTG 04-3			40	Q .	1Q-3Q			
FTG 04-4 a/b (Salvo Mission)			40)	1Q-3Q			
FTG 04-5					1Q-4Q			
FT 06-1					1Q-4Q			
FTG 06-1 a/b (Salvo Mission)					4Q	1Q-3Q		
FTG 06-2						1Q-4Q		
FTG 06-3 a/b (Salvo Mission)						2Q-4Q	1Q	
FTG 06-4						4Q	1Q-3Q	
FTG 08-1							2Q-4Q	1Q
FTG 08-2							3Q-4Q	1Q-2Q
FTG 08-3 a/b (Salvo Mission)							4Q	1Q-3Q
FTG 10-1								1Q-4Q
FTG 10-2								3Q-4Q
FTG 10-3								3Q-4Q
Booster Verification Test								
BV 6	4Q							
BV 5	-	2Q						
Milestones								
Decision Points	1Q-4Q	1Q-4Q	1Q-	40	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q

Project: 0808 Ground-Based Midcourse Defense (GMD) Block 2004/2006 Development

MDA Exhibit R-2A RDT&E Project Justification					Date February 2 0	004		
APPROPRIATION/BUDGET ACTIVITY	R	R-1 NC	OMENCLA'	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P) 0	6038	82C Ballis	tic Missile	Defense Mi	idcourse De	efense Segm	nent
COST (\$ in Thousands)	FY 20	03	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development		0	0	0	0	0	1,236,413	1,237,596
RDT&E Articles Qty		0	0	0	0	0	6	9

A. Mission Description and Budget Item Justification

The Ground-Based Midcourse (GMD) segment of the Ballistic Missile Defense System (BMDS) is a key component of the Initial Defensive Capability (IDC) and all future BMDS Blocks being fielded by MDA. It consists of ground-based interceptors, sensors, and fire control systems fielded in multiple locations. The GMD employs hit-to kill technologies to intercept ballistic missiles in the midcourse phase of flight to defend the homeland, deployed forces, friends, and allies. The goals of the BMDS are (1) to complete, verify, and test the BMDS; (2) to place an operational capability on alert by September 30, 2004; (3) to enhance these fielded capabilities when appropriate; and (4) to perform concurrent operations and testing of a BMDS. The elements being developed and fielded of the Midcourse segment will comprise most of the critical components in meeting these goals in the near-term.

GMD system capability is measured by Engagement Sequence Groups (ESG) which define the sequence of events used to enable the weapon to engage a target. The ESGs provide the structure for measuring the level of performance and integration maturity of the GMD system within the BMDS. Engagement sequence identifies the sensors that support four functions (acquire/cue, commit, update, and discriminate) required to launch the GMD GBI against a target. Consistent with the BMDS block development strategy, additional ESGs are incorporated into blocks as sensor systems become available. Block 2004 includes six BMDS ESGs (Engage on AEGIS, Launch on AEGIS, Engage on Cobra Dane, Engage on UEWRs (Beale and Fylingdales), and Engage on Sea-Based X-Band radar. These are the focus of IDC. Block 2006 incorporates two additional BMDS ESGs (Engage on UEWR (Thule) and Launch on DSP/SBIRS). Block 2008 incorporates three additional BMDS ESGs (Engage on Forward-Based X-Band Radar (FBX), Launch/Engage on EO/IR, and Launch/Engage on THAAD). ESGs are embedded into GMD Integrated Test Program. Possible measures of effectiveness include: defended area, launch area denied, probability of engagement success, battlespace, track times, quality of engagement sequence, and depth of fire. Robustness and capability of the BMDS will be enhanced as the number of operationally available ESGs increases. In addition, continuing development activities including GBI surveillance testing; EKV and GMD fire control upgrades, and sea launched GBIs enable improvements to all ESGs and increase warfighter confidence.

The Block 2004 and 2006 (Projects 0708 and 0808) will develop and field the initial IDC and the first upgrades of the BMDS. GMD will build and field the initial infrastructure (both IDC and Test Bed), deploy the initial increment of interceptors, and provide for initial sustainment infrastructure for the IDC.

Block 2008 supports the continuing development and testing of new and evolving BMDS technologies. This consists of sustaining engineering and spiral upgrades to the GMD components of the Block 2004/06 BMDS IDC and Test Bed. These efforts will include Preplanned Product Improvements (P3I) to GMD components and integration of emerging MDA technologies, including enhanced EKV and SBX capabilities, additional GFC capabilities, countermeasures mitigation, multi-sensor fusion, possibility of sea-launched GBIs, and advanced discrimination capabilities. This development effort will mature key technologies in logical stages to allow for an enhanced BMDS IDC and Test Bed (using operationally representative hardware and software vice developmental hardware and software), and a continuing program to develop and demonstrate a wide range of technologies supporting a ground-based "Hit-to-Kill" capability. This effort includes integration of the Forward-Based Sensor (FBX), including enhanced discrimination, fire control and data fusion software within GFC, to fully utilize this expanded sensor network. This development effort also provides hardware, planning, mission support and execution of the GMD test program.

The flow down of BMDS capability specifications resulting from Missile Defense National Team efforts in Command and Control, Battle Management, and Communications (C2BMC) and Systems Engineering & Integration will guide the integration of Targets and Countermeasures, Test and Evaluation, and Program Operations Support into the BMD System, the BMDS C2BMC architecture, and the BMD Test Bed.

Project: 0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development

MDA Exhibit R-2A RDT&E Project Justi	fication		Date February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	R-1 NOMENCL 0603882C Bal	ATURE listic Missile Defense Midco	urse Defense Segment
B. Accomplishments/Planned Program				
	FY	2003	FY 2004	FY 2005
Funding in this Project is not programmed until FY08.				
RDT&E Articles (Quantity)				

C. Other Program Funding Summary

	ET 2002	EN 2004	FW 2005	EN 2006	EN 2005	EN 2000	EN 2000	То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing

Project: 0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development

MDA	Exhibit R-2A F	RDT&E Projec				Date Febru	ıary 2004			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component	ent Developmo	ent and Prote	otypes (ACD			MENCLATU 2C Ballistic		nse Midcours	e Defense Seg	gment
	FY 2003	FY 2004 FY 2005		FY 2006	5	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719			599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	, ,		176	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,0)49	445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

GMD will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has restructured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The strategy is to build the initial GMD parts of the BMDS Test Bed NLT 4th Quarter FY 2004 as an early BMDS Test Bed and deliver capability block upgrades as early as practical. This process will (1) allow early implementation of a capability while supporting an evolving requirement/threat definition process, (2) minimize the risks of obsolescence posed by the rapid pace of technology development, (3) provide opportunities to update to a changing set of standards, and (4) allow informed trades between cost, schedule, and performance while exploring operational possibilities. The development approach has been enhanced to include (1) adding test infrastructure and improving test management to allow more operationally challenging representative flight tests and providing for increased testing against more challenging targets, and (2) increasing the fidelity of the project simulations.

Project: 0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development

				·····	1100	oty	, co (110	D&F	,	000)388		Dun	DUIC	, 1711)	35110	DU	CIID	C 1V1						0		
Fiscal Year		20	003			20	04			20	05			20	06		•	20	07			20	800			20	09	_
	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
Flight Tests	Ī																			ı								
IFT09	<u> </u>																										Ш	<u> </u>
IFT10	Δ																										\square	┡
IFT13B						Δ			_																		\sqcup	▙
IFT13C						Δ			\triangle	٨																		L
IFT14							Δ			\triangleq																	\square	┡
IFT15								Δ			\mathbb{H}	_									-			_			igwdapprox	▙
FT 04-1									4				_														$\sqsubseteq \sqsubseteq$	▙
FGT 04-1										Δ			Δ														$\vdash \vdash$	<u> </u>
FTG 04-2											A			₽	Α.												$\vdash \vdash$	<u> </u>
FTG 04-3												<u> </u>			\triangle												\sqcup	▙
FTG 04-4 a/b (Salvo Mission)												Δ	_		\triangle	^											$\vdash \vdash$	⊢
FTG 04-5													4														$\vdash \vdash$	⊢
FT 06-1													4			\mathbb{R}^{2}			$\overline{\Delta}$					_			$\vdash \vdash$	⊬
FTG 06-1 a/b (Salvo Mission)																Δ	_		$\not =$	_							Ш	⊬
FTG 06-2		-															\perp	H		$\stackrel{=}{\vdash}$	-	-		_			$\vdash \vdash$	┝
FTG 06-1 a/b (Salvo Mission) FTG 06-2																	Δ											

Project: 0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development

	MDA Exhibit R-4 Schedule Profile																	Date Feb		ry 2	2004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	ent a	nd l	Prot	toty	pes ((AC	D &]	P)				NCL. Ball			ssile	e De	fens	e M	idco	urse	e De	fense	e Seg	gmen	ıt	
Fiscal Year		20	003			20	004			20	005			20	06			20	007			20	008			200)9	
	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
Flight Tests	_																_											
FTG 06-3 a/b (Salvo Mission)																		Δ			\perp_{Δ}							
FTG 06-4																				Δ			₩					_
FTG 08-1																						Δ						
FTG 08-2																							Δ					
FTG 08-3 a/b (Salvo Mission)																								Δ		_	- ∆	_
FTG 10-1																									4	_	+	Δ
FTG 10-2																											<u></u>	Δ
FTG 10-3							L	L		L					L	L		L	L	上	L	L	L			\perp	<u></u>	Δ
Booster Verification Test																												
BV 6				Δ																								_
BV 5		Ш			ш	Δ	L	L	上	L			Ш		ட		L	L			上		L		Ш	Ш	Ш	_
Milestones																												
Decision Points	Δ							H	H	H								H	⊨		H	H				+	-∆	
																												_]

Project: 0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development

	MDA Exhibit R-4A Sch	edule Detail				Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compon	7	t Development and Prototypes (ACD&P)					lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009
Flight Tests								
IFT09	1Q							
IFT10	1Q							
IFT13B		2Q						
IFT13C		2Q-4Q	1	Q				
IFT14		3Q-4Q	1Q	-2Q				
IFT15		4Q	1Q	-3Q				
FT 04-1			1Q	4Q				
FTG 04-1			2Q	4Q	1Q			
FTG 04-2			3Q	-4Q	1Q-2Q			
FTG 04-3			4	Q	1Q-3Q			
FTG 04-4 a/b (Salvo Mission)			4	Q	1Q-3Q			
FTG 04-5					1Q-4Q			
FT 06-1					1Q-4Q			
FTG 06-1 a/b (Salvo Mission)					4Q	1Q-3Q		
FTG 06-2						1Q-4Q		
FTG 06-3 a/b (Salvo Mission)						2Q-4Q	1Q	
FTG 06-4						4Q	1Q-3Q	
FTG 08-1							2Q-4Q	1Q
FTG 08-2							3Q-4Q	1Q-2Q
FTG 08-3 a/b (Salvo Mission)							4Q	1Q-3Q
FTG 10-1								1Q-4Q
FTG 10-2								3Q-4Q
FTG 10-3								3Q-4Q
Booster Verification Test								
BV 6	4Q							
BV 5	-	2Q						
Milestones		-						
Decision Points	1Q-4Q	1Q-4Q	1Q	40	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q

Project: 0908 Ground-Based Midcourse Defense (GMD) Block 2008 Development

]	Date			
MDA Exhibit R-2A RDT&E Project Justification					February 2	004		
APPROPRIATION/BUDGET ACTIVITY	H	R-1 NO)MENCLA	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P)	060388	82C Ballis	tic Missile	Defense Mi	idcourse De	efense Segn	nent
COST (\$ in Thousands)	FY 20	003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3020 Sea-Based Midcourse Defense (SMD)	386	5,200	0	0	0	0	0	0
RDT&E Articles Qty		8	0	0	0	0	0	0
	· EII.00	00 (B	1 D :	2020 111.1		C 11 1 D	, p ,	-

Note: Consistent with the Missile Defense Agency (MDA) Block Management framework, beginning in FY 2004, Budget Project 3020 will be divided into the following Budget Projects:

0709 - Aegis BMD Block 2004

0809 - Aegis BMD Block 2006

0909 - Aegis BMD Block 2008

0009 - Aegis BMD Block 2010

0402 - Japan Cooperative Research

A. Mission Description and Budget Item Justification

The mission of Aegis BMDS is to deliver an enduring operationally effective and supportable Ballistic Missile Defense Capability in Aegis Cruisers and destroyers, in defense of the U.S., our deployed forces, allies and friends; to increase the effectiveness of the greater Ballistic Missile Defense System (BMDS) by both providing and gaining synergy from other BMDS elements; and to incrementally increase this capability by delivering evolutionary spiral upgrades as part of BMDS block upgrades.

The Aegis BMD program is the sea-based element of the Ballistic Missile Defense System (BMDS). Aegis BMD supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions by providing capability in locations within range of international waters. Aegis BMD may be deployed by Japan and possibly other countries in addition to the United States.
- In all phases of ballistic missile flight; boost, midcourse, and terminal.
- Against long- range ballistic missiles by providing surveillance and tracking support to the Block 04 Initial Defensive Operations. It provides engagement support against short and medium range ballistic missiles as part of Block 04, and will provide support against intermediate range ballistic missiles as part of BMDS Block 06 and BMDS Block 08.

Aegis BMD supports the BMDS effort to improve missile capability with the SM-3 Block 1 and Block 1A missiles. It supports the effort to improve sensors so that missiles are more effective through LRS&T support to the IDO, through development of the Aegis BMD signal processor to support Block 06/08, and through the ability to launch on Tactical Digital Information Link (TADIL).

The Aegis Ballistic Missile Defense (BMD) Block 2004 program will be technically capable of initial defensive operations:

- Defeats unitary and separating targets (Short Range Ballistic Missiles and Medium Range Ballistic Missiles (SRBMs and MRBMs)) with Aegis BMD configured cruisers and STANDARD Missile-3 (SM-3) guided missiles.
- Uses a BMD modified Aegis Weapon System (AWS) and SM-3 guided missile evolved from the Aegis Light-weight Exo-atmospheric Projectile (LEAP) Intercept (ALI) demonstrated in flight tests.
- Provides three incremental capability deliveries including; Long Range Surveillance and Track to support Initial Defense Operations, preliminary engagement capability for test bed operations and for emergency use if required, and full Block 2004 ECS compliant BMD capability including integrated Ship Self Defense and Tomahawk capability.
- Provides Inter-Continental Ballistic Missile (ICBM) surveillance and track data through the Ballistic Missile Defense System (BMDS) to the Ground-based Missile Defense (GMD) system for radar cueing and development of early fire control information.
- Provides SM-3 Block 1 and IA missile configurations.
- Provides expanded battle space through the use of remote data provided by Joint Tactical Information Data System (JTIDS) (Launch on TADIL).
- Provides the ability to quickly reconfigure BMD ships into a fleet air defense capability.
- Modifies Aegis destroyers for GMD surveillance and tracking capability.
- Modifies Aegis cruisers with the Block 2004 capability.

Project: 3020 Sea-Based Midcourse Defense (SMD)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

- Provides concurrent test and operations capability as an element of the BMDS.
- Provides basis for Aegis BMD capability requested by Japan.

Aegis BMDS will continue to plan and budget for improvements to existing Sea Based system to enable it to defend against longer range missiles.

Aegis Ballistic Missile Defense (BMD) Block 2006 will evolve (through spiral capability driven development) from the Block 2004 Aegis Weapon System (AWS) with development focused on enhancing BMDS engagement sequence support:

- Defeats unitary and separating targets (Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), and Intermediate Range Ballistic Missiles (IRBM) with Aegis BMD configured cruisers, destroyers and STANDARD Missile-3 (SM-3) guided missiles.
- Provides militarily useful capability.
- Provides improved battle space to the Block 2004 capability through such capabilities as Launch on Remote and Launch on Boost.
- Provides improved Inter-Continental Ballistic Missile (ICBM) surveillance and track data through the BMDS to the Ground-based Midcourse Defense (GMD) system for radar cueing and development of early fire control information.
- Provides improved tracking and discrimination with synthetic wide bandwidth AN/SPY-1 Radar modifications.
- Modifies additional Aegis destroyers with Block 2004 GMD surveillance tracking capability to a BMD engage capability.
- Provides the ability to rapidly reconfigure BMD ships into a fleet air defense capability.
- Provides a total of fifteen Aegis destroyers equipped with Aegis BMD capability.
- Provides a total of three Aegis cruisers equipped with Aegis BMD capability.

The U.S./Japan Cooperative Research (JCR) will continue per the U.S. Department of Defense (DoD)/Japan Defense Agency (JDA) Memorandum of Agreement signed in 1999 to conduct cooperative research in Ballistic Missile Defense:

- Focusing research on four components of the SM-3 guided missile: sensor, advanced kinetic warhead, second stage propulsion, and lightweight nosecone.
- Conduct flight tests in FY 2005 and FY 2006 of the lightweight nosecone in Joint Control Test Vehicle-1 (JCTV-1) and Joint Flight Mission-1 (JFM-1).

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Aegis BMD Block 04	368,700		
RDT&E Articles (Quantity)	8		

For completeness, the FY 2003 Accomplishments are provided below.

Aegis BMDS has completed major steps to deliver and deploy an Initial Defense Capability in Support of Presidential guidance. Long Range Surveillance and Track, System Design was disclosed and the Chief of Naval Operations (CNO) assigned the first six Aegis BMD destroyers. The first BMDS IDO system test was conducted passing track data from USS Lake Erie in the western Pacific to GMD through the C2BMC network. Initial logistics support and crew training is underway.

RDT&E Articles: SM-3 Guided Missiles (3), Targets (2), Prototype Surveillance & Tracking Destroyer kits available for installation (3)

Project: 3020 Sea-Based Midcourse Defense (SMD)

	Date
MDA Exhibit R-2A RDT&E Project Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

Aegis Weapons System (AWS)

For Initial Defense Operations:

- Completed SURV 1.2 engineering assessment.
- Conducted Aegis BMD Long Range Surveillance and Track (LRS&T) System Design Disclosure.
- Conducted Pacific Explorer exercises with USS Lake Erie in Western Pacific with BMDS GMD system to evaluate IDO engagement sequence communications.
- Defined logistics support plan for Aegis IDO destroyer.

AWS

For emergency engagement capability:

- Conducted FM-4 flight test hitting the target.
- Conducted the Aegis BMD Block 2004 3.0 System Design Disclosure (SDD).
- Initiated development of Aegis BMD Computer Program certification plan for Aegis BMD 3.0.

Missile

For emergency engagement capability:

- Commenced TSRM Design Verification Test.
- Conducted All-Up-Round level CDRs for SM-3 Block I.
- Conducted FM-5 flight test to verify Block 2004 with KW multi-pulse SDACS capability and lethal aim point shift in an ascent phase scenario.
- Conducted Monolithic SDACS ground and qualification tests.
- Continued Monolithic SDACS design studies.
- Released Kinetic Warhead (KW) initial software build with discrimination features.

VLS

For emergency engagement capability:

- Conducted the Vertical Launching System (VLS) Phase I Preliminary Design Review (PDR 1) with a 3.0 computer program.
- Conducted VLS canister thermal trade studies.
- Initiated development of SAASM Crypto VLS VGI upgrade.

AWS

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Continued engineering development of the Block 2004 Aegis BMD System.
- Conducted element/multi-element test and verification of AWS Computer Program.
- Initiated development of Aegis BMD Computer Program certification plan for Aegis BMD 3.1
- Conducted the Miniature Transmit/Receive System (MTRS)/Assessment of Effectiveness (AOE) Preliminary Design Review (PDR).

Project: 3020 Sea-Based Midcourse Defense (SMD)

MDA Exhibit R-2A RDT&E Project Justification APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) APPROPRIATION/BUDGET ACTIVITY ROT & BR-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment

- Continued IR discrimination algorithm development.
- Continued Radio Frequency (RF)/IR discrimination guidance algorithms implementation.
- Initiated IR discrimination studies.
- Initiated code development for SURV 1.n and Aegis BMD 3.n.
- Verified shipboard system interfaces with ETEDDS.

