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

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

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(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).

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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.

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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	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

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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.

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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.

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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.

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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

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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

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	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 - 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
PE 0901585C Pentagon Reservation	7,432	14,327	13,884	12,958	12,850	13,158	13,476	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 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.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
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I. Product Development Cost ($ in Thousands)

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
Ground-Based Interceptor (GBI)										
GBI	SS/CPAF	Boeing/ Various	158,889	0		0		CONT.	158,889	CONT.
Cobra Dane Upgrade										
Cobra Dane Upgrades	SS/CPAF	Boeing/ Various	11,600	0		0		CONT.	11,600	CONT.
GMD Fire Control & Communications										
GFC/C	SS/CPAF	Boeing/ Various	51,190	0		0		CONT.	51,190	CONT.
Element Engineering and Integration										
Element Engr & Integration	SS/CPAF	Boeing/ Various	47,812	0		0		CONT.	47,812	CONT.
Element Test & Evaluation (T&E)										
Element T&E	SS/CPAF	Boeing/ Various	17,500	0		0		CONT.	17,500	CONT.
Subtotal Product Development			286,991	0		0		0	286991	

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)

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
RDT&E Test Bed Construction										
Facility Construction	MIPR	COE/ AK	2,278,521	0		0		CONT.	2,278,521	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
Kodiak Construction	MIPR	COE/ AK	2,800	0		0		CONT.	2,800	CONT.
Site Activation										
Site Activation	SS/CPFF	Boeing/ AK	54,285	0		0		CONT.	54,285	CONT.
Subtotal Support Costs			2,335,606	0		0		0	2335606	

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)

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
Subtotal Test and Evaluation										

Remarks

IV. Management Services Cost ($ in Thousands)

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
Subtotal Management Services										