Missile

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Initiated SM-3 All-Up-Round level obsolete material replacement development effort.
- Completed SM-3 nosecone structural integrity tests, initiated rain erosion test.
- Continued SM-3 Block 2004 SDACS development.
- Verified sealed seeker design.
- Continued TSRM obsolete material replacement development efforts.

	FY 2003	FY 2004	FY 2005
Aegis BMD Block 06	17,500		
RDT&E Articles (Quantity)			

FY 2003 Accomplishments:

AWS

- Completed inputs for MDA Engineering Review Boards (ERB) for Block 2006.
- Completed Block 2006 capability assessment.
- Continued use of KW IR Seeker Captive Carry and AN/SPY-1 Radar High Range Resolution (HRR) Test Beds
- Developed preliminary requirements and design for Aegis BMD Signal Processor Prototype.
- Continued fabrication of AN/SPY-Aegis BMD Signal Processor Prototype.
- Continued Infra-Red (IR) discrimination advance studies for Block 2006 capabilities.

C. Other Program Funding Summary

C. Other Frogram Funding Summary									
								To	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603890C Ballistic Missile Defense									
System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area									
Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604861C Theater High-Altitude Area	887,616			0	0	0	0		

Project: 3020 Sea-Based Midcourse Defense (SMD)

			CT (CEII)		<u> </u>					
MDA 1	Exhibit R-2A F	RDT&E Projec	ct Justification				Date Febru	ıary 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compone	nt Developm	ent and Proto	otypes (ACD&			MENCLATUI C Ballistic		nse Midcours	se Defense Seg	gment
								-	То	Total
	FY 2003	FY 2004	FY 2005	FY 2006		FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0		0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0		0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,9	58	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,0	99	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,4	68	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0		0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,5	12	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0		0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,0	48	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,6	67	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense										

D. Acquisition Strategy

System Interceptors

PE 0603886C Ballistic Missile Defense

PE 0603889C Ballistic Missile Defense

PE 0603888C Ballistic Missile Defense Test

Sensors

and Targets

Products

The Aegis BMD element will follow the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has implemented a missile defense acquisition strategy using a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities. After considering all the technical and management aspects of the program and to meet the requirements presented by the ballistic missile threat, the Aegis BMD program has awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and Aegis Weapon System, respectively.

591,957

511,262

716,427

418,608

1,453,679

1,717,480

656,152

445,971

1,122,189

2,196,531

654,015

456,339

1,232,893

2,449,322

688,119

469,621

790,265

1,118,599

673,476

421,049

Project: 3020 Sea-Based Midcourse Defense (SMD)

327,013

0

0

0

425,421

117,719

635,782

305,309

MDA Exhibit R-2A (PE 0603882C)

Continuing

Continuing

Continuing

Continuing

Continuing

Continuing

Continuing

Continuing

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compone I. Product Development Cost (\$ in Thousan Contra Metho Cost Categories: & Typ Aegis BMD Block 04 SS/CPF	ds) ct Performing d Activity & Location JHU/APL/ F MD Lockheed Martin/	Total PYs Cost	CD&P) FY 2004 Cost	R-1 NOMEN 0603882C 1 FY 2004 Award Date	Ballistic Mi	FY 2005 Award	e Midcourse D	rotal	Target
I. Product Development Cost (\$ in Thousan Contra Metho Cost Categories: & Typ Aegis BMD Block 04 SS/CPF	ds) ct Performing d Activity & Location JHU/APL/ F MD Lockheed Martin/	Total PYs Cost	FY 2004	FY 2004 Award	FY 2005	FY 2005			Target
Contra Metho Cost Categories: & Typ Aegis BMD Block 04 SS/CPF	tet Performing Activity & Location JHU/APL/ MD Lockheed Martin/	PYs Cost		Award			Cost to	Total	-
Metho Cost Categories: & Typ Aegis BMD Block 04 SS/CPF	Activity & Location JHU/APL/ F MD Lockheed Martin/	PYs Cost		Award			Cost to	Total	-
Cost Categories: & Typ Aegis BMD Block 04 SS/CPF	Location JHU/APL/ F MD Lockheed Martin/	Cost				Award	Cost to	Total	
Aegis BMD Block 04 SS/CPF	JHU/APL/ F MD Lockheed Martin/		Cost	Date	~ .		00000	rotar	Value of
SS/CPF	F MD Lockheed Martin/	13 085			Cost	Date	Complete	Cost	Contract
	F MD Lockheed Martin/	13 085							
SS/CP#		15,005					CONT.	13,085	TBD
	F NJ	93,260					CONT.	93,260	TBD
SS/FFRI	MIT/LL/	5,997					CONT.	5,997	TBD
55/1110	NSWC/CL/							·	
MIPR		2,055					CONT.	2,055	TBD
MIPR	NRL/ DC	2,576					CONT.	2,576	TBD
MIPR	NSWC/DD/ VA	8,219					CONT.	8,219	TBD
MIPR	NSWC/PHD/ CA	3,584					CONT.	3,584	TBD
	Raytheon/								
SS/CPA	F AZ PSC/	129,171					CONT.	129,171	TBD
C/CPF	F VA	1,700					CONT.	1,700	TBD
SS/CPA	United Defense/ F MN	1,382					CONT.	1,382	TBD
Variou		0					CONT.		TBD
SS/CPF	Mitre/ F NJ	0					CONT.		TBD
C/CPF	Northrup Grumman/ F VA	0					CONT.		TBD
MIPR	NSWC/CD/ MD	0					CONT.		TBD

Project: 3020 Sea-Based Midcourse Defense (SMD)

		ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa	ry 2004				
APPROPRIATION/BUDGET A	ACTIVITY				R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced	Component I	Development and Pi	cototypes (A	CD&P)	0603882C	Ballistic Mis	ssile Defens	e Midcourse D	Defense Seg	ment		
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
	33 - 34 -	NSWC/IH/						33				
	MIPR	MD	0					CONT.		TBD		
		WSMR/										
	MIPR	NM	0					CONT.		TBD		
Aegis BMD Block 06												
		United Defense/										
	C/CPAF	MN	585					CONT.	585	CONT.		
		NSWC/DD/										
	MIPR	VA	208					CONT.	208	CONT.		
		JHU/APL/										
	SS/CPFF	MD	430					CONT.	430	CONT.		
		Lockheed Martin/										
	SS/CPAF	NJ	3,050					CONT.	3,050	CONT.		
		Raytheon/										
	SS/CPAF	AZ	26,800					CONT.	26,800	CONT.		
	Various	Various	0					CONT.		CONT.		
Subtotal Product Development			292,102	0		0		0	292102			
Remarks II. Support Costs Cost (\$ in Tho												
	Contract	Performing	Total		FY 2004		FY 2005			Target		
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
Aegis BMD Block 04												
		NSWC/DD/										
	MIPR	VA	10,568					CONT.	10,568	TBD		
		JHU/APL/										
	SS/CPFF	MD	8,348					CONT.	8,348	TBD		
	C/CPAF	COMP/ VA	2,417					CONT.	2,417	TBD		

Project: 3020 Sea-Based Midcourse Defense (SMD)

	MDA Exh	ibit R-3 RDT&E Pro	ject Cost Ana	lysis			Date Februa	ry 2004				
APPROPRIATION/BUDGET A	CTIVITY			•	R-1 NOMENCLATURE							
RDT&E, DW/04 Advanced	Component I	Development and Pa	rototypes (A	CD&P)	9) 0603882C Ballistic Missile Defense Midcourse Defense Segment							
	Contract	Performing	Total		FY 2004		FY 2005			Target		
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract		
		CREE/										
	C/CPAF	VA	2,400					CONT.	2,400	TBD		
		BMPCO/										
	SS/CPFF	MD	1,170					CONT.	1,170	TBD		
		MEI/										
	C/CPFF	VA	1,250					CONT.	1,250	TBD		
		MIT/LL/										
	FFRDC	MA	7,040					CONT.	7,040	TBD		
		NSWC/CD/										
	MIPR	VA	2,919					CONT.	2,919	TBD		
		SEG/										
	SS/CPFF	VA	3,740					CONT.	3,740	TBD		
		NSWC/PHD/										
	MIPR	CA	2,932					CONT.	2,932	TBD		
		Lockheed Martin/										
	SS/CPAF	NJ	0					CONT.		TBD		
	Various	Various	0					CONT.		TBD		
Aegis BMD Block 06												
		NSWC/DD/										
	MIPR	VA	622					CONT.	622	CONT.		
		JHU/APL/										
	SS/CPFF	MD	1,289					CONT.	1,289	CONT.		
		Raytheon/										
	SS/CPAF	AZ	0					CONT.		TBD		
		Lockheed Martin/										
	SS/CPAF	NJ	0					CONT.		TBD		
	Various	Various	0					CONT.		TBD		
Subtotal Support Costs			44,695	0		0		0	44695			
Remarks												

Project: 3020 Sea-Based Midcourse Defense (SMD)

APPROPRIATION/BUDGET ACTIVITY ROM/40 Advanced Component Development and Prototypes (ACD&P) 0603882C Ballistic Missile Defense Midcourse Defense Segment		MDA Exhi	ibit R-3 RDT&E Proj	iect Cost Ana	lvsis			Date Februa	ry 2004		
R. Performing Total Performing Total Performing Performi	APPROPRIATION/BUDGET A			eet cost iina	1,515	R-1 NOMEN	ICLATURE	100144	2		
H. Test and Evaluation Cost (\$ in Thousands)			Development and Pi	rototypes (A	CD&P)			ssile Defens	e Midcourse I	Defense Seg	ment
Cost Categories:	12 10 2, 2 11, 0 112 120 120 120 120 120 120 120 120 1			rototj pes (12	(22 001)	00000020	- WILLS VIO 1111				
Method Activity & PYs FY 2004 Award FY 2005 Award Cost to Total Val	III. Test and Evaluation Cost (\$	in Thousands)									
Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost			_			FY 2004		FY 2005			Target
Aegis BMD Block 04		Method	Activity &	PYs		Award	FY 2005	Award	Cost to		Value of
C/CPFF	Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
CCPFF	Aegis BMD Block 04										
SS/CPFF MD 2,870 CONT. 2,870			HTS/								
SS/CPFF MD 2,870		C/CPFF	HI	1,175					CONT.	1,175	TBD
NAWC/PM/ CA 1,987 CONT. 1,987 NSWC/DD/ NSWC/DD/ NSWC/DD/ NSWC/DD/ NSWC/DD/ NSWC/PHD/ N			JHU/APL/								
MIPR		SS/CPFF	MD	2,870					CONT.	2,870	TBD
NSWC/DD/			NAWC/PM/								
MIPR		MIPR	CA	1,987					CONT.	1,987	TBD
NSWC/PHD/ CA 3,677 CONT. 3,677			NSWC/DD/								
MIPR		MIPR	VA	5,118					CONT.	5,118	TBD
MIPR			NSWC/PHD/								
MIPR AL 9,245		MIPR	CA	3,677					CONT.	3,677	TBD
CINCPACFLT/			SMDC/								
MIPR HI 1,024		MIPR	AL	9,245					CONT.	9,245	TBD
MIPR			CINCPACFLT/								
MIPR HI 2,869 CONT. 2,869 Various Various 0 CONT. Subtotal Test and Evaluation 27,965 0 0 0 27965 Remarks		MIPR	HI	1,024					CONT.	1,024	TBD
MIPR HI 2,869 CONT. 2,869			PMRF/								
Subtotal Test and Evaluation 27,965 0 0 0 0 27965 Remarks IV. Management Services Cost (\$ in Thousands) Contract Performing Total FY 2004 FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Aegis BMD Block 04 PCI/		MIPR		2,869					CONT.	2,869	TBD
Subtotal Test and Evaluation 27,965 0 0 0 0 27965 Remarks IV. Management Services Cost (\$ in Thousands) Contract Performing Total FY 2004 FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Aegis BMD Block 04 PCI/		Various	Various	0					CONT.		TBD
Remarks IV. Management Services Cost (\$ in Thousands) Contract Performing Total FY 2004 FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Aegis BMD Block 04 PCI/	Subtotal Test and Evaluation			27,965	0		0			27965	
IV. Management Services Cost (\$ in Thousands) Contract Performing Total FY 2004 FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Aegis BMD Block 04 PCI/				,			1				
Contract Performing Total FY 2004 FY 2005 Ta Method Activity & PYs FY 2004 Award FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Cost POID Total Cost Cost Cost Cost Date Complete Cost Cost Cost Cost Cost Cost Cost Cost											
Contract Performing Total FY 2004 FY 2005 Ta Method Activity & PYs FY 2004 Award FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Cost POID Total Cost Cost Cost Cost Date Complete Cost Cost Cost Cost Cost Cost Cost Cost											
Method Activity & PYs FY 2004 Award FY 2005 Award Cost to Total Val Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cost Aegis BMD Block 04 PCI/	IV. Management Services Cost ()	T m . 1		ET. 2004	_	ET 2005	Т		
Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Cord Aegis BMD Block 04 PCI/			_								Target
Aegis BMD Block 04 PCI/			•								Value of
PCI/	_	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
	Aegis BMD Block 04										
		a.c									
C/CPFF VA 1,600 CONT. 1,600		C/CPFF	VA	1,600					CONT.	1,600	TBD

Project: 3020 Sea-Based Midcourse Defense (SMD)

	MDA Exh	ibit R-3 RDT&E Proj	ject Cost Ana	lysis			Date Februa	ary 2004		
APPROPRIATION/BUDGET A	ACTIVITY				R-1 NOME	NCLATURE	<u>-</u>	•		
RDT&E, DW/04 Advanced	Component I	Development and Pr	rototypes (A	CD&P)	0603882C	Ballistic Mi	ssile Defens	se Midcourse D	efense Seg	ment
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
	C/CPFF	Anteon/ VA	10,336					CONT.	10,336	TBD
	C/CPAF	BAE/ VA	1,615					CONT.	1,615	TBD
	C/CPFF	Jaycor/ VA	1,141					CONT.	1,141	TBD
	C/CPAF	Logicon/ VA	1,435					CONT.	1,435	TBD
	MIPR	NAVSEA/ DC	3,400					CONT.	3,400	TBD
	SS/CPFF	JHU/APL/ MD	1,128					CONT.	1,128	TBD
	MIPR	NSWC/DD/ VA	783					CONT.	783	TBD
	SS/CPFF	Paradigm Technologies/ VA	0					CONT.		TBD
	SS/CPAF	Lockheed Martin/ NJ	0					CONT.		TBD
	SS/CPAF	Raytheon/ AZ	0					CONT.		TBD
	Other	MDA/ VA	0					CONT.		TBD
C-ht-t-1M (C.	Various	Various	0					CONT.	21.420	TBD
Subtotal Management Services Remarks			21,438	0		0		0	21438	
Project Total Cost			386,200	0		0			386,200	
Remarks										

Project: 3020 Sea-Based Midcourse Defense (SMD)

MDA	Exh	ibit	R-4	Sche	dule	Pro	file											Date Feb		ry 2	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)									R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																			
, <u> </u>						<u></u>				,															•	<u></u>		
Fiscal Year		20	003			20	04			20	05			20	06			20	07			20	80			20	09	
	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
Testing Milestones																												
Monolithic DACS MDU1	Δ																											
Monolithic DACS MDU2		Δ																										
Monolithic DACS Flight Qualification		L	Δ																			L	L			Ш	Ш	
Manufacturing Processes and Advanced Material	ls																			•								
Aegis BMD Surv & Track Computer Program 1.2				Δ																								
Aegis BMD FM-5 Configuration			Δ																									
Integrated Flight Test																												
IFT 10	Δ																											
Development Milestones																												
Aegis BMD Surveillance & Track Upgrades	Δ <u></u>																											
TSCR	Δ																											
3.0 SDD		Δ																								Ш		
SM-3 Block 1 CDR			Δ																							Ш	\longrightarrow	
VLS PDR 1				Δ																						Ш	\longrightarrow	
																										Ш	Ш	

Project: 3020 Sea-Based Midcourse Defense (SMD)

MDA	Exh	ibit	R-4	Sche	dule	e Pro	ofile											Date Feb	ruai	ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De										R-1 NOMENCLATURE 0603882C Ballistic Missile Defense Midcourse Defense Segment																		
Fiscal Year		20	03			20	004			20	005 2006					2007 2008					2009							
	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
Flight Tests									_												_							
FM -4	Δ																											
FM-5			Δ																									
Fielding Deliveries/Ships																												
Test DDGs (Kits Only)				Δ																								
LRS&T IPR				Δ																								
																											ightharpoonup	
																											\Box	
																										\square	\dashv	
																												_
																												_
											_											-				\longrightarrow	_	
																										\longrightarrow	\dashv	

Project: 3020 Sea-Based Midcourse Defense (SMD)

					Date								
MDA E	Exhibit R-4A Scho	edule Detail			February 20	04							
APPROPRIATION/BUDGET ACTIVITY			R-1 NO	MENCLATURE									
RDT&E, DW/04 Advanced Component Deve	elopment and F	Prototypes (ACD&P) 060388	0603882C Ballistic Missile Defense Midcourse Defense Segment									
-													
		EX. 2004		T 171 200 c	THE 2005	T 171 2000	EX. 2000						
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009						
Testing Milestones		<u> </u>				<u> </u>							
Monolithic DACS MDU1	1Q	<u> </u>											
Monolithic DACS MDU2	2Q	<u> </u>											
Monolithic DACS Flight Qualification	3Q												
Manufacturing Processes and Advanced Materials													
Aegis BMD Surv & Track Computer Program 1.2	4Q												
Aegis BMD FM-5 Configuration	3Q												
Integrated Flight Test													
IFT 10	1Q												
Development Milestones													
Aegis BMD Surveillance & Track Upgrades	1Q-4Q												
TSCR	1Q												
3.0 SDD	2Q												
SM-3 Block 1 CDR	3Q												
VLS PDR 1	4Q												
Flight Tests													
FM -4	1Q												
FM-5	3Q												
Fielding Deliveries/Ships													
Test DDGs (Kits Only)	4Q												
LRS&T IPR	4Q												
1		<u> </u>			<u> </u>								
							1						
							!						

Project: 3020 Sea-Based Midcourse Defense (SMD)

]	Date			
MDA Exhibit R-2A RDT&E Project Cost Analysis				February 2	004		
APPROPRIATION/BUDGET ACTIVITY	R-	I NOMENCLA	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	P) 06	03882C Balli	stic Missile	Defense Mi	idcourse De	efense Segn	nent
COST (\$ in Thousands)	FY 200	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0709 AEGIS Ballistic Missile Defense Block 2004		0 640,892	965,800	177,600	0	0	0
RDT&E Articles Qty		0 12	19	24	11	0	0

Note: This Budget Project was previously captured in Project 3020 in FY 2003.

A. Mission Description and Budget Item Justification

RDT&E Articles: SM-3 Guided Missiles (6), destroyers configured with Aegis BMD 3.0E (3), Target (3)

The mission of Aegis BMDS is to deliver an enduring operationally effective and supportable Ballistic Missile Defense Capability in Aegis Cruisers and destroyers, in defense of the U.S., our deployed forces, allies and friends; to increase the effectiveness of the greater Ballistic Missile Defense System (BMDS) by both providing and gaining synergy from other BMDS elements; and to incrementally increase this capability by delivering evolutionary spiral upgrades as part of BMDS block upgrades.

The Aegis BMD program is the sea-based element of the Ballistic Missile Defense System (BMDS). Aegis BMD supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions by providing capability in locations within range of international waters. Aegis BMD may be deployed by Japan and possibly other countries in addition to the United States.
- In all phases of ballistic missile flight: boost, midcourse, and terminal.
- Against long- range ballistic missiles by providing surveillance and tracking support to the Block 04 Initial Defensive Operations. It provides engagement support against short and medium range ballistic missiles as part of Block 04, and will provide support against intermediate range ballistic missiles as part of BMDS Block 06 and BMDS Block 08.

Aegis BMD supports the BMDS effort to improve missile capability with the SM-3 Block 1 and Block 1A missiles. It supports the effort to improve sensors so that missiles are more effective through LRS&T support to the IDO, through development of the Aegis BMD signal processor to support Block 06/08, and through the ability to launch on Tactical Digital Information Link (TADIL). In collaboration with the MDA National Team (MDNT), Aegis BMD is contributing to the BMDS in development of engagement sequence groups (ESGs). It supports an autonomous engagement against SRBMs and MRBMs without external cueing (SM-3 Uncued ESG), supporting an autonomous engagement against SRBMs and MRBMs using external DSP and TADIL J cueing (SM-3 Cued ESG).

Aegis BMD will also provide cueing data to support GBI Launch and Engagement against LRBM and IRBM via input for the GMD Sensor Task Plan (STP) and Weapons Task Plan (WTP) respectively. Aegis BMD will support a Launch on Other engagement against MRBMs using TADIL J data from other Aegis BMD Elements (SM-3 Launch on Other ESG).

The Aegis Ballistic Missile Defense (BMD) Block 2004 program will be technically capable of initial defensive operations:

- Defeats unitary and separating targets (Short Range Ballistic Missiles and Medium Range Ballistic Missiles (SRBMs and MRBMs)) with Aegis BMD configured cruisers and STANDARD Missile-3 (SM-3) guided missiles.
- Uses a BMD modified Aegis Weapon System (AWS) and SM-3 guided missile evolved from the Aegis Light-weight Exo-atmospheric Projectile (LEAP) Intercept (ALI) demonstrated in flight tests.
- Provides three incremental capability deliveries including; Long Range Surveillance and Track to support Initial Defense Operations, preliminary engagement capability for test bed operations and for emergency use if required, and full Block 2004 ECS compliant BMD capability including integrated Ship Self Defense and Tomahawk capability.
- Provides Inter-Continental Ballistic Missile (ICBM) surveillance and track data through the Ballistic Missile Defense System (BMDS) to the Ground-based Missile Defense (GMD) system for radar cueing and development of early fire control information.
- Provides SM-3 Block 1 and IA missile configurations.
- Provides expanded battle space through the use of remote data provided by Joint Tactical Information Data System (JTIDS) (Launch on TADIL).
- Provides the ability to quickly reconfigure BMD ships into a fleet air defense capability.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

	Date
MDA Exhibit R-2A RDT&E Project Cost Analysis	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

- Ensures that AEGIS BMD operational data is available to the BMDS C2BMC Element in order to provide the deliberate planning tools and crisis action tools to evolve courses of action based upon a common view of the threat, available global resources, and warning order objectives.
- Modifies Aegis destroyers for GMD surveillance and tracking capability.
- Modifies Aegis cruisers with the Block 2004 capability.
- Provides concurrent test and operations capability as an element of the BMDS.
- Provides basis for Aegis BMD capability requested by Japan.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Weapon System Engineering		564,814	823,837
RDT&E Articles (Quantity)		9	14

FY 2004 Planned Accomplishments:

RDT&E Articles: SM-3 Guided Missiles (6), destroyers configured with Aegis BMD 3.0E (3)

AWS

For Initial Defense Operations:

- Begin LRS&T Initial Deployment Operations (IDO) utilizing Aegis BMD 3.0E with destroyers.
- Complete CDLMS V3.3 development.
- Continue coding of the Aegis BMD 3.0E computer program
- Complete engineering algorithm development and design for Surveillance & Track computer programs (SURV 1.n and Aegis BMD 3.0E) and install them in three destroyers.
- Conduct Aegis BMD 3.0E Engineering Assessment.
- Configure Aegis BMD destroyers with S&T test (SURV 1.n) configuration.
- Participate in GMD IGT2.
- Implement and integrate BMC4I IDO Architecture including Aegis BMD capability, BMDS interface control specifications, as well as definition and verification of BMC4I requirements and objectives.
- Continue element/multi-element testing and verification of the Aegis BMD Computer Program.

For emergency engagement capability:

- Continue element/multi-element testing and verification of the Aegis BMD Computer Program.
- Continue coding of the Aegis BMD 3.0 computer program.
- Conduct Aegis BMD 3.0 Test Procedures Review (TPR).
- Begin CSEDS 3.0 Testing.
- Conduct waterfront integration testing.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

		Date
MDA Exhibit R-2A RDT&E Project Cost Analysis		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Conduct the Aegis BMD 3.1 System Design Disclosure (SDD).
- Begin coding of the Aegis BMD 3.1 computer program
- Conduct Aegis BMD 3.1 Test Program Review (TPR).
- Begin CSEDS Aegis 3.1 Testing.
- Conduct the MTRS/AOE CDR.
- Conduct Wideband Aligned Images Demonstration.
- Conduct Wideband Static Image Display Demonstration.
- Continue qualification tests of Monolithic SDACS.
- Continue RF/IR discrimination guidance algorithm implementation.
- Complete IR discrimination development effort.
- Complete JTT ship installation plan for Block 04.
- Continue to support performance capability assessment engineering.
- Continue use of Captive Carry Test Beds.
- Implement and integrate BMC4I IDO architecture including Aegis BMD capability, BMDS interface control specifications as well as definition and verification of BMC4I requirements and objectives.
- Provide detailed performance assessment of Aegis BMD BLK 04 design

VLS

For emergency engagement capability:

- Conduct VLS CDR 2
- Conduct the VLS MK41 In-Process Review (IPR).

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Complete development of SAASM, VGI upgrades
- Conduct the VLS Preliminary Design Review (PDR)2
- Test Aegis BMD multi-warfare VLS capability.

Missile

For emergency engagement capability:

- Deliver five SM-3 Block 1 missiles.
- Initiate long lead material buy for an additional 6 SM-3 Block 1 missiles.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

	Date
MDA Exhibit R-2A RDT&E Project Cost Analysis	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Conduct SM-3 Design Verification Tests.
- Initiate facility upgrade to expand missile delivery throughput.
- Initiate SM-3 hardware/software integration testing for Block 2004 capability.
- Initiate SM-3 Hazard Safety tests for Block 2004 Capability.
- Initiate SM-3 Value Engineering Change Proposal (VECP) implementation engineering analysis.
- Continue SM-3 All-Up-Round obsolete material replacement development effort.
- Complete TSRM obsolete material replacement development efforts.
- Complete All-Up-Round design and construction modifications for extended shelf life.
- Initiate test equipment modification to support additional missile build.
- Initiate assembly of 6 additional SM-3 Block 1 missiles.

FY 2005 Planned Accomplishments:

RDT&E Articles: SM-3 Block 1 Missiles (5), Upgrade delivery to USS Lake Erie (1), BMD Cruiser (1), Surveillance and Tracking Destroyers (7)

AWS

For Initial Defense Operations:

- Participate in GMD IFT events and planned Aegis BMD flight missions.
- Continue to coordinate BMC4I/communication architecture engineering and integration with other BMDS elements.
- Begin Aegis BMD 3.0 engagement Initial Deployment Operations (IDO) with cruisers.
- Outfit additional six Aegis destroyers with Aegis BMD 3.0 capabilities.
- Complete Block 2004 multi-element integration and testing for BMD 3.0.
- Conduct Aegis BMD 3.0 Engineering Assessment.
- Complete SM-3 hardware/software integration testing.
- Continue SM-3 Design Verification Testing.
- Participate in GMD IFT events and Aegis BMD flight missions.
- Conduct waterfront integration testing.

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Provide engineering and development of Aegis BMD RF enhanced S-band tracking and target designation including integration and assessment of performance.
- Continue engineering development, algorithm modifications, and weapon system modifications for separating target tests, code implementations, and multi-element integration and testing of BMD 3.1.
- Participate in GMD IFT events and Aegis BMD flight missions.
- Continue to coordinate BMC4I/communication architecture engineering and integration with other BMDS elements.
- Conduct waterfront integration testing.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

VLS

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Complete development of a multi-warfare VLS capability as part of BMD.
- Conduct VLS MK41 Aegis BMD 3.1 CDR.

Missile

Block 2004 BMD and integrated ship self defense and Tomahawk capability:

- Continue SM-3 Hazard Safety Testing.
- Continue SM-3 VECP implementation engineering effort.
- Continue SM-3 Design Verification Testing.
- Deliver 5 SM-3 Block 1 missiles initiated in FY 2004.
- Continue test equipment modifications to support additional missile build.
- Initiate long lead material buys for Block 1A missiles.
- Initiate assembly of additional missiles.
- Continue All-Up-Round obsolete material replacement development effort.

NOTE: The following guidelines were used in counting the Aegis BMD RDT&E Articles:

- Missiles, targets, and ship modifications are shown in this budget exhibit in their fiscal year of delivery.
- Aegis BMD computer program deliveries are shown as a single unit delivery in the fiscal year the Engineering Assessment (EA) is conducted.

	FY 2003	FY 2004	FY 2005
Test & Evaluation		50,844	106,363
RDT&E Articles (Quantity)		3	5

For completeness, the FY 2003 Accomplishments are provided below (Funded in Budget Project 3020):

- Conducted FM-4 flight test by hitting a selected aim point on the target in ascent of flight.
- Conducted FM-5 flight test to verify Block 2004 with KW monolithic SDACS capability in an ascent phase scenario.
- Participated in GMD IFT9 flight mission, using an Aegis Destroyer to provide target-tracking data to GMD, and SM-3 KW IR Seeker Captive Carry Test Bed in support of BMDS integration.
- Participated in GMD IFT10 flight mission, using an Aegis Destroyer to provide target-tracking data to GMD, and SM-3 KW IR Seeker Captive Carry Test Bed in support of BMDS integration.
- Conducted lethality and post-intercept analysis.
- Conducted Pacific Explorer Mission I to verify Satellite TADIL J (STJ) connectivity between Aegis BMD and BMDS.
- Continued to test interoperability with other BMDS elements.
- Acquired FM targets for future flight test operations.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

		Date
MDA Exhibit R-2A RDT&E Project Cost Analysis		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2004 Planned Accomplishments:

RDT&E Articles: Targets (3)

- Conduct FM-6 flight test to verify lethal intercept of a Group A Target, KW monolithic SDACS capability, and lethality assessment.
- Participate in GMD IFT13C flight mission, using an Aegis Destroyer to provide target-tracking data to GMD.
- Participate in GMD IFT14 flight mission, using an Aegis Destroyer to provide target-tracking data to GMD, and SM-3 KW IR Seeker Captive Carry Test Bed in support of BMDS integration.
- Participate in S&T/PACEX III flight mission using an Aegis Destroyer to Detect and Track Ballistic Missiles (simulated), Link Launch Point via S TADIL J, Link Ballistic Missile Tracks/Status to BMDS and Other Link Players.
- Participate in Notional At-Sea Demonstration 3.0 flight mission using an Aegis Destroyer and Cruiser with Aegis BMD 3.0 in a Multi-Warfare Environment, Simulate Group A Engagement in a Multi-Warfare Environment, and Simulate Group B Engagement.
- Continue to test interoperability with other BMDS elements.
- Acquire two Aegis Readiness Assessment Vehicle, (ARAV) for S&T/PACEX III.
- Initiate acquisition of targets for future flight test operations.
- Acquire one Group A target for FM-6.

FY 2005 Planned Accomplishments:

RDT&E Articles: Targets (5)

- Acquire 1 Group A target for FM-7 and 1 Group B target for FM-8, 1 Group B target for FM-9, and 2 ARAVs for At-Sea Demonstration 3.0.
- Conduct FM-7 flight test to verify Aegis BMD 3.0 emergency engagement capability with lethal intercept of a Group A Target.
- Conduct FM-8 flight test to verify lethal intercept of a Group B Target.
- Conduct FM-9 flight test to verify lethal intercept of a Group B Target.
- Participate in GMD FTG-04-4a/b flight mission, using an Aegis Destroyer and/or Cruiser to exercise the system for an IDO threat.
- Conduct lethality and post-intercept analysis.
- Continue to test interoperability with other BMDS elements.
- Initiate acquisition of targets for FM-10.
- Initiate acquisition of targets for Pacific Blitz 06.

	FY 2003	FY 2004	FY 2005
SRBM Low Exo		25,234	35,600
RDT&E Articles (Quantity)			

For completeness, these FY 2003 Accomplishments are provided below. (Funded in Project 3020):

- Continued performance studies and initiate development of ship system changes to implement the low-altitude intercept guidance control changes.
- Continued performance studies and initiate development of SM-3 Third Stage Guidance Control and Rocket Motor Multi-pulse management to support the low exo-atmospheric intercept.
- Continued modifications to the models and simulation tools to support the Weapon System and SM-3 Missile changes for the low exo-atmospheric intercept capability.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

		Date
MDA Exhibit R-2A RDT&E Project Cost Analysis		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

FY 2004 Planned Accomplishments:

AWS

- Complete development of ship system algorithms and software coding changes to implement the low exo-atmospheric intercept guidance control changes.
- Continue modifications to the models and simulation tools to support the Weapon System and SM-3 Missile changes for the low exo-atmospheric intercept capability.

Missile

- Complete development of SM-3 Third Stage Guidance Control and Rocket Motor Multi-pulse management algorithms and software coding to support the low exo-atmospheric intercept.

FY 2005 Planned Accomplishments:

AWS

- Conduct firing test to validate the low exo-atmospheric intercept capability.
- Complete modifications and verification to engagement models and simulations to account for the firing test.

C. Other Program Funding Summary

								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

MDA E	DT&E Projec	et Cost Analysis	3			Date Febr	uary 2004			
MDA Exhibit R-2A RDT&E Project Cost Analysis APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)						OMENCLATU 82C Ballistic	RE		se Defense Se	ement
, , , , , , , , , , , , , , , , , , ,	<u> </u>			,					То	Total

		V 1 \						,
FV 2003	FY 2004	FY 2005	FY 2006	FY 2007	FV 2008	FY 2009	To Complete	Total Cost
11 2003	11 2004	11 2003	11 2000	11 2007	1 1 2000	11 2007	Complete	Cost
	625 792	716 407	(72 476	(5(150	654.015	600 110	G .: .	
U	635,782	/16,42/	6/3,4/6	656,152	654,015	688,119	Continuing	Continuing
,								ı
0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
,								
887,616	0	0	0	0	0	0	Continuing	Continuing
								
138,922	0	0	0	0	0	0	Continuing	Continuing
,								
138,791	0	0	0	0	0	0	Continuing	Continuing
7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
,								
0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
	35,331 887,616 138,922 138,791 7,432	0 635,782 0 305,309 35,331 92,449 887,616 0 138,922 0 138,791 0 7,432 14,327	FY 2003 FY 2004 FY 2005 0 635,782 716,427 0 305,309 418,608 35,331 92,449 141,923 887,616 0 0 138,922 0 0 138,791 0 0 7,432 14,327 13,884	FY 2003 FY 2004 FY 2005 FY 2006 0 635,782 716,427 673,476 0 305,309 418,608 421,049 35,331 92,449 141,923 146,099 887,616 0 0 0 138,922 0 0 0 138,791 0 0 0 7,432 14,327 13,884 12,958	FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 0 635,782 716,427 673,476 656,152 0 305,309 418,608 421,049 445,971 35,331 92,449 141,923 146,099 145,112 887,616 0 0 0 0 138,922 0 0 0 0 138,791 0 0 0 0 7,432 14,327 13,884 12,958 12,850	FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 FY 2008 0 635,782 716,427 673,476 656,152 654,015 0 305,309 418,608 421,049 445,971 456,339 35,331 92,449 141,923 146,099 145,112 151,727 887,616 0 0 0 0 0 138,922 0 0 0 0 0 138,791 0 0 0 0 0 7,432 14,327 13,884 12,958 12,850 13,158	FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 FY 2008 FY 2009 0 635,782 716,427 673,476 656,152 654,015 688,119 0 305,309 418,608 421,049 445,971 456,339 469,621 35,331 92,449 141,923 146,099 145,112 151,727 154,583 887,616 0 0 0 0 0 0 138,922 0 0 0 0 0 0 138,791 0 0 0 0 0 0 7,432 14,327 13,884 12,958 12,850 13,158 13,476	FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 FY 2008 FY 2009 Complete 0 635,782 716,427 673,476 656,152 654,015 688,119 Continuing 0 305,309 418,608 421,049 445,971 456,339 469,621 Continuing 35,331 92,449 141,923 146,099 145,112 151,727 154,583 Continuing 887,616 0 0 0 0 0 0 Continuing 138,922 0 0 0 0 0 0 Continuing 138,791 0 0 0 0 0 0 Continuing 7,432 14,327 13,884 12,958 12,850 13,158 13,476 Continuing

D. Acquisition Strategy

The Aegis BMD element will follow the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has implemented a missile defense acquisition strategy using a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities. After considering all the technical and management aspects of the program and to meet the requirements presented by the ballistic missile threat, the Aegis BMD program has awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the SM-3 missile and Aegis Weapon System, respectively.