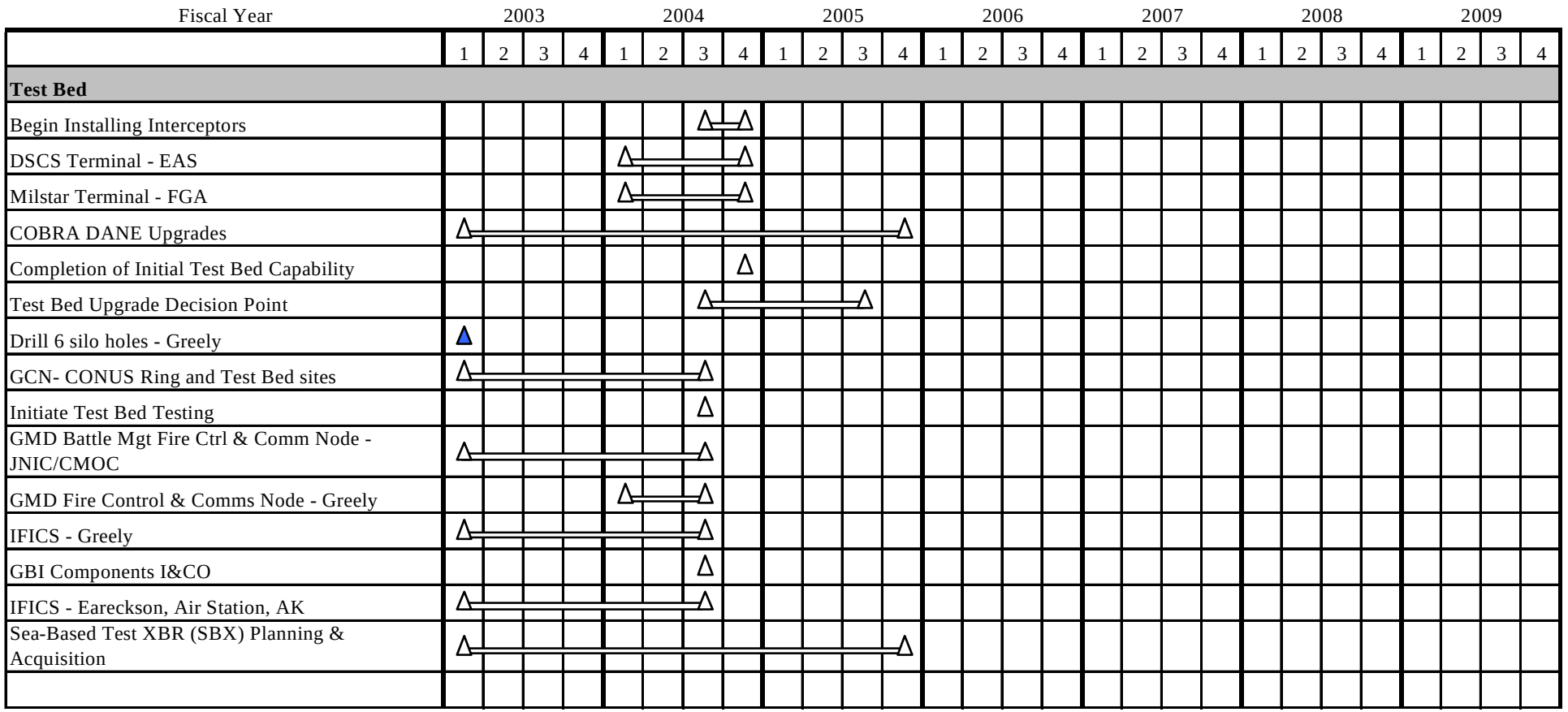
Remarks

Project Total Cost			2,622,597	0		0			2,622,597	

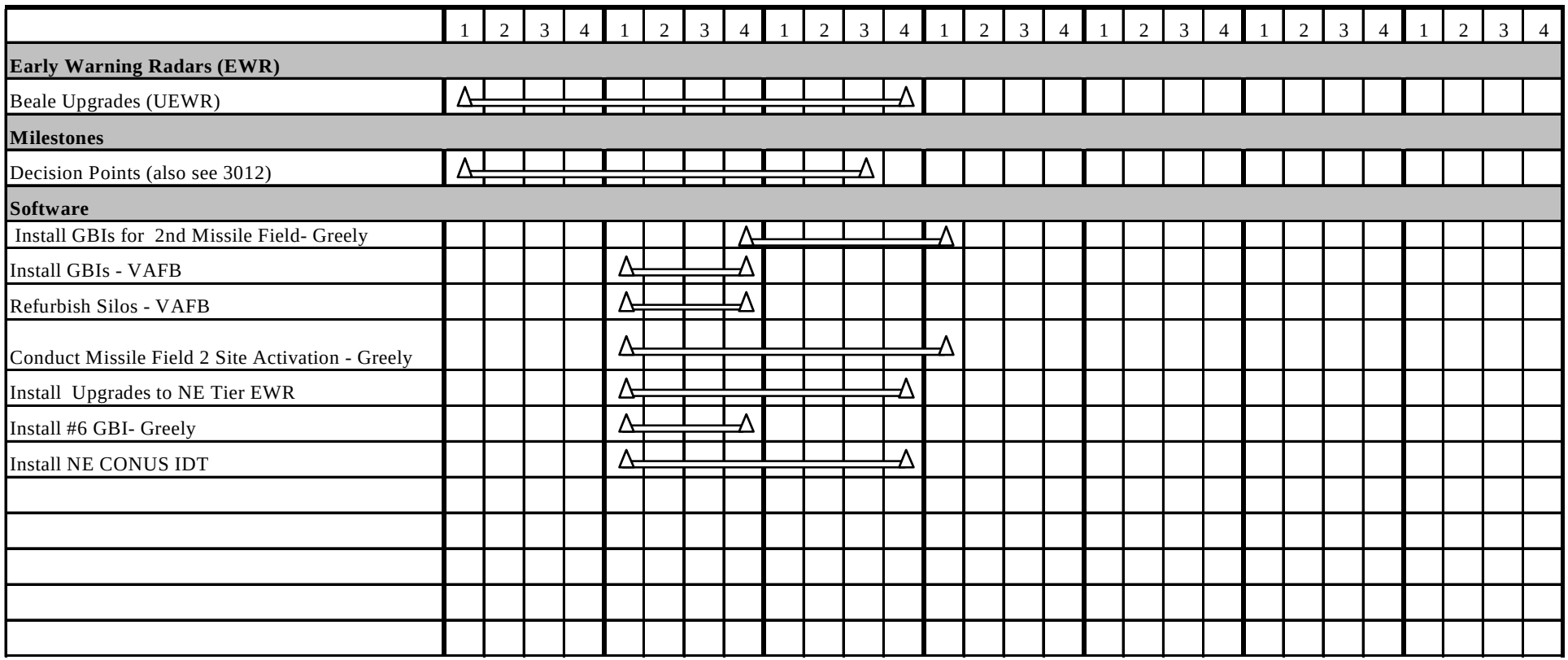
Remarks

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.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **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		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	1Q-4Q				

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	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.