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

AWS FFRDC MA 0 5,400 2Q 5,000 2Q CONT. 10,400 TBE JHU/APL/ AWS SS/CPFF MD 0 2,300 1Q 1,900 1Q CONT. 4,200 TBE NSWC/DD/ AWS MIPR VA 0 12,444 1Q 15,419 1Q CONT. 27,863 TBE NSWC/PHD/ AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,600 TBE NSWC/PHD/ AWS MIPR CA 0 11,016 1Q 7,318 1Q CONT. 18,334 TBE AWS VARIOUS 0 7,150 1Q 15,180 1Q CONT. 22,330 TBE RAYTHOEN/		MDA E-1	PLAD A DDT CE D		1			Date	2004			
No. No.	A DDD ODDI A TION/DIIDCET A		ibit R-3 RDT&E Proj	ect Cost Ana	lysis	D 1 NOMEN	CI ATUDE	Februal	ry 2004			
Performing			Davidanment and Dr	otatrmas (A	CD 8-D)							
Contact Performing Total Pry 2004 Award Pry 2005 Award Cost Cost Value of Cost			Development and Fi	ototypes (A	CD&F)	0003662C 1	Danisuc Iviis	she Defense	e Mildcourse i	bereitse Segi	пені	
Method Activity & PYs FY 2004 Award FY 2005 Award Cost to Co	1. Product Development Cost (\$)		Darforming	Total		EV 2004		EV 2005			Torget	
Cost Categories:			_		FY 2004		FY 2005		Cost to	Total	-	
Marco	Cost Categories:											
AWS SS/CPIF NI 0 133,502 2Q 197,850 2Q CONT. 331,352 TBI MITTAL/ AWS FFRDC MA 0 5,400 2Q 5,000 2Q CONT. 10,400 TBI AWS SS/CPF MD 0 2,300 1Q 1,900 1Q CONT. 4,200 TBI NSWC/DD/ AWS MIPR VA 0 12,444 1Q 15,419 1Q CONT. 27,863 TBI MITTE/ AWS MIPR VA 0 5550 1Q 1,291 1Q CONT. 1,841 TBI AWS MIPR VA 0 5,000 1Q 6,600 1Q CONT. 11,600 TBI AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,841 TBI AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,841 TBI AWS Various VARIOUS 0 7,150 1Q 15,180 1Q CONT. 18,334 TBI RAYTHOEN/ MISSILE SS/CPIF AZ 0 266,766 2Q 414,018 2Q CONT. 680,784 TBI MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBI MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBI MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBI MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBI MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 17,263 TBI MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 5,540 TBI MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBI MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBI MISSILE MIPR NM NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBI	_	a Type	Location	Cost		Bute	Cost	Bute	Complete	Cost	Contract	
AWS	vveupon system Engineering		Lockheed Martin/									
AWS FFRDC MA 0 5,400 2Q 5,000 2Q CONT. 10,400 TBL AWS SS/CPFF MD 0 0 2,300 1Q 1,900 1Q CONT. 4,200 TBL NSWC/DD/ AWS MIPR VA 0 12,444 1Q 15,419 1Q CONT. 27,863 TBL MITRE/ AWS MIPR VA 0 550 1Q 1,291 1Q CONT. 1,841 TBL NSWC/PHD/ AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,600 TBL AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 18,334 TBL AWS MADA 0 11,016 1Q 7,318 1Q CONT. 18,334 TBL AWS Various VARIOUS 0 7,150 1Q 15,180 1Q CONT. 22,330 TBL MISSILE SS/CPIF AZ 0 266,766 2Q 414,018 2Q CONT. 680,784 TBL MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBL MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBL MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBL MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBL MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBL MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBL MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBL	AWS	SS/CPIF		0	133,502	20	197.850	20	CONT.	331.352	TBD	
AWS FFRDC MA 0 5,400 2Q 5,000 2Q CONT. 10,400 TBL							,					
AWS SS/CPFF MD 0 2,300 1Q 1,900 1Q CONT. 4,200 TBE NSWC/DD/	AWS	FFRDC		0	5,400	2Q	5,000	2Q	CONT.	10,400	TBD	
AWS MIPR VA 0 12,444 1Q 15,419 1Q CONT. 27,863 TBI MITRE/ AWS MIPR VA 0 550 1Q 1,291 1Q CONT. 1,841 TBI NSWC/PHD/ AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,600 TBI AWS MIPR CA 0 11,016 1Q 7,318 1Q CONT. 18,334 TBI AWS Various VARIOUS 0 7,150 1Q 15,180 1Q CONT. 22,330 TBI RAYTHOEN/ MISSILE SS/CPIF AZ 0 266,766 2Q 414,018 2Q CONT. 680,784 TBI MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBI MIT/LL/ MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBI NSWC/DD/ MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBI NSWC/DD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBI MISSILE MIPR CA 0 1,770 1Q 3,770 1Q CONT. 5,540 TBI MISSILE MIPR NM 0 1,1770 1Q 3,770 1Q CONT. 5,540 TBI			JHU/APL/				·	-		·		
AWS MIPR VA 0 12,444 1Q 15,419 1Q CONT. 27,863 TBL MITRE/ AWS MIPR VA 0 5550 1Q 1,291 1Q CONT. 1,841 TBL AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,600 TBL AWS MIPR CA 0 11,016 1Q 7,318 1Q CONT. 18,334 TBL AWS Various VARIOUS 0 7,150 1Q 15,180 1Q CONT. 22,330 TBL RAYTHOEN/ MISSILE SS/CPIF MD 0 9,700 2Q 414,018 2Q CONT. 17,338 TBL MISSILE SS/CPIF MD 0 0,9,700 2Q 7,638 2Q CONT. 17,338 TBL MISSILE SS/CPIF MD 0 0,9,700 1Q 2,687 1Q CONT. 3,287 TBL MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBL NSWC/PHD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 5,540 TBL MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBL MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBL NSWC/CD/	AWS	SS/CPFF	MD	0	2,300	1Q	1,900	1Q	CONT.	4,200	TBD	
AWS MIPR VA 0 550 1Q 1,291 1Q CONT. 1,841 TBE NSWC/PHD/			NSWC/DD/									
AWS MIPR VA 0 550 1Q 1,291 1Q CONT. 1,841 TBE NSWC/PHD/	AWS	MIPR	VA	0	12,444	1Q	15,419	1Q	CONT.	27,863	TBD	
NSWC/PHD/ CA			MITRE/									
AWS MIPR CA 0 5,000 1Q 6,600 1Q CONT. 11,600 TBE AWS MDA 0 11,016 1Q 7,318 1Q CONT. 18,334 TBE AWS Various VARIOUS 0 7,150 1Q 15,180 1Q CONT. 22,330 TBE RAYTHOEN/ MISSILE SS/CPIF AZ 0 266,766 2Q 414,018 2Q CONT. 680,784 TBE MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBE MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBE MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBE MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT.	AWS	MIPR	VA	0	550	1Q	1,291	1Q	CONT.	1,841	TBD	
AWS			NSWC/PHD/									
AWS VARIOUS 0 7,150 1Q 15,180 1Q CONT. 22,330 TBL RAYTHOEN/ MISSILE SS/CPIF AZ 0 266,766 2Q 414,018 2Q CONT. 680,784 TBL MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBL MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBL NISSILE NSWC/DD/ MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBL MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBL WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBL NSWC/CD/		MIPR				_		_		,	TBD	
RAYTHOEN/ AZ				0	11,016	1Q	7,318	1Q	CONT.	18,334	TBD	
MISSILE SS/CPIF AZ 0 266,766 2Q 414,018 2Q CONT. 680,784 TBL JHU/APL/ MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBL MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBL NSWC/DD/ MISSILE NSWC/PHD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBL WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBL NSWC/CD/	AWS	Various		0	7,150	1Q	15,180	1Q	CONT.	22,330	TBD	
MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBE MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBE NSWC/DD/ MISSILE NSWC/PHD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBE WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/												
MISSILE SS/CPIF MD 0 9,700 2Q 7,638 2Q CONT. 17,338 TBE MIT/LL/ MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBE NSWC/DD/ MISSILE NSWC/PHD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBE WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/	MISSILE	SS/CPIF		0	266,766	2Q	414,018	2Q	CONT.	680,784	TBD	
MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBE NSWC/DD/ NSWC/PHD/ NSWC/PHD/ NSWC/PHD/ NIFT NIFT												
MISSILE FFRDC MA 0 600 1Q 2,687 1Q CONT. 3,287 TBE NSWC/DD/ MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBE NSWC/PHD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBE WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/	MISSILE	SS/CPIF		0	9,700	2Q	7,638	2Q	CONT.	17,338	TBD	
MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBE NSWC/PHD/												
MISSILE MIPR VA 0 7,740 1Q 9,523 1Q CONT. 17,263 TBE NSWC/PHD/ MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBE WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/	MISSILE	FFRDC		0	600	1Q	2,687	1Q	CONT.	3,287	TBD	
MISSILE NSWC/PHD/ O 3,147 1Q 5,507 1Q CONT. 8,654 TBE WSMR/ MISSILE MIPR NM O 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/ O 1												
MISSILE MIPR CA 0 3,147 1Q 5,507 1Q CONT. 8,654 TBE WSMR/ MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/	MISSILE	MIPR		0	7,740	1Q	9,523	1Q	CONT.	17,263	TBD	
MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE	Moon E	MIDD			2.145	10	5 505	10	CONT	0.654	TED 5	
MISSILE MIPR NM 0 1,770 1Q 3,770 1Q CONT. 5,540 TBE NSWC/CD/ NSWC/CD/ Image: Control of the control of	MISSILE	MIPK		0	3,147	1Q	5,507	1Q	CONT.	8,654	IRD	
NSWC/CD/	MICCH E	MIDD			1 770	10	2 770	10	CONT	5 5 4 0	TDD	
	MISSILE	MIPK		0	1,770	1Q	3,770	1Q	CONT.	5,540	IBD	
WILDSTELL WILL CA 0 334 2Q 0 2Q CON1. 334 IBI	MISSII E	MIDD		0	551	20	0	20	CONT	551	TRD	
	MISSILE	WIIFK	CA	0	334		0	2Q	CONT.	334	тър	

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

				_			Date	•••		
		ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Februa	ry 2004		
APPROPRIATION/BUDGET A					R-1 NOMENCLATURE					
RDT&E, DW/04 Advanced	Component I	Development and Pr	ototypes (A	CD&P)	0603882C 1	Ballistic Mis	ssile Defens	e Midcourse I	Defense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		NSWC/IH/								
MISSILE	MIPR	MD	0	1,206	2Q	1,472	2Q	CONT.	2,678	TBD
		NAWC/CL/								
MISSILE	MIPR	CA	0	1,066	1Q	2,240	1Q	CONT.	3,306	TBD
		MDA/								
MISSILE		VA	0	9,575	1Q	11,640	1Q	CONT.	21,215	TBD
		VARIOUS/								
MISSILE	Various	VARIOUS	0	5,573	1Q	15,081	1Q	CONT.	20,654	TBD
		NSWC/CD/								
MISSILE	MIPR	CA	0	2,000	1Q				2,000	
		VA SITES/								
MISSILE	MIPR	VA	0	3,900	1Q				3,900	
SRBM Low Exo										
		Lockheed Martin/								
	SS/CPIF	NJ	0	2,500	2Q	3,500	2Q	CONT.	6,000	TBD
		Raytheon/								
	SS/CPIF	AZ	0	22,734	2Q	32,100	2Q	CONT.	54,834	TBD
Subtotal Product Development			0	516,193		759,734		0	1275927	
Remarks										
H.G G (A: TI										
II. Support Costs Cost (\$ in Tho	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Weapon System Engineering	a Type	Location	Cost	Cost	Bute	Cost	Bute	Complete	Cost	Contract
reapon System Engineering		JHU/APL/								
	SS/CPFF	MD	0	7,250	2Q	7,250	2Q	CONT.	14,500	TBD
		Lockheed Martin/		.,250		.,200	-4	331,11	,	120
	SS/CPAF	NJ	0		2Q		2Q	CONT.		TBD
		MIT/LL/								
	FFRDC	MA	0	600	1Q	1,450	1Q	CONT.	2,050	TBD
						,	- (,	

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

	MDA Exhi	bit R-3 RDT&E Pro	ject Cost Ana	lysis			Date Februa :	ry 2004		
APPROPRIATION/BUDGET	ΓACTIVITY				R-1 NOMENCLATURE					
RDT&E, DW/04 Advance	ed Component D	Development and P	rototypes (A	CD&P)	0603882C 1	Ballistic Mis	ssile Defens	e Midcourse I	Defense Seg	ment
	Contract Method	Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
	MIPR	NSWC/DD/ VA	0	3,723	1Q	5,723	1Q	CONT.	9,446	TBD
	SS/CPAF	Raytheon/ AZ	0		2Q		2Q	CONT.		TBD
	SS/CPFF	SEG/ VA	0	550	1Q	8,316	1Q	CONT.	8,866	TBD
	SS/CPFF	BMPCOE/ MD	0	700	1Q	514	1Q	CONT.	1,214	TBD
	SS/CPFF	MITRE/ VA	0	825	1Q	1,290	1Q	CONT.	2,115	TBD
		MDA	0	985	1Q	3,481	1Q	CONT.	4,466	TBD
	Various	VARIOUS/ VARIOUS	0	1,078	1Q	4,304	1Q	CONT.	5,382	TBD
	MIPR	NSWC/Corona/ CA	0	400	1Q	400	1Q		800	
	MIPR	NSWC/PHD/ CA	0	1,289	1Q	1,734	1Q		3,023	
	MIPR	SPAWAR/ CA	0	2,725	1Q	4,237	1Q		6,962	
	MIPR	ANTEON/ VA	0	1,200	1Q		1Q		1,200	
Subtotal Support Costs			0	21,325		38,699		0	60024	
Remarks	(d •									
III. Test and Evaluation Cost	Contract	Performing	Total		FY 2004		FY 2005	l		Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Test & Evaluation										
	MIPR	PMRF/ HI	0	7,030	1Q	7,300	1Q	CONT.	14,330	TBD

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

	MDA Exhi	bit R-3 RDT&E Proj	ject Cost Ana	lysis			Date Februa i	ry 2004			
APPROPRIATION/BUDGET A					R-1 NOMENCLATURE						
RDT&E, DW/04 Advanced	Component I	Development and Pr	rototypes (A	CD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment						
	Contract	Performing	Total		FY 2004		FY 2005			Target	
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of	
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract	
		HTS/									
	C/CPFF	CA	0	2,695	2Q	2,805	2Q	CONT.	5,500	TBD	
		Xontech/									
	SS/CPAF	CA	0	1,015	2Q	1,054	2Q	CONT.	2,069	TBD	
		NSWC/PHD/									
	MIPR	CA	0	5,053	1Q	8,163	1Q	CONT.	13,216	TBD	
		NAWC/PM/									
	MIPR	CA	0	2,295	1Q	4,500	1Q	CONT.	6,795	TBD	
		NSWC/Corona/									
	MIPR	CA	0	889	1Q	1,602	1Q	CONT.	2,491	TBD	
		NSWC/DD/									
	MIPR	VA	0	6,608	1Q	13,122	1Q	CONT.	19,730	TBD	
		CINPACFLT/									
	MIPR	HI	0	0	1Q	605	1Q	CONT.	605	TBD	
	ag (GDEE	JHU/APL/		7 100	20	5.050	20	CONT	12.050	TD D	
	SS/CPFF	MD	0	7,100	2Q	5,850	2Q	CONT.	12,950	TBD	
	MDD	SMDC/ AL	0	6,000	10	52,000	10	CONT	50,000	TDD	
	MIPR	SPAWAR/	0	6,900	1Q	52,000	1Q	CONT.	58,900	TBD	
	MIPR	SPAWAR/ CA	0	2,022	1Q	1,763	10	CONT.	3,785	TBD	
	MIPK	DOI/	0	2,022	IQ	1,/63	1Q	CON1.	3,783	180	
	MIPR	DOI/ DC	0	0	1Q	1,017	1Q	CONT.	1,017	TBD	
	WIII K	AIRPAC/	0	0	IQ	1,017	1Q	CONT.	1,017	100	
	MIPR	HI	0	868	1Q	903	1Q	CONT.	1,771	TBD	
	WIII K	MDA	0	3,270	1Q 1Q	4,721	1Q 1Q	CONT.	7,991	TBD	
		VARIOUS/	0	3,270	1Q	4,721	10	CONT.	1,991	100	
	Various	VARIOUS	0	2,578	1Q	958	1Q	CONT.	3,536	TBD	
	, arious	WSMR/		2,576	1.0	750	10	20111.	3,330	100	
	MIPR	CA	0	2,521	1Q	0	1Q		2,521		
Subtotal Test and Evaluation			0	50,844	1.4	106,363	14	0	157207		
Decided For the Distriction	1 1			30,011		100,505		ŭ	13,207		

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

							Date			
		ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Februar	ry 2004		
APPROPRIATION/BUDGET A					R-1 NOMEN					
RDT&E, DW/04 Advanced	Component I	Development and Pr	ototypes (A	CD&P)	0603882C I	Ballistic Mis	ssile Defens	e Midcourse I	Defense Seg	ment
Remarks										
IV. Management Services Cost (\$ in Thousands)								
TVI Wallagement Services Cost (Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Weapon System Engineering										
		NAVSEA/								
		DC	0	13,000	1Q	13,463	1Q	CONT.	26,463	TBD
		JHU/APl/								
	SS/CPFF	MD	0	2,300	2Q	2,300	2Q	CONT.	4,600	TBD
		NSWC/DD/								
	MIPR	VA	0	1,700	1Q	1,700	1Q	CONT.	3,400	TBD
		Anteon/								
	C/CPFF	VA	0	23,215	1Q	24,862	1Q	CONT.	48,077	TBD
		Paradigm/								
	SS/CPFF	VA	0	5,386	1Q	5,747	1Q	CONT.	11,133	TBD
		Lockheed Martin/								
	SS/CPAF	NJ	0	1,200	1Q	1,200	1Q	CONT.	2,400	TBD
		Raytheon/								
	SS/CPAF	AZ	0	1,400	2Q	1,400	2Q	CONT.	2,800	TBD
		MDA	0	3,379	1Q	7,481	1Q	CONT.	10,860	TBD
	¥7. ·	Various/		0.50	1.0	2051	1.0	CONT	2.004	mp.r
	Various	Various	0	950	1Q	2,851	1Q	CONT.	3,801	TBD
Subtotal Management Services			0	52,530		61,004		0	113534	
Remarks										
Project Total Cost			0	640,892		965,800			1,606,692	
Remarks	1		1	· · · · · · · · · · · · · · · · · · ·	I.	*				

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

MDA	Exh	ibit	R-4	Sche	edule	e Pro	file											Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	nme	ent a	nd	Prof	totvi	nes (ACI	D&F)		l NO 0388					ssile	Def	enso	e Mi	dco	urse	Def	ense	e Se	gme	nt	
12 1 Way 2 11/10 1 1 2 at white the component 2 at	, 610	P				,	(-	,	00						55224									5		
Fiscal Year		20	03			20	004			20	005			20	06			20	07			20	80			20	09	
	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
Testing Milestones					_													_	•									
Monolithic DACS MDU1	Δ																											
Monolithic DACS MDU2		Δ																										
Monolithic DACS Flight Qualification			Δ																									
Third Stage Rocket Motor						Δ																						
HERO Test						Δ																						
Pacific Explorer III								Δ																				
At-Sea Demo 3.0 (Concurrent with FM-7)										Δ																		
At-Sea Demo 3.1													Δ															
Manufacturing Processes and Advanced Materia	ls																											
Aegis BMD FM 5 configuration			Δ																									
Surveillance & Track Computer Program 1.N				Δ																								
Aegis BMD FM 6 configuration					Δ																							
04 CP 3.0E								Δ																				
Aegis BMD FM 7 configuration										Δ																		
Block 04 Computer Program 3.0										Δ																		

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

MDA	Exh	nibit]	R-4 :	Sche	dule	Pro	file											Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	nt a	nd l	Prot	otyp	oes (ACI	D&I	P)		1 NO 0388					ssile	Def	ense	e Mi	idco	urse	Def	ense	e Se	gmei	nt	
Fiscal Year		20	03			20	04			20	05			20	06			20	07			20	800			20	09	
	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
Manufacturing Processes and Advanced Material	ls																											
Block 04 Computer Program 3.1													Δ															
Flight Tests																												
FM-4	Δ																											
FM-5			Δ																							Ш	Ш	
FM-6					Δ																					Ш		
FM-7										Δ																Ш		<u> </u>
FM-8											Δ															Ш	Ш	
FM-9												Δ														Ш		<u> </u>
FM-10		Ш												Δ												Ш	Ш	<u> </u>
Integrated Flight Test																												
IFT 10	Δ																									Ш	\vdash	
IFT 13C					<u>_</u>			rackleright																		\vdash		
IFT 14					Δ			\triangle	•			Α.														\vdash		
FT-04-1									<u> </u>	<u> </u>		$\stackrel{\triangle}{\vdash}$										-				\vdash	\vdash	
FTG-04-4a/b									Δ			ightharpoons														\vdash		┟─┤╏
																										Ш	Ш	┸┛╿

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

APPROPRIATION/BUDGET ACTIVITY		it R-4	Sche	dule	Pro	file											Date Feb i	ruar	ry 20	004							
RDT&E, DW/04 Advanced Component Deve							ACI	D&P	')	R-1 I 060 3									•		urse	Def	ense	e Seş	gmen	ıt	
Fiscal Year	2	2003			20	004			200)5			200	06			20	07			20	08			200)9	
	1 2		4	1	2	3	4	1	2		4	1	2	3	4	1	2	3	4	1	2	3	4	1			4
Development Milestones																											
TSCR L	Δ																										
SM-3 Block I CDR		Δ																									
VLS PDR 1			Δ																								
Block 04 CDR Report				Δ				ĹЦ										ackslash				ackslash					
VLS CDR 1	丄	$oldsymbol{ol}}}}}}}}}}}}}}}}}$			Δ																						
VLS PDR 2	$oldsymbol{ol}}}}}}}}}}}}}}}}}}$					Δ																Ш					
SM-3 Block 1A CDR	$oldsymbol{\perp}$	$oldsymbol{ol}}}}}}}}}}}}}}}}}}$				Δ																Ш					
VLS CDR 2	丄	\perp						Δ																		\Box	
Fielding Deliveries/Ships																											
Test DDGs (Kits Only)	\bot		Δ					Ш										Ш	Ш		Ш					ightharpoonup	
Surveillance & Tracking DDGs (BMD 3.0)	\perp	\bot						Δ													Ш				\perp	\perp	
Engagement Cruiser	\perp									4	Δ								igsqcup		\square				\perp	\dashv	
Surveillance & Tracking DDGs (BMD 3.1)	丄	\bot			Ш			Ш				Δ						Ш	Ш		Ш	Щ			\dashv	\dashv	_
Engagement DDGs (BMD 3.1)	丄	\bot			Ш	Ш		Щ						Δ				Ш	Ш		Ш	Щ			\dashv	\dashv	_
		\perp						Ш																		\perp	