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 Missile 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

	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.

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 Missile 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).

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 2004	FY 2005
Beale Early Warning Radar Upgrade		30,988	19,597
RDT&E Articles (Quantity)		1	

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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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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.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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	FY 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 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 worldwide.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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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.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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- 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.

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 2004	FY 2005
Initial Defensive Capability (RDT&E Construction)		116,437	134,597
RDT&E Articles (Quantity)			

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.

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 Missile 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.

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 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

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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 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

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. 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.

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

I. Product Development Cost ($ in Thousands)

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
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.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
Element Test & Evaluation (T&E)										
Element T&E	SS/CPAF	Boeing/ Various	0	14,636	1Q	3,078	1/2Q	CONT.	17,714	CONT.
Subtotal Product Development			0	1,151,150		726,462		0	1877612	

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)

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
RDT&E Test Bed Construction										
Construction	MIPR	COE/ 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										
Community Impacts	C/CPAF	Various/ AK	0	6,585	1Q	0		CONT.	6,585	CONT.
Site Activation										
Site Activation	SS/CPFF	Boeing/ 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.

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

III. Test and Evaluation Cost ($ in Thousands)

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
Subtotal Test and Evaluation										

Remarks

IV. Management Services Cost ($ in Thousands)

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
Subtotal Management Services										