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

MDA	Exh	ibit]	R-4 \$	Sche	dule	Pro	file											Date Feb	ruai	y 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	nt a	nd l	Prot	otyp	oes (AC	D&I	P)				NCL. Ball			ssile	Def	ense	e Mi	dco	urse	Def	ense	e Seg	gmer	ıt	
Fiscal Year		20	03			20	04			20	05			20	06			20	07			20	08			200)9	
	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
Fielding Deliveries/Missiles				,																				,				
Accelerated Block I Missiles							Δ	┢																				
Block 1A Missiles														4					\triangle									
Block I Missiles										Δ			Δ															
																												_
																												_
																												_
																												_
																												_
																												_
																												_
																												_
																												_

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

MDA	Exhibit R-4A Sch	edule Detail				Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY					MENCLATURE			
RDT&E, DW/04 Advanced Component De	evelopment and I	Prototypes (ACI	D&P)	0603882	2C Ballistic Mis	sile Defense Mid	lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY 2	005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones								
Monolithic DACS MDU1	1Q							
Monolithic DACS MDU2	2Q							
Monolithic DACS Flight Qualification	3Q							
Third Stage Rocket Motor		2Q						
HERO Test		2Q						
Pacific Explorer III		4Q						
At-Sea Demo 3.0 (Concurrent with FM-7)			20)				
At-Sea Demo 3.1					1Q			
Manufacturing Processes and Advanced Materials								
Aegis BMD FM 5 configuration	3Q							
Surveillance & Track Computer Program 1.N	4Q							
Aegis BMD FM 6 configuration		1Q						
04 CP 3.0E		4Q						
Aegis BMD FM 7 configuration			20)				
Block 04 Computer Program 3.0			20)				
Block 04 Computer Program 3.1					1Q			
Flight Tests								
FM-4	1Q							
FM-5	3Q							
FM-6		1Q						
FM-7			20)				
FM-8			30)				
FM-9			40)				
FM-10					2Q			
Integrated Flight Test								
IFT 10	1Q							
IFT 13C		1Q-4Q						
IFT 14		1Q-4Q						
FT-04-1			1Q-4	4Q				

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

MI	OA Exhibit R-4A Sch	nedule Detail			Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component	Development and l	Prototypes (ACI		OMENCLATURE 82C Ballistic Mis	ssile Defense Mic	dcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
FTG-04-4a/b			1Q-4Q				
Development Milestones							
TSCR	1Q						
SM-3 Block I CDR	3Q						
VLS PDR 1	4Q						
Block 04 CDR Report		1Q					
VLS CDR 1		2Q					
VLS PDR 2		3Q					
SM-3 Block 1A CDR		3Q					
VLS CDR 2			1Q				
Fielding Deliveries/Ships							
Test DDGs (Kits Only)	4Q						
Surveillance & Tracking DDGs (BMD 3.0)			1Q				
Engagement Cruiser			3Q-4Q				
Surveillance & Tracking DDGs (BMD 3.1)				1Q			
Engagement DDGs (BMD 3.1)				3Q			
Fielding Deliveries/Missiles							
Accelerated Block I Missiles		3Q-4Q					
Block 1A Missiles				2Q-4Q	1Q-3Q		
Block I Missiles			2Q-4Q	1Q			

Project: 0709 AEGIS Ballistic Missile Defense Block 2004

				Date			
MDA Exhibit R-2A RDT&E Project Justification				February 2	004		
APPROPRIATION/BUDGET ACTIVITY	R-	1 NOMENCLA	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	P) 00	603882C Balli	stic Missile	Defense Mi	dcourse De	fense Segn	nent
COST (\$ in Thousands)	FY 200	3 FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0809 AEGIS Ballistic Missile Defense Block 2006		0 23,585	106,494	674,667	776,288	50,325	0
RDT&E Articles Qty		0 0	0	8	15	29	9

Note: This Budget Project was previously captured in Project 3020 in FY 2003.

A. Mission Description and Budget Item Justification

The mission of Aegis BMDS is to deliver an enduring operationally effective and supportable Ballistic Missile Defense Capability in Aegis Cruisers and destroyers, in defense of the U.S., our deployed forces, allies and friends; to increase the effectiveness of the greater Ballistic Missile Defense System (BMDS) by both providing and gaining synergy from other BMDS elements; and to incrementally increase this capability by delivering evolutionary spiral upgrades as part of BMDS block upgrades.

The Aegis BMD program is the sea-based element of the Ballistic Missile Defense System (BMDS). Aegis BMD supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions by providing capability in locations within range of international waters. Aegis BMD may be deployed by Japan and possibly other countries in addition to the United States.
- In all phases of ballistic missile flight: boost, midcourse, and terminal.
- Against long- range ballistic missiles by providing surveillance and tracking support to the Block 04 Initial Defensive Operations. It provides engagement support against short and medium range ballistic missiles as part of Block 04, and will provide support against intermediate range ballistic missiles as part of BMDS Block 06 and BMDS Block 08.

Aegis BMD supports the BMDS effort to improve missile capability with the SM-3 Block 1 and Block 1A missiles. It supports the effort to improve sensors so that missiles are more effective through LRS&T support to the IDO, through development of the Aegis BMD signal processor to support Block 06/08, and through the ability to launch on Tactical Digital Information Link (TADIL). In collaboration with the MDA National Team (MDNT), Aegis BMD is contributing to the BMDS in development engagement sequence groups (ESGs). It supports an autonomous engagement against SRBMs and MRBMs without external cueing (SM-3 Uncued ESG), and external DSP and TADIL J cueing (SM-3 Cued ESG).

Aegis BMD will also provide cueing data to support GBI Launch and Engagement against LRBM and IRBM via input for the GMD Sensor Task Plan (STP) and Weapons Task Plan (WTP) respectively. Aegis BMD will support a Launch on Other engagement against MRBMs using TADIL J data from other Aegis BMD Elements (SM-3 Launch on Other ESG).

Aegis Ballistic Missile Defense (BMD) Block 2006 will evolve (through spiral capability driven development) from the Block 2004 Aegis Weapon System (AWS) with development focused on enhancing BMDS engagement sequence support:

- Defeats unitary and separating targets (Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), and Intermediate Range Ballistic Missiles (IRBM) with Aegis BMD configured cruisers, destroyers and STANDARD Missile-3 (SM-3) guided missiles.
- Provides militarily useful capability.
- Provides improved battle space to the Block 2004 capability through such capabilities as Launch on Remote.
- Provides improved Inter-Continental Ballistic Missile (ICBM) surveillance and track data through the BMDS to the Ground-based Midcourse Defense (GMD) system for radar cueing and development of early fire control information.
- Provides improved tracking and discrimination with synthetic wide bandwidth AN/SPY-1 Radar modifications.
- Modifies additional Aegis destroyers with Block 2004 GMD surveillance tracking capability to a BMD engage capability.
- Provides the ability to rapidly reconfigure BMD ships into a fleet air defense capability.
- Provides a total of fifteen Aegis destroyers equipped with Aegis BMD capability.
- Provides a total of three Aegis cruisers equipped with Aegis BMD capability.
- Supports a Launch on Other engagement against MRBMs using TADIL J data from other BMDS Elements (SM-3 Launch on Other ESG)

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment
r		· · · · · · · · · · · · · · · · · · ·

B. Accomplishments/Planned Program

B: Accompnishments/1 famica 110gram			
	FY 2003	FY 2004	FY 2005
Weapons System Engineering		23,585	106,494
RDT&E Articles (Quantity)			

FY 2004 Planned Accomplishments:

AWS

- Transition the High Range Resolution efforts into the Aegis BMD Signal Processor.
- Continue fabrication and start incremental testing of a prototype AN/SPY-1 BMDS Signal Processor (BSP).
- Demonstrate real time display enhanced S-Band tracking and target designation.
- Initiate definition of Block 06 engagement coordination methods, integration and capabilities including engagement coordination among BMDS elements.
- Continue to support performance capability assessment engineering.
- Continue IR discrimination risk reduction and algorithm development

FY 2005 Planned Accomplishments:

AWS

- Complete fabrication and start incremental testing of prototype AN/SPY-1 Aegis BMD Signal Processor.
- Commence at-sea testing of prototype AN/SPY-1 BSP.
- Demonstrate real time feature extraction capability using the Aegis BMD signal processor prototype.
- Continue IR discrimination risk reduction and algorithm development
- Continue to support performance capability assessment engineering.
- Initiate development of Block 2006 Aegis Weapon System computer program upgrade Aegis BMD 3.2.
- Continue development of Aegis BMD communication architecture ensuring interface and interoperability is coordinated with C2 BMC, GMD, Patriot, ABL, THAAD, KI Boost.

Missile

- Provide an option for an alternate DACS that will increase divert capability.

C. Other Program Funding Summary

C. Other Frogram Funding Summary									
								To	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

							D	Date			
MDA :	Exhibit R-2A l	RDT&E Proje	ct Justification				F	ebrua!	ry 2004		
APPROPRIATION/BUDGET ACTIVITY					R-1 NO	OMENCLATU:	RE				
RDT&E, DW/04 Advanced Compone	ent Developm	ent and Prot	otypes (ACD	&P)	06038	82C Ballistic	Missile I	Defens	e Midcour	se Defense Se	gment
										To	Total

								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing

D. Acquisition Strategy

The Aegis BMD element will follow the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The Department has restructured the missile defense acquisition strategy into a multi-path approach to assure that the most effective missile defense is available at the earliest possible time. The Aegis BMD element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities. The best approach (competitive or selected source) will be determined after considering all the technical and management aspects of the program.

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

	MDA Feb	ibit R-3 RDT&E Proje	ect Cost Ano	lveie			Date Februa i	rv 2004		
APPROPRIATION/BUDGET		ibit K-3 KD1&E 110j	ect Cost Alla		R-1 NOMEN	CLATURE	rebruar	1 y 2004		
RDT&E, DW/04 Advance		Davalanment and Pr	ototypes (A				sila Dafansa	e Midcourse D	ofonca Sam	mant
	<u> </u>	bevelopinent and 11	ototypes (A	CD&I)	0003002€ 1	Danisuc IVIIS	osne Detense	ivilucourse L	refelise segi	ПСП
I. Product Development Cost	Contract	Performing	Total		FY 2004		FY 2005	1	<u> </u>	Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Award Date	Cost	Date	Cost to	Cost	Contract
Weapons System Engineering	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
weapons System Engineering		Lockheed Martin/								
AWG	GG/GDAE	NJ	0	11.500	10	72.214	10	CONT	04.714	CONT
AWS	SS/CPAF		0	11,500	1Q	73,214	1Q	CONT.	84,714	CON
AMIG	EED D.C	MIT/LL/	0		10	2 (0.4	10		2 (0.4	
AWS	FFRDC	MA	0		1Q	3,684	1Q		3,684	
	an-	JHU/APL/			4.0	4.200			4.200	
AWS	CPFF	MD	0		1Q	1,200	1Q		1,200	
		NSWC/DD/								
AWS	MIPR	NSWC/DD/ VA	0		1Q	1,100	1Q		1,100	
	MIPR		0	11,500	1Q	1,100 79,198	1Q	0	1,100 90698	
AWS Subtotal Product Development				11,500	1Q		1Q	0		
AWS Subtotal Product Development Remarks				11,500	1Q FY 2004		1Q FY 2005	0		Target
AWS Subtotal Product Development Remarks	housands)	VA	0	11,500 FY 2004				Cost to		Target Value of
AWS Subtotal Product Development Remarks	housands) Contract	VA Performing	0 Total		FY 2004	79,198	FY 2005		90698	
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method	VA Performing Activity &	Total PYs	FY 2004	FY 2004 Award	79,198 FY 2005	FY 2005 Award	Cost to	90698 Total	Value of
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method	VA Performing Activity &	Total PYs	FY 2004	FY 2004 Award	79,198 FY 2005	FY 2005 Award	Cost to	90698 Total	Value of
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method	Performing Activity & Location	Total PYs	FY 2004	FY 2004 Award	79,198 FY 2005	FY 2005 Award	Cost to	90698 Total	Value of Contract
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type	Performing Activity & Location JHU/APL/	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	79,198 FY 2005 Cost	FY 2005 Award Date	Cost to Complete	90698 Total Cost	Value of Contract
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type	Performing Activity & Location JHU/APL/ MD	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	79,198 FY 2005 Cost	FY 2005 Award Date	Cost to Complete	90698 Total Cost	Value of Contract
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type SS/CPFF	Performing Activity & Location JHU/APL/ MD Lockheed Martin/	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	79,198 FY 2005 Cost 3,770	FY 2005 Award Date	Cost to Complete CONT.	90698 Total Cost 4,870	Value of Contract
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type SS/CPFF	Performing Activity & Location JHU/APL/ MD Lockheed Martin/ NJ	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	79,198 FY 2005 Cost 3,770	FY 2005 Award Date	Cost to Complete CONT.	90698 Total Cost 4,870	Value of Contract TB:
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type SS/CPFF SS/CPAF	Performing Activity & Location JHU/APL/ MD Lockheed Martin/ NJ MIT/LL/	Total PYs Cost 0	FY 2004 Cost 1,100 450	FY 2004 Award Date	79,198 FY 2005 Cost 3,770 1,326	FY 2005 Award Date	Cost to Complete CONT. CONT.	90698 Total Cost 4,870 1,776	Value of Contract TB
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type SS/CPFF SS/CPAF	Performing Activity & Location JHU/APL/ MD Lockheed Martin/ NJ MIT/LL/ MA	Total PYs Cost 0	FY 2004 Cost 1,100 450	FY 2004 Award Date	79,198 FY 2005 Cost 3,770 1,326	FY 2005 Award Date	Cost to Complete CONT. CONT.	90698 Total Cost 4,870 1,776	Value of
AWS Subtotal Product Development Remarks II. Support Costs Cost (\$ in T	housands) Contract Method & Type SS/CPFF SS/CPAF	Performing Activity & Location JHU/APL/ MD Lockheed Martin/ NJ MIT/LL/ MA NSWC/DD/	Total PYs Cost 0	FY 2004 Cost 1,100 450 2,800	FY 2004 Award Date	79,198 FY 2005 Cost 3,770 1,326 5,479	FY 2005 Award Date	Cost to Complete CONT. CONT.	90698 Total Cost 4,870 1,776 8,279	Value of Contract TBl TBl

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

	MDA Exhi	bit R-3 RDT&E Pro	ject Cost Ana	lysis			Februar	y 2004		
PPROPRIATION/BUDGET CDT&E, DW/04 Advance		evelopment and P	rototypes (A	CD&P)	R-1 NOMEN 0603882C I		sile Defense	e Midcourse D	efense Seg	ment
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
<u> </u>		NSWC/PHD/								
	SS/MIPR	CA	0	250	1Q	463	1Q	CONT.	713	TB
		RAYTHEON/								
	SS/CPAF	AZ	0	450	1Q	8,595	2Q	CONT.	9,045	TB
		SEG/				·			·	
	SS/CPFF	VA	0	925	2Q	1,084	2Q	CONT.	2,009	TB
		TSC/								
	SS/CPFF	VA	0	0	1Q			CONT.		TB
		BMPCOE/								
	SS/CPFF	MD	0			186	1Q	CONT.	186	
		VARIOUS/								
	Various	US	0	309	1Q	316	1Q		625	
		MITRE/								
	SS/CPFF	VA	0			204	1Q		204	
Subtotal Support Costs			0	10,150		25,667		0	35817	
Remarks II. Test and Evaluation Cost (\$ in Thousands)									
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
		Logotion	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Cost Categories: Subtotal Test and Evaluation	& Type	Location								
Cost Categories:	& Type	Location						_		

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

	MDA E-L	L'AD ADDTEED		1			Date	2004		
A DDD ODDIA TION/DI ID CETT A		bit R-3 RDT&E Proj	ect Cost Ana	lysis	D 1 MOMEN	ICI ATUDE	Februa	ry 2004		
APPROPRIATION/BUDGET A		\	4 - 4	CD O D)	R-1 NOMEN			. M:J T)- f G	4
RDT&E, DW/04 Advanced		Development and Pi	rototypes (A	CD&P)	0603882C 1	Bamsuc Mis	ssile Defense	e Midcourse I	Defense Seg	ment
IV. Management Services Cost (· · · · · · · · · · · · · · · · · · ·	Performing	T 4 1		FY 2004		FY 2005		1	Tr
	Contract	•	Total	EW 2004		FY 2005		G	7F 4 1	Target
	Method	Activity &	PYs	FY 2004	Award		Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Weapons System Engineering		NAMODA								
		NAVSEA/ DC	0	250	10	0	10	CONT	250	CONT
		JHU/APL/	0	250	1Q	0	1Q	CONT.	250	CONT.
	SS/CPFF	JHU/APL/ MD	0	100	10	100	1Q	CONT.	200	CONT.
	SS/CPFF	NSWC/DD/	0	100	1Q	100	IQ	CON1.	200	CON1.
	MIPR	VA	0	50	1Q	50	1Q	CONT.	100	CONT.
	MIFK	Anteon/	0	30	1Q	30	1Q	CON1.	100	CON1.
	C/CPFF	VA	0	1,085	2Q	482	2Q	CONT.	1,567	CONT.
		Paradigm/								
	SS/CPFF	VA	0	50	1Q	0	1Q	CONT.	50	CONT.
		Lockheed Martin/								
	SS/CPAF	NJ	0	50	2Q	50	2Q	CONT.	100	CONT.
		Raytheon/								
	SS/CPAF	AZ	0	50	2Q	50	2Q	CONT.	100	CONT.
		MDA	0		1Q	0	1Q	CONT.		CONT.
		Various/								
	Various	Various	0	300	1Q	897	1Q	CONT.	1,197	CONT.
Subtotal Management Services			0	1,935		1,629		0	3564	
Remarks										
Project Total Cost			0	23,585		106,494			130,079	
Remarks										

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

MDA	A Exl	nibit	R-4 S	Sche	dule	Pro	file											Date Fel	e orua	rv 2	004							
APPROPRIATION/BUDGET ACTIVITY										a`		1 NO											_	•				
RDT&E, DW/04 Advanced Component De	evelo	pmo	ent a	nd	Prote	otyp	pes (AC	D&I	?)	06	0388	32C	Ball	istic	Mi	ssile	De	fens	e M	idco	urse	e De	fens	e Seg	gme	nt	
Fiscal Year		20	003			20	004			20	005			20	06			21	007			20	008			20	009	
riscai Teai	1	2	3	4	1	20	3	4	1	20	3	4	1	20	3	4	1	2	3	4	1	2	3	4	1	20	3	4
Testing Milestones				·	1	_					3	<u> </u>	1		J	·		Ĩ		·		12	3				3	
Pacific Blitz 06																Δ												
Integrated Flight Test																												
FTG 06-1b													↲			\mathbb{A}												
FTG 06-2																	Δ			₽							Ш	
FTG 06-3a/b																	Δ			₽							Ш	
FTG 08-1																	Δ			₩							Ш	
Flight Tests			, ,																,		•							
FM 11																Δ											Ш	
FM 12																		Δ										
FM-13																				Δ							Ш	
Development Milestones		,	,				•				,								,			•						
Aegis BMD Surveillance & Track Upgrades	Δ						<u> </u>													₽							Ш	
Aegis BMD 3.2 Development					\triangle		<u> </u>	<u> </u>	<u> </u>		H									₽							Ш	
Aegis BMD 3.2 PDR								Δ																			Ш	
Aegis BMD 3.2 CDR											Δ																Ш	

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

MDA	Exh	iibit	R-4	Sche	dule	e Pro	file											Date Feb		ry 2(004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	nma	ent s	nd l	Prof	totvi	oes ((AC	D&I	P)				NCL. Rall			sile	Def	ense	· Mi	dco	urse	Def	fenso	e Ser	gmei	nt	
Fiscal Year	7010		003		. 100		004	110			005	70 00		20			,5110		07	/ 1,11	uco.		008	CIL	, D.C.	20		
	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
Development Milestones																												
Aegis BMD 3.2 Object Classification Demo													Δ														Ш	
Aegis BMD CSEDS Testing																	Δ											
Aegis BMD 3.2 Delivery																				Δ								
																											\Box	

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

MDA	Exhibit R-4A Sch	edule Detail				Date February 20	04	
APPROPRIATION/BUDGET ACTIVITY					MENCLATURE			
RDT&E, DW/04 Advanced Component De	evelopment and F	Prototypes (ACI	0&P)	060388	32C Ballistic Miss	sile Defense Mic	lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones								
Pacific Blitz 06					4Q			
Integrated Flight Test								
FTG 06-1b					1Q-4Q			
FTG 06-2						1Q-4Q		
FTG 06-3a/b						1Q-4Q		
FTG 08-1						1Q-4Q		
Flight Tests								
FM 11					4Q			
FM 12						2Q		
FM-13						4Q		
Development Milestones								
Aegis BMD Surveillance & Track Upgrades	1Q-4Q	1Q-4Q	10	Q-4Q	1Q-4Q	1Q-4Q		
Aegis BMD 3.2 Development		1Q-4Q	10	Q-4Q	1Q-4Q	1Q-4Q		
Aegis BMD 3.2 PDR		4Q						
Aegis BMD 3.2 CDR			3	3Q				
Aegis BMD 3.2 Object Classification Demo					1Q			
Aegis BMD CSEDS Testing						1Q		
Aegis BMD 3.2 Delivery						4Q		
	•	•	•		-		•	

Project: 0809 AEGIS Ballistic Missile Defense Block 2006

MDA Exhibit R-2A RDT&E Project Justification					Date February 2 0	004		
APPROPRIATION/BUDGET ACTIVITY]	R-1 N	OMENCLA'	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	P)	06038	882C Ballis	tic Missile	Defense Mi	dcourse De	fense Segm	ent
COST (\$ in Thousands)	FY 20	2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0909 AEGIS Ballistic Missile Defense Block 2008		0	0	0	20,100	144,700	533,840	434,577
RDT&E Articles Qty		0	0	0	0	0	5	2

A. Mission Description and Budget Item Justification

The mission of Aegis BMDS is to deliver an enduring operationally effective and supportable Ballistic Missile Defense Capability in Aegis Cruisers and destroyers, in defense of the U.S., our deployed forces, allies and friends; to increase the effectiveness of the greater Ballistic Missile Defense System (BMDS) by both providing and gaining synergy from other BMDS elements; and to incrementally increase this capability by delivering evolutionary spiral upgrades as part of BMDS block upgrades.

The Aegis BMD program is the sea-based element of the Ballistic Missile Defense System (BMDS). Aegis BMD supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions by providing capability in locations within range of international waters. Aegis BMD may be deployed by Japan and possibly other countries in addition to the United States.
- In all phases of ballistic missile flight: boost, midcourse, and terminal.
- Against long- range ballistic missiles by providing surveillance and tracking support to the Block 04 Initial Defensive Operations. It provides engagement support against short and medium range ballistic missiles as part of Block 04, and will provide support against intermediate range ballistic missiles as part of BMDS Block 06 and BMDS Block 08.

Aegis BMD supports the BMDS effort to improve missile capability with the SM-3 Block 1 and Block 1A missiles. It supports the effort to improve sensors so that missiles are more effective through LRS&T support to the IDO, through development of the Aegis BMD signal processor to support Block 06/08, and through the ability to launch on Tactical Digital Information Link (TADIL). In collaboration with the MDA National Team (MDNT), Aegis BMD is contributing to the BMDS in the development of engagement sequence groups (ESGs). It supports an autonomous engagement against SRBMs and MRBMs without external cueing (SM-3 Uncued ESG), and using external DSP and TADIL J cueing (SM-3 Cued ESG).

Aegis Ballistic Missile Defense (BMD) Block 2008 will evolve (through spiral capability driven development) from the Block 2006 Aegis Weapon System (AWS) with the focus of development on fully integrated radar discrimination:

- Integration of Block 06 Discrimination Capabilities (e.g. Synthetic Wideband Radar Upgrade, Signal Processing & Feature Extraction Algorithms, Improved CCM).
- Improved BMDS Command and Control, Battle Management, and Communications (C2BMC).
- Analyze and plan for potential undefined missile upgrades.
- Risk Reduction for MDA multi-use interceptor integration.
- Test Aegis BMD Signal Processor and demonstrate closed-loop synthetic wideband and narrowband discrimination.
- Provides an option for an alternative DACS design with increase divert capability (Kinematic Capability), fully safety-compliant with full production optimization

B. Accomplishments/Planned Program			
	FY 2003	FY 2004	FY 2005
Funding in this Project is not programmed until FY06.			
RDT&E Articles (Quantity)			

Project: 0909 AEGIS Ballistic Missile Defense Block 2008

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

C. Other Program Funding Summary

C. Other Program Funding Summary									
								To	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing

Project: 0909 AEGIS Ballistic Missile Defense Block 2008

UNCLASSII		
MDA Exhibit R-2A RDT&E Project Justification		Date February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment
D. Acquisition Strategy		
The Aegis BMD element will follow the MDA's capability-based acquisition strategy that emphasizes test blocks. The Department has implemented a missile defense acquisition strategy using a multi-path approach. The Aegis BMD element acquisition approach supports evolutionary development, continuously building technical and management aspects of the program and to meet the requirements presented by the ballistic relackheed Martin to continue development of the SM-3 missile and Aegis Weapon System, respectively.	ch to assure that the most effective rupon demonstrated capabilities to a	missile defense is available at the earliest possible time. dvance the BMDS capabilities. After considering all the

Project: 0909 AEGIS Ballistic Missile Defense Block 2008

	DA Exl	nibit]	R-4	Sche	dule	Pro	file											Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component	Develo	pme	ent a	nd P	rot	otyp	pes (AC	D&I	P)		1 NO 038 8					ssile	Def	ense	e Mi	dco	urse	Def	fense	e Se	gmen	nt	
Fiscal Year		20	03			20	004			20	005			20	06			20	07			20	800			200)9	
	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
Testing Milestones	Ţ								_				_				_				_							
Pacific Blitz 08																								Δ				
Development Milestones																												
Radar & Signal Processing Risk Reduction																			Δ						\triangle			
Aegis BMD 4.0 Engineering Assessment																									Δ			
Aegis BMD 4.0 Development									Δ																	\Rightarrow	_	_ ∆
Aegis BMD 4.0 PDR											Δ																	
Aegis BMD 4.0 CDR															Δ											Ш		
Aegis BMD 4.0 CSEDS Testing																					Δ					Щ		
Aegis BMD 4.0 Delivery																										Δ		
Integrated Flight Test																												
FTG 08-3a																					Δ			\bowtie		ightharpoonup		
FTG 08-3b																					Δ			otan		ightharpoonup		
FTG 10-1																									Δ	\Rightarrow		⊉
FTG 10-2																									Δ.	\Rightarrow	+	⊉
FTG 10-3																									Δ	〓		⊉

Project: 0909 AEGIS Ballistic Missile Defense Block 2008

MDA	Exh	ıibit	R-4	Sche	edule	Pro	file											Date Feb		ry 2(004							
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	ent a	ınd	Prot	totyj	pes (ACI	D&I	?)		1 NO 0 388					ssile	Def	ense	e Mi	dco	urse	Def	ense	e Seg	mer	ıt	
Fiscal Year		20	003			20	004			20	005			20	06			20	07			20	08			200)9	
	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
Flight Tests																												
FM 14																						Δ						
FM 15																							Δ					
FM 16																										Δ		
FM 17																											Δ	

Project: 0909 AEGIS Ballistic Missile Defense Block 2008

M	Date February 20	<u> </u>						
APPROPRIATION/BUDGET ACTIVITY	DA Exhibit R-4A Sch	edule Detail		R-1 NO	MENCLATURE	February 20	U-1	
RDT&E, DW/04 Advanced Component	Development and I	Prototypes (ACI	D&P)			sile Defense Mid	dcourse Defense	Segment
TED TO THE THE COMPONENT	Development una 1	Tototypes (1202	<i>b</i> (1)	000000	TO Dumbuc 1.115	bite Deletipe 1,110	reduise Delense	Segment
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones			1					
Pacific Blitz 08			1				4Q	
Development Milestones			1					
Radar & Signal Processing Risk Reduction			Ī			3Q-4Q	1Q-4Q	1Q
Aegis BMD 4.0 Engineering Assessment			Ī					1Q
Aegis BMD 4.0 Development			10	Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Aegis BMD 4.0 PDR			1	3Q				
Aegis BMD 4.0 CDR			1		3Q			
Aegis BMD 4.0 CSEDS Testing			1				1Q	
Aegis BMD 4.0 Delivery			1					2Q
Integrated Flight Test			1					
FTG 08-3a			1				1Q-4Q	
FTG 08-3b			1				1Q-4Q	
FTG 10-1			1					1Q-4Q
FTG 10-2			1					1Q-4Q
FTG 10-3								1Q-4Q
Flight Tests			1					
FM 14			1				2Q	
FM 15			Ī				3Q	
FM 16			T					2Q
FM 17								3Q

Project: 0909 AEGIS Ballistic Missile Defense Block 2008

					Date			
MDA Exhibit R-2A RDT&E Project Justification					February 20	004		
APPROPRIATION/BUDGET ACTIVITY]	R-1 N	OMENCLA'	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P)	06038	882C Ballis	tic Missile	Defense Mi	idcourse De	fense Segm	ent
COST (\$ in Thousands)	FY 20	003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0009 AEGIS Ballistic Missile Defense Block 2010		0	0	0	0	7,753	30,000	94,414
RDT&E Articles Qty		0	0	0	0	0	0	0

Note: This Budget Project was previously captured in Project 3020 in FY 2003.

A. Mission Description and Budget Item Justification

The mission of Aegis BMDS is to deliver an enduring operationally effective and supportable Ballistic Missile Defense Capability in Aegis Cruisers and destroyers, in defense of the U.S., our deployed forces, allies and friends; to increase the effectiveness of the greater Ballistic Missile Defense System (BMDS) by both providing and gaining synergy from other BMDS elements; and to incrementally increase this capability by delivering evolutionary spiral upgrades as part of BMDS block upgrades.

The Aegis BMD program is the sea-based element of the Ballistic Missile Defense System (BMDS). Aegis BMD supports the BMDS mission of intercepting ballistic missiles in all regions, in all phases, and of all ranges, as follows:

- In all regions by providing capability in locations within range of international waters. Aegis BMD may be deployed by Japan and possibly other countries in addition to the United States.
- In all phases of ballistic missile flight: boost, midcourse, and terminal.

Aegis Ballistic Missile Defense (BMD) Block 2010 will evolve (through spiral capability driven development) from the BMD Block 2008 Aegis Weapon System and its integration with the Navy developed Aegis Open Architecture System:

- Defeats a wide variety of ballistic missiles in the presence of complex counter countermeasures (Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), and Intermediate Range Ballistic Missiles (IRBM).
- Incorporate Advanced CCM Improvements
- Provides Discrimination Algorithms, Adaptive Processing, C2BMC Upgrades for BMDS Integration.
- Provides for possible integration of the Aegis BMD Weapon System and the Missile Defense Agency (MDA) Common Interceptor.

B. Accomplishments/Planned Program

Di Tecomphonimento, Financo I I ogrum	FY 2003	FY 2004	FY 2005
Funding in this Project is not programmed until FY07.			
RDT&E Articles (Quantity)			

Project: 0009 AEGIS Ballistic Missile Defense Block 2010

Date
February 2004
R-1 NOMENCLATURE
0603882C Ballistic Missile Defense Midcourse Defense Segment
ı

C. Other Program Funding Summary									
								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense									
Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts,									
Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense									
System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense									
Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost									
Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense									
Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense	_								
System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test	_								
and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense		207.200	440 400	424.040		47.4000	4 = 0 = 0.4		
Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing
PE 0603890C Ballistic Missile Defense			4=0=44	40.000		700 010			
System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area	007.616	0	0	0	0	0	0	a	a
Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile	120.022	0	0	0	0	0	0	a .: :	<i>a</i>
Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative	120.701	0	0	0	0	0	0	G .: :	<i>a</i>
Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters -	25.221	02.442	141.022	1.46.000	145 110	151 505	151500	a	
MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing

Project: 0009 AEGIS Ballistic Missile Defense Block 2010

UNCLASSIF	IED	
MDA Exhibit R-2A RDT&E Project Justification		Date February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603882C Ballistic Missil	e Defense Midcourse Defense Segment
D. Acquisition Strategy		
The Aegis BMD element will follow the MDA's capability-based acquisition strategy that emphasizes testi blocks. The Department has implemented a missile defense acquisition strategy using a multi-path approach. The Aegis BMD element acquisition approach supports evolutionary development, continuously building to technical and management aspects of the program and to meet the requirements presented by the ballistic in Lockheed Martin to continue development of the SM-3 missile and Aegis Weapon System, respectively.	th to assure that the most effective rappon demonstrated capabilities to a	nissile defense is available at the earliest possible time. dvance the BMDS capabilities. After considering all the

Project: 0009 AEGIS Ballistic Missile Defense Block 2010

MD	A Ex	hibit	R-4	Sche	edul	e Pro	file											Date Feb	ruai	ry 2	004						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D	evel	opm	ent a	and i	Pro	toty	pes ([AC]	D&I	?)				NCL. Ball			ssile	Def	fense	e Mi	idco	urse	Def	fens	e Se	gme	nt
Fiscal Year		20	003			20	004			20	005			20	06			20	07			20	800			20	09
	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
Development Milestones																											
Element Capability Spec																				Δ							
Block 2010 PDR																							Δ				
Block 2010 CDR																											Δ

Project: 0009 AEGIS Ballistic Missile Defense Block 2010

		ONCE		ILD				
						Date		
	A Exhibit R-4A Sch	edule Detail				February 20	04	
APPROPRIATION/BUDGET ACTIVITY					MENCLATURE			
RDT&E, DW/04 Advanced Component 1	Development and l	Prototypes (ACD	&P)	0603882	2C Ballistic Mis	sile Defense Mid	lcourse Defense	Segment
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009
Development Milestones								
Element Capability Spec						4Q		
Block 2010 PDR							3Q	
Block 2010 CDR								3Q

Project: 0009 AEGIS Ballistic Missile Defense Block 2010

MDA E-Likit D 24 DDT 9 E Duciest Lustification					Date F ebruary 2 0	004		
MDA Exhibit R-2A RDT&E Project Justification					rebruary 20	<i>J</i> U4		
APPROPRIATION/BUDGET ACTIVITY	F	R-1 NO	OMENCLA?	ΓURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	(P)	06038	82C Ballis	tic Missile	Defense Mi	dcourse De	fense Segn	nent
COST (\$ in Thousands)	FY 20	003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0402 Japanese Cooperative Program		0	53,382	72,457	24,806	0	0	0
RDT&E Articles Qty		0	0	1	1	0	0	0

Note: This Budget Project was previously captured in Project 3020 in 2003.

A. Mission Description and Budget Item Justification

The U.S./Japan Cooperative Research (JCR) will continue per the U.S. Department of Defense (DoD)/Japan Defense Agency (JDA) Memorandum of Agreement signed in 1999 to conduct cooperative research in Ballistic Missile Defense. The focus of research is on four components of the SM-3 guided missile: sensor, advanced kinetic warhead, second stage propulsion, and lightweight nosecone. In FY 2005 and 2006, the JCR project plans to flight test the lightweight nosecone in Joint Control Test Vehicle-1 (JCTV-1) and Joint Flight Mission-1 (JFM-1).

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Japan Cooperative Research Project		53,382	72,457
RDT&E Articles (Quantity)			1

For completeness, these FY 2003 Accomplishments are provided below (Funded in Budget Project 3020):

- 1) Continued development and system engineering support for the four U.S./JCR components.
- 2) Initiated procurement of test articles and ship modifications for JCTV-1 and JFM-1 including JFM-1 target.
- 3) Conducted Proof-of-Principle (PoP) Missile Nosecone Critical Design Review (CDR) supporting integration of JDA developed nosecone on PoP flights JCTV-1 and JFM-1.
- 4) Continued ground testing in the U.S. of the Japan Quantum Well Infrared Photodector (QWIP) seeker.
- 5) Continued System Engineering support for JDA design and development of second stage propulsion, QWIP seeker, lightweight nosecone and SDACS valve and thruster components.
- 6) Completed JCR nosecone wind tunnel tests.

FY 2004 Planned Accomplishments:

- 1) Initiate test planning and preparation for the PoP flights JCTV-1 and JFM-1.
- 2) Continue development and system engineering support for the four U.S./JCR components.
- 3) Continue procurement of test articles and ship modifications for JCTV-1 and JFM-1 including JFM-1 target.
- 4) Conduct Preliminary Design Review (PDR) for Ship System and Vertical Launching System (VLS) modifications to support JCR PoP flights JCTV-1 and JFM-1.
- 5) Complete integration of the Japanese Quantum Well Infrared Photodetector (QWIP) and DoD Mercury Cadmium Telluride (MCT) seekers onto Widebody Airborne Sensor Platform (WASP).
- 6) Conduct Captive Carry Testing (CCT) with OWIP and MCT sensors on WASP.
- 7) Conduct ground testing to support PoP flight tests including Design Verification and Engineering Tests (DVT) for Shielding Effectiveness, Electrostatic Discharge, HERO, Push-through, and Separation tests.
- 8) Continue System Engineering support for JDA design and development of second stage propulsion, QWIP seeker, lightweight nosecone and SDACS valve and thruster components.

FY 2005 Planned Accomplishments:

- 1) Continue development and system engineering support for the four U.S./JCR components.
- 2) Conduct Captive Carry Testing (CCT) with OWIP and MCT sensors on WASP.

Project: 0402 Japanese Cooperative Program

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

- 3) Complete procurement of test articles and ship modifications for JCTV-1 and JFM-1 including JFM-1 target.
- 4) Continue test planning and preparation for the PoP flights JCTV-1 and JFM-1.
- 5) Continue ground testing to support PoP flight tests.
 6) Conduct JCTV-1 PoP flight test.
- 7) Initiate post-test analysis of PoP flight test JCTV-1.
- 8) Continue System Engineering support for JDA design and development of second stage propulsion, QWIP seeker, lightweight nosecone and SDACS valve and thruster components.

C. Other Program Funding Summary

								To	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing

Project: 0402 Japanese Cooperative Program

MDA	Fyhihit D 2A I	DDT&F Droio	ct Justification			Date Febru	uary 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compone	RE	sile Defense Midcourse Defense Segment							
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,59	9 1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,47	6 656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,04	9 445,971	456,339	469,621	Continuing	Continuing

D. Acquisition Strategy

The major focus of activity for the Japan Cooperative Research Project will be preparation for and execution of the JCTV-1 and JFM-1 flight tests. Both tests will be integrated into the larger Aegis BMD test program. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts for U. S. Navy work and events.