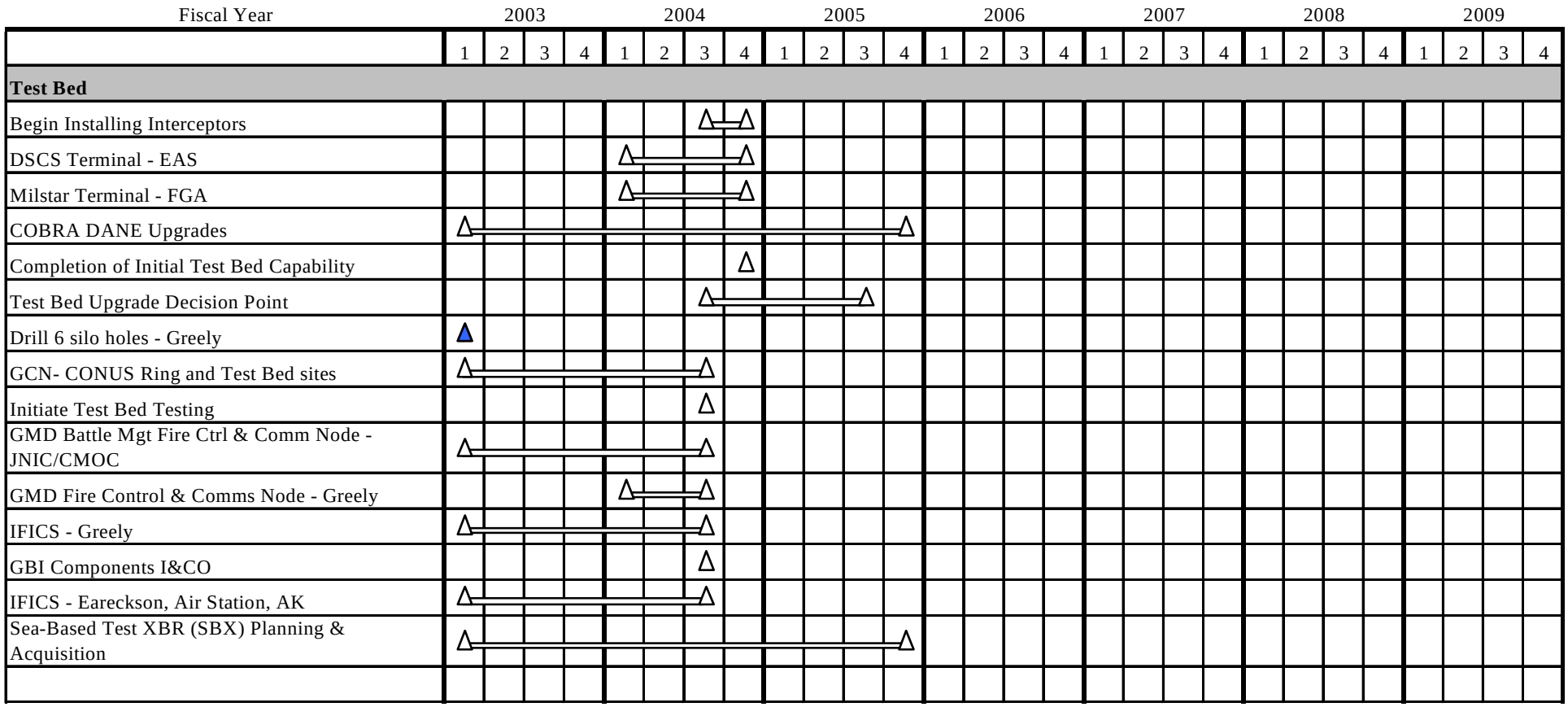
Remarks

Project Total Cost			0	1,342,816		861,059			2,203,875	

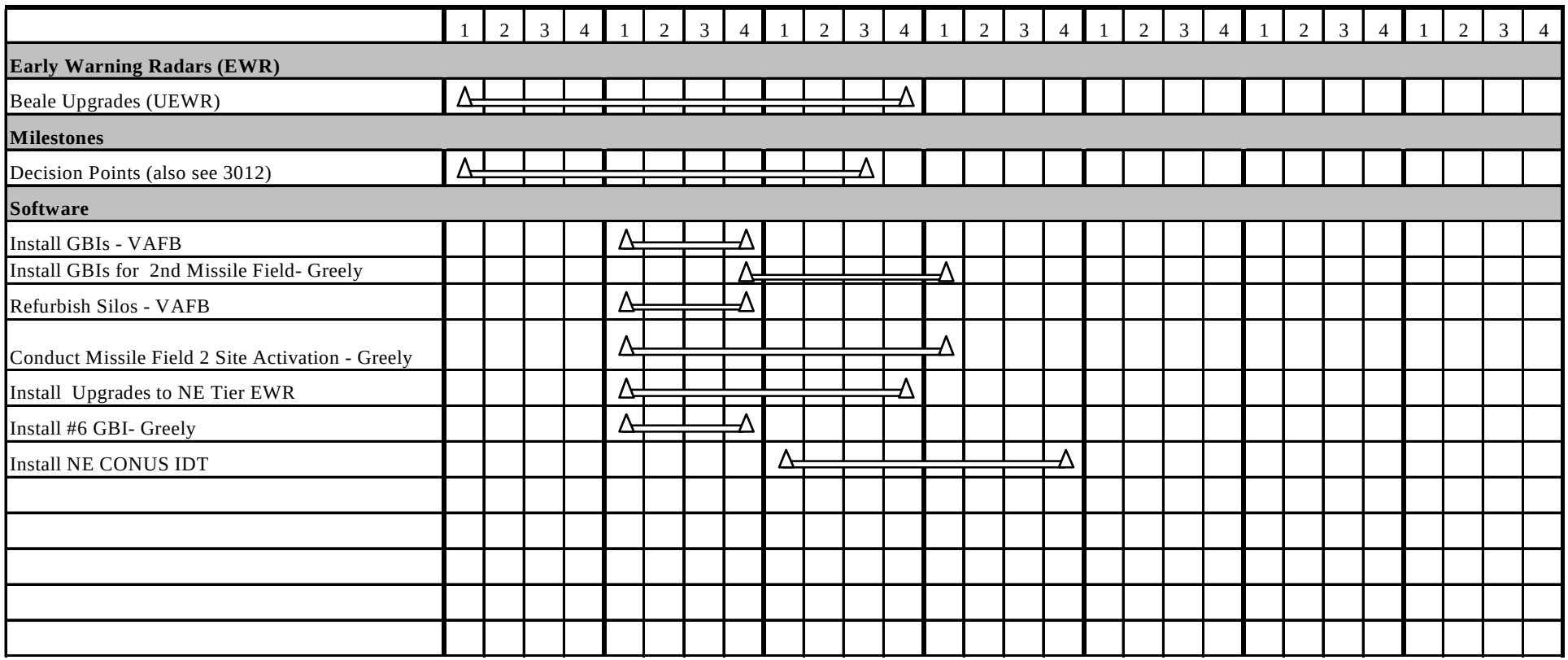
Remarks

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.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **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		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 - 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	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	1Q-4Q			

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3012 GMD Dev & Test Bed Upgrades	2,121,573	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:

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 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

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 Missile Defense Midcourse Defense Segment**

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.

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	FY 2003	FY 2004	FY 2005
Sea-Based X-Band Radar	228,000		
RDT&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 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.

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	FY 2003	FY 2004	FY 2005
Beale Early Warning Radar Upgrade	64,900		
RDT&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 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

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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.

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	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)			

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

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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

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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

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	FY 2003	FY 2004	FY 2005	FY 2006	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.

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I. Product Development Cost ($ in Thousands)

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