Project: 0402 Japanese Cooperative Program

	MDA Evh	ibit D 2 DDT&E Dwai	oot Cost Anol	lwa i a			Date Februa i	mr 2004		
APPROPRIATION/BUDGET	ACTIVITY	ibit R-3 RDT&E Proj			R-1 NOMEN		-			
RDT&E, DW/04 Advanced		Development and Pr	ototypes (A	CD&P)	0603882C 1	Ballistic Mis	sile Defense	e Midcourse D	Oefense Seg	ment
I. Product Development Cost (\$		Performing	T-4-1		FY 2004		FY 2005	1		Т4
	Contract	C	Total	EX 2004		EV 2005		C++-	T-4-1	Target
Cost Categories:	Method & Type	Activity & Location	PYs Cost	FY 2004 Cost	Award Date	FY 2005 Cost	Award Date	Cost to Complete	Total Cost	Value of Contract
Japan Cooperative Research Project	æ Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		Raytheon/								
JCR	SS/CPAF	AZ	0	31,272	2Q	43,597	2Q	CONT.	74,869	TBD
		Lockheed Martin/								
JCR	SS/CPAF	NJ	0	7,200	1Q	8,955	1Q	CONT.	16,155	TBD
C 1 1 D 1 . D 1			0	38,472		52,552		0	91024	
Subtotal Product Development Remarks			,							
Remarks										
*	ousands) Contract	Performing	Total		FY 2004		FY 2005			Target
Remarks		Performing Activity &	Total PYs	FY 2004	FY 2004 Award	FY 2005	FY 2005 Award	Cost to	Total	Target Value of
Remarks	Contract			FY 2004 Cost		FY 2005 Cost		Cost to Complete	Total Cost	•
Remarks II. Support Costs Cost (\$ in The	Contract Method	Activity &	PYs		Award		Award			Value of
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method	Activity &	PYs		Award		Award			Value of
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method	Activity & Location NSWC/DD/ VA	PYs		Award		Award			Value of
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF	Activity & Location NSWC/DD/ VA NSWC/PHD/	PYs Cost	3,909	Award Date	4,897	Award Date	Complete CONT.	Cost 8,806	Value of Contract
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA	PYs Cost	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF SS/CPFF	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA JHU/APL/	PYs Cost 0	3,909 722	Award Date 1Q 1Q	4,897 1,367	Award Date 1Q 1Q	CONT. CONT.	8,806 2,089	Value of Contract TBD
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA JHU/APL/ MD	PYs Cost	3,909	Award Date	4,897	Award Date	Complete CONT.	Cost 8,806	Value of Contract
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF SS/CPFF	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA JHU/APL/	PYs Cost 0	3,909 722	Award Date 1Q 1Q	4,897 1,367	Award Date 1Q 1Q	CONT. CONT.	8,806 2,089	Value of Contract TBD
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF SS/CPFF	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA JHU/APL/ MD Various/ Various NAWC/CL/	PYs Cost 0 0	3,909 722 3,354	Award Date 1Q 1Q 2Q	4,897 1,367 4,591	Award Date 1Q 1Q 2Q	CONT. CONT. CONT.	8,806 2,089 7,945	Value of Contract TBD TBD
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF SS/CPFF	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA JHU/APL/ MD Various/ Various NAWC/CL/ CA	PYs Cost 0 0	3,909 722 3,354	Award Date 1Q 1Q 2Q	4,897 1,367 4,591	Award Date 1Q 1Q 2Q	CONT. CONT. CONT.	8,806 2,089 7,945	Value of Contract TBD TBD
Remarks II. Support Costs Cost (\$ in The Cost Categories: Japan Cooperative Research	Contract Method & Type SS/CPFF SS/CPFF Various	Activity & Location NSWC/DD/ VA NSWC/PHD/ CA JHU/APL/ MD Various/ Various NAWC/CL/	PYs Cost 0 0 0 0	3,909 722 3,354 805	Award Date 1Q 1Q 2Q 1Q	4,897 1,367 4,591 1,477	Award Date 1Q 1Q 2Q	CONT. CONT. CONT.	8,806 2,089 7,945 2,282	Value of Contract TBD TBD

Project: 0402 Japanese Cooperative Program

Performing Activity & Location PARADIGM/ VA MDA/ VA NAVSEA/ DC Performing			R-1 NOMEN 0603882C F FY 2004 Award Date 1Q 2Q 1Q		Februar sile Defense FY 2005 Award Date	cost to Complete	Total Cost 767 6,461 1,906 34815	Target Value of Contract
Performing Activity & Location PARADIGM/ VA MDA/ VA NAVSEA/ DC	Total PYs Cost 0 0	FY 2004 Cost 364 2,624	0603882C F FY 2004 Award Date 1Q 2Q	FY 2005 Cost 403 3,837	FY 2005 Award	Cost to Complete	Total Cost 767 6,461 1,906	Target Value of
Performing Activity & Location PARADIGM/ VA MDA/ VA NAVSEA/ DC	Total PYs Cost 0 0	FY 2004 Cost 364 2,624	FY 2004 Award Date	FY 2005 Cost 403 3,837	FY 2005 Award	Cost to Complete	Total Cost 767 6,461 1,906	Target Value of
Activity & Location PARADIGM/ VA MDA/ VA NAVSEA/ DC	PYs Cost 0 0	Cost 364 2,624 969	Award Date 1Q 2Q	Cost 403 3,837 937	Award	Complete	Cost 767 6,461 1,906	Value of
Location PARADIGM/ VA MDA/ VA NAVSEA/ DC	0 0 0	Cost 364 2,624 969	Date 1Q 2Q	Cost 403 3,837 937		Complete	Cost 767 6,461 1,906	
PARADIGM/ VA MDA/ VA NAVSEA/ DC	0 0	364 2,624 969	1Q 2Q	403 3,837 937	Date		767 6,461 1,906	Contract
VA MDA/ VA NAVSEA/ DC	0	2,624	2Q	3,837 937		0	6,461 1,906	
MDA/ VA NAVSEA/ DC	0	2,624	2Q	3,837 937		0	6,461 1,906	
VA NAVSEA/ DC	0	969		937		0	1,906	
NAVSEA/ DC	0	969		937		0	1,906	
DC			1Q			0		
			1Q			0		
Performing	0	14,910		19,905		0	34815	
Performing								
•	Total		FY 2004		FY 2005	_	_ ,]	Target
Performing	T . 1		EV 2004		EN 2005			
Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
						1		
Performing	Total		FY 2004		FY 2005			Target
Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
								<u>, </u>
	0	53,382		72,457			125,839	
	Activity &	Activity & PYs Location Cost	Activity & PYs FY 2004 Location Cost Cost	Activity & PYs FY 2004 Award Location Cost Cost Date	Activity & PYs FY 2004 Award FY 2005 Location Cost Cost Date Cost	Activity & PYs FY 2004 Award FY 2005 Award Location Cost Cost Date Cost Date	Activity & PYs FY 2004 Award FY 2005 Award Cost to Location Cost Cost Date Complete	Activity & PYs FY 2004 Award FY 2005 Award Cost to Total Location Cost Cost Date Cost Date Complete Cost

Project: 0402 Japanese Cooperative Program

APPROPRIATION/BUIDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) Fiscal Year 2003 2004 2005 2006 2007 2008 2009 2	MDA	Ext	nibit	R-4	Sche	dule	Pro	file											Date Feb		ry 2	004							
Fiscal Year 2003 2004 2005 2006 2007 2008 2009 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 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 1 1 2	APPROPRIATION/BUDGET ACTIVITY RDT&F DW/04 Advanced Component De	volc	nmı	ont c	and l	Prof	otvi	200	ACI	∩ <i>&</i> -1	D)												11 r c <i>a</i>	n Dof	fonce	o So	ame	nt	
1 2 3 4 1 1 2 3 4 1 1	RDT&E, DW/04 Advanced Component De	VCIO	pine	ciit a	iiiu i	1100	otyp	ics ((ACI	Jai	.)	000	0300	12C .	Dan	15110	, IVIII	33110	, DC	CHS	C IVII	luco	uist	DCI	CHSC	i BC	gine	111	
Development Milestones Ship System PDR Δ Image: Control of the c	Fiscal Year		20)03			20	04			20	005			20	06			20	007			20	008			20	09	
Ship System PDR Nosecone CDR Ship System CDR Ship System CDR Japan Cooperative Research Project JCTV-1		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
Nosecone CDR Ship System CDR Japan Cooperative Research Project JCTV-1 A A A A A A A A A A A A A	Development Milestones																												
Ship System CDR Japan Cooperative Research Project JCTV-1 A D A D A D D D D D D D D	Ship System PDR	<u> </u>	<u> </u>	1																									
Japan Cooperative Research Project JCTV-1 A D D D D D D D D D D D D		<u> </u>	<u> </u>				\square	<u> </u>																					_
JCTV-1																													
\ 				_							ı	1							Г	ı	ı			П					
		\vdash	<u> </u>		-		$\vdash\vdash\vdash$						Δ		$\overline{}$									-	\vdash		\vdash		$-\parallel$
	JFM-1	\vdash	\vdash		\vdash	\square	$\vdash\vdash\vdash$	igwdapprox			_														\vdash		$\vdash\vdash$		$ \parallel$
		\vdash	\vdash		\vdash	H	$\mid \rightarrow \mid$	$\vdash \vdash$																╁	\vdash		\vdash		-
		Щ	<u> </u>	<u> </u>		Ш	ш	ш																	Ш	Ш			—
$oldsymbol{\iota}$																													

Project: 0402 Japanese Cooperative Program

M	IDA Exhibit R-4A Sch	edule Detail				Date February 20	04			
APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE						
RDT&E, DW/04 Advanced Component)&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment								
Schedule Profile	FY 2003	FY 2004	FY	2005	FY 2006	FY 2007	FY 2008	FY 2009		
Development Milestones										
Ship System PDR	3Q									
Nosecone CDR	3Q									
Ship System CDR		2Q								
Japan Cooperative Research Project										
JCTV-1			4	ŀQ						
JFM-1					2Q					
		•	-		•					

Project: 0402 Japanese Cooperative Program

CITCLIN	7011 1							
]	Date			
MDA Exhibit R-2A RDT&E Project Justification					February 20	004		
APPROPRIATION/BUDGET ACTIVITY	H	R-1 N	OMENCLA'	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603882C Ballistic Missile Defense Midcourse Defense Segment								nent
COST (\$ in Thousands)	FY 20	003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3050 Segment Common Engineering and Integration	99	,358	0	0	0	0	0	0
RDT&E Articles Qty		0	0	0	0	0	0	0
								•

Note: The Risk Reduction efforts transitioned to the Program Element (PE) 0603890C Ballistic Missile Defense System (BMDS)Core beginning in FY 2004, while the EKV efforts transitioned to the BMDS Interceptor PE 0603886C. The Counter/Countermeasures (C/CM) efforts transitioned to PE 0603890C Ballistic Missile Defense System Core beginning in FY 2004.

A. Mission Description and Budget Item Justification

This project provides for two primary efforts of Risk Reduction and Counter/Countermeasures (C/CM) efforts for the midcourse segment. The risk reduction efforts provide engineering risk management activities for the midcourse ground and sea-based elements. The countermeasures mitigation activity addresses a few reentry vehicles with simple countermeasure capabilities and then expands to complex countermeasures mitigation with several reentry vehicles. In addition, the engineering management systems support activities support the risk reduction and C/CM activities.

Risk Reduction:

The risk reduction activities include a number of efforts for FY 2003 including the Complementary Exo-atmospheric Kill Vehicle (CEKV), Midcourse and AEGIS BMD risk reduction, and the BMDS Interceptors risk reduction.

The CEKV-risk reduction efforts began in FY 2002 and consist of an effort to develop a kill vehicle (KV) utilizing the latest technology to provide risk mitigation. This effort studies the ability to develop a potential common EKV for Ground and Sea-based Midcourse Defense. The development is based on insertion of new technology and lessons learned from existing EKV development. The CEKV program is planned to include design, testing and project insertion, where appropriate, into the block development approach of BMDS. Based on the study results in FY 2002 and the assessment for the development of a common components, including the EKV, the Risk Reduction EKV efforts were transitioned to the Ballistic Missile Defense System (BMDS) Interceptor Program Element (PE) 0603886C beginning in FY 2004.

A number of other ground and sea-based risk reduction efforts are conducted in this project. AEGIS BMD risk reduction efforts, beginning in FY 2003, consist of efforts in the areas of Standard Missile (SM)-3 Monolithic Divert Attitude Control System (DACS) Producibility, Integration and Ground Testing; Standard Missile (SM)-3 and Aegis Hardware-in-the-Loop (HWIL)/Computer-in-the-Loop (CIL)/End-to-End (ETE) Ground Tests Simulation, BMDS Integration, and Wargaming Representation; SM-3 Parts Obsolescence; SM-3 Hardware Procurement Acceleration; Aegis Weapon System (AWS)/Vertical Launch System (VLS)/SM-3 Interfaces; Midcourse C/CM Techniques; and the RCF-1 Exercise. The Risk Reduction efforts transitioned to the Program Element (PE) 0603890C Ballistic Missile Defense System Core beginning in FY 2004.

The BMDS Interceptors Risk Reduction efforts integrate and test the Generation II kill vehicle (KV) in preparation for an FY 2004 hover test and integration into the Near-field Infrared Experiment (NFIRE) payload. Second generation KE Boost KVs are mature variants of existing MDA developed KV components; they will be the first KVs with the performance to reliably achieve boost phase intercept. The BMDS Interceptor Risk Reduction efforts transitioned to the BMDS Interceptor PE 0603886C beginning in FY 2004.

Counter/Countermeasures (C/CM):

The C/CM effort identifies, develops, and demonstrates solutions to improve the performance of missile defense projects against countermeasure suites. This requires a process to identify and prioritize solutions to credible countermeasures for integration into the program, and requires increased robustness in the test program to incorporate testing against a broader range of credible threats. Results of the testing program will result in the development of additional algorithms to mitigate credible threats. To minimize the programmatic impacts resulting from intelligence estimates, the program is transitioning from threat point-designs to a capability-based approach. Solutions with potential to improve the capabilities against countermeasures will be incorporated through Block upgrades into the Midcourse segment (both ground and sea) and will be provided to the overall Ballistic Missile Defense System (BMDS) through the Missile Defense Agency (MDA) Red-White-Blue team process.

Project: 3050 Segment Common Engineering and Integration

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

The MDA C/CM program operates two adversary teams, each with a different threat perspective, to generate countermeasures to BMDS capabilities: a Red Team that is restricted to using only information on the BMDS available from open sources, and a Black Team that has complete access to all technical data on the BMDS in order to identify potential system vulnerabilities and technical concerns. A White Team, comprised of senior technical experts, reviews the adversary teams' concepts and provides MDA with an independent assessment of their feasibility and risk to the BMDS. The program's Blue Team develops capability improvements, also reviewed by the White Team, to counter the impact of high-risk vulnerabilities. The program funds initiatives to develop the Blue Team counter-countermeasures and demonstrate their readiness for insertion into the BMDS. The program budget supports two cycles per year of countermeasure generation and development of counter-countermeasure responses.

The C/CM effort transitioned to Program Element (PE) 0603890C Ballistic Missile Defense System Core beginning in FY 2004.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Risk Reduction	72,972		
RDT&E Articles (Quantity)			

FY 2003 Accomplishments:

Complementary Exo-atmospheric Kill Vehicle (CEKV):

- Based on the completed study conducted in FY 2002 the CEKV efforts were consolidated with other interceptor components efforts and transitioned to the Ballistic Missile Defense System (BMDS) Interceptor Program Element (PE) 0603886C.

Midcourse Ground and Sea-Based Risk Reduction:

- -The Midcourse Ground and Sea-Based risk reduction efforts included activities in the areas of Standard Missile (SM)-3 Monolithic Divert Attitude Control System (DACS) Producibility, Integration and Ground Testing; SM-3 and Aegis HWIL/CIL/End to End Ground Tests Simulation, BMDS Integration, and Wargaming Representation; SM-3 Parts Obsolescence; SM-3 Hardware Procurement Acceleration; AWS/VLS/SM-3 Interfaces; Aegis CCM Techniques; and the RCF-1 Exercise. Activities included:
- Initiated acquisition of accelerated STANDARD Missile-3 (SM-3) guided missile hardware
- Initiated obsolete material replacement development effort for SM-3 test equipment and missile parts
- Conducted Monolithic Solid Divert and Attitude Control System (SDACS) ground and qualification tests
- Continued element/multi-element testing and verification of Aegis Weapons System (AWS) computer programs
- Verified Shipboard system interfaces with End-to-End Distributed Development System (ETEDDS)
- Continued Aegis Weapon System (AWS)/SM-3 guided missile interface development & integration
- Continued Vertical Launching System (VLS)/SM-3 guided missile interface development & integration
- Conducted SM-3 Hardware-in-the-Loop (HIL)/Computer-in-the-Loop (CIL)/End-to-End (ETE) ground tests and simulated engagements
- Conducted Aegis BMD Counter-Countermeasures (CCM) technique characterization

BMDS Interceptors Risk Reduction:

- Integrated and tested the Generation II kill vehicle (KV) in preparation for a FY 2004 hover test and integration into the Near-field Infrared Experiment (NFIRE) payload. Second generation KE Boost KVs are mature variants of existing MDA developed KV components; they will be the first KVs with the performance to reliably achieve boost phase intercept.

Project: 3050 Segment Common Engineering and Integration

MDA Exhibit R-2A RDT&E Project Justi	ification		Date February 2	004
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCL	ATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603882C Bal	listic Missile Defense M	idcourse Defense Segment
	FY	2003	FY 2004	FY 2005
Counter/Countermeasures		26,386		
RDT&E Articles (Quantity)				

FY 2003 Accomplishments:

- Updated and maintained the open-source database on the BMDS and generated one set of countermeasures against the open source system architecture.
- Updated the technical description of the baseline BMDS and generated one set of countermeasures with threat risk assessment.
- Initiated operations; performed one cycle of BMDS assessment; select areas for analysis; and identified system weaknesses, technical concerns, and block transition issues.
- Organized Element participation in program, analyzed Red and Black Team countermeasures and proposed counter-countermeasure mitigation strategies.
- Reviewed adversary teams' countermeasures and Blue Team response; provided independent assessments of teams' products to MDA Director.
- Conducted Aegis BMD Counter-Countermeasures technique characterization.
- Conducted Aegis BMD Counter-Countermeasures track feature design and discrimination.

C. Other Program Funding Summary

3 3								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

Project: 3050 Segment Common Engineering and Integration

	Date
MDA Exhibit R-2A RDT&E Project Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment
	To Total

								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing

D. Acquisition Strategy

The Missile Defense Agency (MDA) will follow a capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks.

The Segment Common Engineering & Integration project includes risk reduction activities for Ground and Sea-based Midcourse Defense projects and counter/countermeasures that are capability-based, rather than threat-based. The MDA participates in a countermeasures program that focuses on identifying threat countermeasures that may not yet be evident, but are physically plausible and technically feasible. The program identifies and develops solutions to improve the capability of ballistic missile defense projects to defeat those countermeasures. Solutions that successfully demonstrate an improvement in the MDA project performance are integrated into the block development program.

Project: 3050 Segment Common Engineering and Integration

							Date			-
	MDA Exhi	ibit R-3 RDT&E Proj	ject Cost Ana	lysis			Februa	ry 2004		
APPROPRIATION/BUDGET A					R-1 NOMEN					
RDT&E, DW/04 Advanced	Component I	Development and Pr	rototypes (A	.CD&P)	0603882C	Ballistic Mis	ssile Defens	se Midcourse I	Defense Seg	ment
I. Product Development Cost (\$ i										
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Risk Reduction										
		NSWC/DD/				1				
Midcourse Risk Reduction	MIPR	VA	2,625						2,625	
1		JHU/APL/				1				1
Midcourse Risk Reduction	SS/CPAF	MD	7,437						7,437	
1		LM/								I
Midcourse Risk Reduction	SS/CPAF	NJ	10,655						10,655	
		Raytheon/				1				1
Midcourse Risk Reduction	SS/CPAF	AZ	42,743						42,743	<u> </u>
Counter/Countermeasures										<u> </u>
		JHU/APL/	T						[
Counter/Countermeasures	SS/CPAF	MD	1,000						1,000	<u> </u>
		LM/								
Counter/Countermeasures	SS/CPAF	NJ	3,000						3,000	<u> </u>
		Raytheon/								
Counter/Countermeasures	SS/CPAF	AZ	9,688						9,688	<u> </u>
Subtotal Product Development			77,148	0		0		0	77148	
Remarks										
Tl Di-le Dodystion offents transition		E1mont (DE) 0602900	C Dallistia Mia	-!1- Dofoman C	Section (DMDC)	C-vo booinnin	- : EV 2004 .	!-:!a the EVV off	Ct- tuanaitiana	-1 +- +h-o
The Risk Reduction efforts transition BMDS Interceptor PE 0603886C. The										a to the
Bivids interceptor 12 00030000. 11	ic Counter, Count	concession (C/Civi) circi	its transitioned	WIL 000507	OC Bailistic 1.11.	SSIIC Determine D	ystem core se,	gilling in 1 1 200	<i>7</i> 4.	
II. Support Costs Cost (\$ in Thou										
	Contract	Performing	Total		FY 2004		FY 2005		[Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Risk Reduction										 L
CEKV	Various		3,298						3,298	
		NSWC/IH/								
Midcourse Risk Reduction	MIPR	MD	700						700	1
										,

Project: 3050 Segment Common Engineering and Integration

	MDA Exhi	ibit R-3 RDT&E Proj	ect Cost Ana	lysis			Date Februa	ry 2004		
APPROPRIATION/BUDGET A		3		•	R-1 NOMEN	NCLATURE				
RDT&E, DW/04 Advanced		Development and Pr	ototypes (A	CD&P)			ssile Defens	e Midcourse	Defense Segi	ment
	Contract	Performing	Total	<u> </u>	FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
		NAWC/CL/						-		
BMDS Interceptors	MIPR	CA	400						400	
		NAWC/PM/								
Midcourse Risk Reduction	MIPR	CA	150						150	
		JHU/APL/								
Midcourse Risk Reduction	SS/CPFF	MD	1,050						1,050	
		Raytheon/								
Midcourse Risk Reduction	C/CPAF	AZ	200						200	
		SEG/								
Midcourse Risk Reduction	C/CPFF	VA	1,000						1,000	
		NSWC/DD/								
Midcourse Risk Reduction	MIPR	VA	914						914	
		MIT/LL/								
Midcourse Risk Reduction	SS/FFRDC	MA	850						850	
Counter/Countermeasures										
		Boeing/								
Counter/Countermeasures	SS/CPAF	AL	7,595						7,595	
		MIT Lincoln Labs/								
Counter/Countermeasures	SS/FFRDC	MA	4,307						4,307	
Counter/Countermeasures	Various	Various	5,793						5,793	
		NSWC/DD/								
Counter/Countermeasures	MIPR	VA	914						914	
		NSWC/IH/								
Counter/Countermeasures	MIPR	MD	700						700	
		LM/								
Counter/Countermeasures	C/CPAF	NJ	800						800	
		BAE/								
Counter/Countermeasures	C/CPFF	VA	500						500	
		JHU/APL/								
Counter/Countermeasures	SS/CPFF	MD	1,025						1,025	
	I		,			<u> </u>	<u> </u>	I		

Project: 3050 Segment Common Engineering and Integration

Contract Performing Total Prys FY 2004 Award FY 2005 Award Cost to Total	M	A Exhibit R-3 RDT	&E Project Cost Ana	alysis			Februa	ry 2004		
Contract Performing Method Activity & PYs FY 2004 Award FY 2005 Award Cost to Total										
Method & Activity & PYs FY 2004 Award FY 2005 Award Cost to Cost	DW/04 Advanced Comp	nent Development	t and Prototypes (A	ACD&P)	0603882C	Ballistic Mis	sile Defens	se Midcourse E	Defense Seg	ment
Cost Categories:	Cc	tract Performi	ing Total		FY 2004		FY 2005			Target
Counter/Countermeasures	M	hod Activity	& PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Counter/Countermeasures	ies: &	ype Locatio	on Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Counter/Countermeasures		Raytheo	on/							
Counter/Countermeasures	ntermeasures C/o	PAF AZ	200						200	
Subtotal Support Costs 31,396 0 0 0 0 31396		SEG/								
III. Test and Evaluation Cost (\$ in Thousands)	ntermeasures C/	PFF VA	1,000						1,000	
Method & Activity & PYs FY 2004 Award FY 2005 Award Cost to Total	port Costs		31,396	0		0		0	31396	
Contract Performing Total PY 2004 Award FY 2005 Award Cost to Total Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost										
Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost Risk Reduction MIPR CINCPACFLT/ HI 500 500 500 Risk Reduction MIPR Corona, CA 155 155 Risk Reduction MIPR VA 568 568 Risk Reduction MIPR CA 795 795 JHU/APL/ Risk Reduction SS/CPFF MD 200 200			ing Total		FY 2004		FY 2005			Target
Contract Performing Total FY 2004 Award FY 2005 Award Cost to Total Cost Categories: & Type Location Cost Cost Date Cost Date Complete Cost	Fyeluation Cost (Sin The	eande)								
Cost Categories: & Type Location Cost Date Cost Date Complete Cost Risk Reduction MIPR CINCPACFLT/ S00	Co	tract Performi	ing Total		FY 2004		FY 2005			Target
Risk Reduction CINCPACFLT/ Soo 500 Risk Reduction MIPR HI 500 500 Risk Reduction MIPR Corona, CA 155 155 Risk Reduction MIPR VA 568 568 Risk Reduction MIPR CA 795 795 Risk Reduction SS/CPFF MD 200 200		•					Award		Total	Value of
CINCPACFLT/ S00 S00 S00 S00 S00 S00 S00 S00 S00 SSWC/ SISK Reduction MIPR Corona, CA 155 S155 S155 S155 S155 S68 S		ype Location	on Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Risk Reduction MIPR HI 500 500 Risk Reduction NSWC/ 155 155 Risk Reduction MIPR VA 568 568 Risk Reduction MIPR VA 568 795 Risk Reduction MIPR CA 795 795 Risk Reduction SS/CPFF MD 200 200	ion									
NSWC/ NSWC/										
Risk Reduction MIPR Corona, CA 155 NSW/DD/ NSW/DD/ 568 Risk Reduction MIPR VA 568 NSWC/PHD/ NSWC/PHD/ 795 Risk Reduction MIPR CA 795 JHU/APL/ JHU/APL/ 200	on N								500	
NSW/DD/ Sisk Reduction MIPR										
Risk Reduction MIPR VA 568 568 NSWC/PHD/ NSWC/PHD/ 795 795 Risk Reduction MIPR CA 795 795 Risk Reduction SS/CPFF MD 200 200	on N								155	
NSWC/PHD/										
Risk Reduction MIPR CA 795 795 JHU/APL/ JHU/APL/ 200 200	on N								568	
Risk Reduction SS/CPFF MD 200 200										
Risk Reduction SS/CPFF MD 200 200	on N								795	
Park Poduction Verious 707 107										
		Variou							282	
Subtotal Test and Evaluation 2,500 0 0 0 2500	and Evaluation		2,500	0		0		0	2500	
Remarks										

Project: 3050 Segment Common Engineering and Integration

	MDA Exhi	bit R-3 RDT&E Proj	ject Cost Ana	lysis			Date Februa	ry 2004		·
APPROPRIATION/BUDGET AC	-	Samulammant and D	mototom og (A	CD & D)	R-1 NOMEN		asila Dafana	. Midaarmaa I	Defense Con	04
RDT&E, DW/04 Advanced (Component D	evelopment and P	rototypes (A	CD&P)	0003882C 1	Bainstic iviis	ssiie Defens	e Midcourse l	Defense Seg	ment
IV. Management Services Cost (\$	in Thousands)									
	Contract	Performing	Total		FY 2004		FY 2005			Target
	Method	Activity &	PYs	FY 2004	Award	FY 2005	Award	Cost to	Total	Value of
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Complete	Cost	Contract
Subtotal Management Services										
Remarks										
Project Total Cost			111,044	0		0			111,044	
Remarks										

Project: 3050 Segment Common Engineering and Integration

MDA	Exh	nibit	R-4	Sche	edule	e Pro	ofile											Date Feb		ry 20	004							
APPROPRIATION/BUDGET ACTIVITY	-volo		ant c	- nd	Duct	- at-	- 00 (N 6-1)		NO					~a : lo	Dof	· and	· 1/1:	400		Dof	form a	- Ca	~~~	4	
RDT&E, DW/04 Advanced Component De	vero	pme	mt a	ma i	Prot	οιγι	es (ACI	Dai	')	VO	USÕÕ	12C	Ban	ISUC	: IVIIS	SSHE	Dei	ense	e ivii	aco	urse	Dei	ense	e Seg	gme	nι	
D. 117		2.0				2.6				20	~ ~			20	~ ~			20	^ =			20	20			20		
Fiscal Year			003		Г.		004	Π.		20				20				20					08				09	\neg
	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
Testing Milestones																												
AEGIS BMD Monolithic DACS MDU 1	Δ	igwedge		<u> </u>	 	<u> </u>	<u> </u>	╨																$\vdash \vdash$		\vdash	$\vdash \vdash \vdash$	
AEGIS BMD Monolithic DACS MDU 2 AEGIS BMD Monolithic DACS Flight	$ldsymbol{ldsymbol{ldsymbol{\sqcup}}}$			<u> </u>	<u> </u> -	<u> </u>	<u> </u>	╨																igwdapprox	igsqcup	igwdap	\longmapsto	
Qualification			Δ																									
Aegis BMD Monolithic DACS Flight Qualification			Δ																									
Manufacturing Processes and Advanced Materials																												
Blue Team CCM plans against Red and Black Team CM			Δ																									
Red Team Countermeasure Conceptual Designs	Δ																											
Blue Team CCM plans against Red and Black Team CM				Δ																								
Red Team Countermeasure Conceptual Designs				Δ																								
Black Team Countermeasure Conceptual Designs	Δ		Δ																									
Development Milestones																												
Aegis BMD VLS PDR		Δ																										
Aegis BMD VLS CDR				Δ																								

Project: 3050 Segment Common Engineering and Integration

		UNCLA	.10011			Date	-	
MDA I	Exhibit R-4A Sch	radula Datail				February 20	ina	
APPROPRIATION/BUDGET ACTIVITY	Allibit K-7A Sch	edule Detail		R-1 NOI	MENCLATURE	Tebruary 20	04	
RDT&E, DW/04 Advanced Component Dev	elopment and l	Prototypes (AC!	D&P)			sile Defense Mic	dcourse Defense	Segment
TED TWEE, B 1170 1 114 (and component 2 c.	cropinent und	1000, pes (1101	<i>5</i> 41)	000000	The state of the s	Sile 25 Clerise 1.21	reduise Deletise	beginene
<u>,</u>								
Schedule Profile	FY 2003	FY 2004	FY	Y 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones								
AEGIS BMD Monolithic DACS MDU 1	1Q							
AEGIS BMD Monolithic DACS MDU 2	2Q							
AEGIS BMD Monolithic DACS Flight Qualification	3Q							
Aegis BMD Monolithic DACS Flight Qualification	3Q							
Manufacturing Processes and Advanced Materials								
Blue Team CCM plans against Red and Black Team CM	3Q							
Red Team Countermeasure Conceptual Designs	1Q		1					
Blue Team CCM plans against Red and Black Team CM	4Q							
Red Team Countermeasure Conceptual Designs	4Q		†					1
Black Team Countermeasure Conceptual Designs	1Q,3Q		†					1
Development Milestones			†					1
Aegis BMD VLS PDR	2Q		+	+				†
Aegis BMD VLS CDR	4Q							1

Project: 3050 Segment Common Engineering and Integration

MDA Exhibit R-2A RDT&E Project Justification				Date F ebruary 2	004		
APPROPRIATION/BUDGET ACTIVITY	R-	NOMENCLA	TURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	P) 06	3882C Ballis	stic Missile	Defense M	idcourse De	efense Segn	nent
COST (\$ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3090 Program-Wide Support	79,44	9 0	0	0	0	0	0
RDT&E Articles Qty		0 0	0	0	0	0	0

Note: Fiscal Year 2003 is reflected in Project 3090 and Fiscal Years 2004 and out are in Project 0602.

A. Mission Description and Budget Item Justification

This project covers personnel and related support costs, statutory and fiscal requirements.

Personnel covers government civilians performing program-wide oversight functions such as contracting, program integration, safety, quality and mission assurance at Missile Defense Agency (MDA) Executing Agents within the US Army Space & Missile Defense Command, US Army PEO Air and Missile Defense, US Navy PEO for Theater Surface Combatants, Office of Naval Research, and US Air Force.

Assistance required to support Missile Defense Agency program-wide management functions is also contained in this project. Typical efforts include cost estimating; audit; technology integration across MDA projects; and assessment of schedule, cost and performance, with attendant documentation of the many related programmatic issues. The requirements for this area are based on most economical and efficient utilization of contractors versus government personnel.

Fiscal Requirements include reimbursable services acquired through the Defense Working Capital Fund (DWCF) such as accounting services provided by the Defense Finance and Accounting Services (DFAS); reserves for special termination costs on designated contracts; and provisions for terminating other programs as required. MDA has additional requirements to provide for foreign currency fluctuations on its limited number of foreign contracts. Also includes funding for charges to canceled appropriations in accordance with Public Law 101-510.

Note that these funds are allocated across multiple Program Elements in accordance with the Fiscal Year 1996 Authorization Act, which directed these funds be allocated to the programs being supported rather than managed from a single source. This structure often makes it difficult to level-fund all PE's while maintaining an orderly fiscal structure for executing the individual Program-Wide Support efforts.

B. Accomplishments/Planned Program

Diffeedinghishmenes/Fidimed Flogram			
	FY 2003	FY 2004	FY 2005
Civilian Salaries and Support	79,449	0	0
RDT&E Articles (Quantity)			

Personnel

Provides funding for government salaries and benefits at the Missile Defense Agency that are associated with program-wide support.

Management Support:

Funds the contract SETA support costs directly associated with Missile Defense Agency program-wide support organizations. This effort provides the funding for the Missile Defense Agency's executing agents (Army Space and Missile Defense Command, Army PEO-AMD, Air Force, and Navy) including government salaries & benefits, SETA support, and various management/overhead costs.

Project: 3090 Program-Wide Support

MDA Exhibit R-2A (PE 0603882C)

	Date
MDA Exhibit R-2A RDT&E Project Justification	February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missile Defense Midcourse Defense Segment

Fiscal Requirements:

This effort funds various requirements at the Missile Defense Agency, to include accounting services, special termination costs foreign currency fluctuations, and charges from cancelled appropriations.

IM/IT Operations:

This effort pays for Information Management/Information Technology requirements within the Missile Defense Agency. These requirements are moved to the Management Headquarters Program Element in Fiscal Years 2004-2009.

C. Other Program Funding Summary

· ·								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing

Project: 3090 Program-Wide Support

MDA :	Exhibit R-2A I	RDT&E Projec	ct Justification			Date Febr	uary 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Compone		1 NOMENCLATU 03882C Ballisti		nse Midcours	se Defense Seg	gment			
								То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,5	99 1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,4	76 656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,0	49 445,971	456,339	469,621	Continuing	Continuing

Project: 3090 Program-Wide Support

MDA Exhibit R-2A (PE 0603882C)

MDA Exhibit R-2A RDT&E Project Justification				Date February 2	004		
APPROPRIATION/BUDGET ACTIVITY		1 NOMENCL					
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&	P 06	03882C Ball	stic Missile	Defense Mi	idcourse De	efense Segn	nent
COST (\$ in Thousands)	FY 200	3 FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0602 Program-Wide Support		0 76,302	47,084	39,447	45,064	30,720	35,670
RDT&E Articles Qty		0 (0	0	0	0	0

Note: Fiscal Year 2003 is reflected in Project 3090 and Fiscal Years 2004 and out are in Project 0602.

A. Mission Description and Budget Item Justification

This project covers personnel and related support costs, statutory and fiscal requirements.

Personnel covers government civilians performing program-wide oversight functions such as contracting, program integration, safety, quality and mission assurance at Missile Defense Agency (MDA) Executing Agents within the US Army Space & Missile Defense Command, US Army PEO Air and Missile Defense, US Navy PEO for Theater Surface Combatants, Office of Naval Research, and US Air Force.

Assistance required to support Missile Defense Agency program-wide management functions is also contained in this project. Typical efforts include cost estimating; audit; technology integration across MDA projects; and assessment of schedule, cost and performance, with attendant documentation of the many related programmatic issues. The requirements for this area are based on most economical and efficient utilization of contractors versus government personnel.

Fiscal Requirements include reimbursable services acquired through the Defense Working Capital Fund (DWCF) such as accounting services provided by the Defense Finance and Accounting Services (DFAS); reserves for special termination costs on designated contracts; and provisions for terminating other programs as required. MDA has additional requirements to provide for foreign currency fluctuations on its limited number of foreign contracts. Also includes funding for charges to canceled appropriations in accordance with Public Law 101-510.

Note that these funds are allocated across multiple Program Elements in accordance with the Fiscal Year 1996 Authorization Act, which directed these funds be allocated to the programs being supported rather than managed from a single source. This structure often makes it difficult to level-fund all PE's while maintaining an orderly fiscal structure for executing the individual Program-Wide Support efforts.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Civilian Salaries and Support	0	76,302	47,084
RDT&E Articles (Quantity)			

Personnel:

Provides funding for government salaries and benefits at the Missile Defense Agency that are associated with program-wide support.

Project: 0602 Program-Wide Support

MDA Exhibit R-2A (PE 0603882C)

		Date
MDA Exhibit R-2A RDT&E Project Justification		February 2004
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603882C Ballistic Missil	e Defense Midcourse Defense Segment

Management Support:

Funds the contract SETA support costs directly associated with Missile Defense Agency program-wide support organizations. This effort provides the funding for the Missile Defense Agency's executing agents (Army Space and Missile Defense Command, Army PEO-AMD, Air Force, and Navy) including government salaries & benefits, SETA support, and various management/overhead costs.

Fiscal Requirements:

This effort funds various requirements at the Missile Defense Agency, to include accounting services, special termination costs foreign currency fluctuations, and charges from cancelled appropriations.

IM/IT Operations:

This effort pays for Information Management/Information Technology requirements within the Missile Defense Agency. These requirements are moved to the Management Headquarters Program Element in Fiscal Years 2004-2009.

C. Other Program Funding Summary

					1	·	1	То	Total
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
PE 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing
PE 0603869C Meads Concepts - Dem/Val	101,754	0	0	0	0	0	0	Continuing	Continuing
PE 0603879C Advanced Concepts, Evaluations and Systems	0	149,993	256,159	229,512	232,463	231,583	224,626	Continuing	Continuing
PE 0603880C Ballistic Missile Defense System Segment	1,028,016	0	0	0	0	0	0	Continuing	Continuing
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	134,093	874,527	937,748	993,048	1,117,657	570,000	410,324	Continuing	Continuing
PE 0603883C Ballistic Missile Defense Boost Defense Segment	705,643	617,270	492,614	555,667	611,736	473,602	455,961	Continuing	Continuing
PE 0603884C Ballistic Missile Defense Sensors	327,013	425,421	591,957	790,265	1,453,679	1,122,189	1,232,893	Continuing	Continuing
PE 0603886C Ballistic Missile Defense System Interceptors	0	117,719	511,262	1,118,599	1,717,480	2,196,531	2,449,322	Continuing	Continuing
PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	Continuing	Continuing
PE 0603889C Ballistic Missile Defense Products	0	305,309	418,608	421,049	445,971	456,339	469,621	Continuing	Continuing

Project: 0602 Program-Wide Support

MDA :	Exhibit R-2A I	RDT&E Projec	ct Justification			Date Febru	uary 2004		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component		NOMENCLATU 882C Ballistic		nse Midcours	se Defense Seş	gment			
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603890C Ballistic Missile Defense System Core	0	445,356	479,764	492,988	527,541	539,210	568,365	Continuing	Continuing
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	Continuing	Continuing
PE 0901598C Management Headquarters - MDA	35,331	92,449	141,923	146,099	145,112	151,727	154,583	Continuing	Continuing

Project: 0602 Program-Wide Support

MDA Exhibit R-2A (PE 0603882C)