Ground Based Interceptor (GBI)										
GBI	SS/CPAF	Boeing/ Various	837,556	0		0		CONT.	837,556	CONT.
X Band Radar Technology Development										
	SS/CPAF	Boeing/ Various	88,484	0		0		CONT.	88,484	CONT.
Sea-Based X-Band Radar										
	SS/CPAF	Boeing/ Various	41,900	0		0		CONT.	41,900	CONT.
Upgraded Early Warning Radar (UEWR) Development										
	SS/CPAF	Boeing/ Various	22,660	0		0		CONT.	22,660	CONT.
Beale Early Warning Radar Upgrade										
	SS/CPAF	Boeing/ Various	107,900	0		0		CONT.	107,900	CONT.
GMD Fire Control & Communications										
	SS/CPAF	Boeing/ Various	392,166	0		0		CONT.	392,166	CONT.
Element Engineering & Integration										
	SS/CPAF	Boeing/ Various	136,713	0		0		CONT.	136,713	CONT.
Element Test and Evaluation										
	SS/CPAF	Boeing/ Various	114,954	0		0		CONT.	114,954	CONT.

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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										
	SS/CPAF	Boeing / Various	21,325	0		0		CONT.	21,325	CONT.
Subtotal Product Development			1,763,658	0		0		0	1763658	

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)

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
Ground Based Interceptor (GBI)										
	SS/FP	Davidson/ AL	564	0		0		CONT.	564	CONT.
	SS/FP	Mevatec/ AL	7,282	0		0		CONT.	7,282	CONT.
	SS/FP	TSI/ AL	5,794	0		0		CONT.	5,794	CONT.
	C/CPFF	Sparta/ AL	1,730	0		0		CONT.	1,730	CONT.
	MIPR	AMCOM/ AL	437	0		0		CONT.	437	CONT.
	MIPR	USASMDC/ AL	337	0		0		CONT.	337	CONT.
	MIPR	DOT/ITOP/ DC	487	0		0		CONT.	487	CONT.
	MIPR	Mitre/ AL	131	0		0		CONT.	131	CONT.

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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
	MIPR	Misc/ Various	214	0		0		CONT.	214	CONT.
	Various	Misc/ Various	1,651	0		0		CONT.	1,651	CONT.
	SS/FP	CSC/ AL	7,245	0		0		CONT.	7,245	CONT.
	MIPR	SMC/ 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										
	MIPR	Xontech/ Boston, MA	2,700	0		0		TBD	2,700	TBD
	C/CPAF	TRW/ JNIC	338	0		0		TBD	338	TBD
	C/CPFF	AFRL/ ESC, Hanscom AFB	120	0		0		TBD	120	TBD
Element Engineering & Integration										
	MIPR	TSC/SMDC/ AL	1,100	0		0		CONT.	1,100	CONT.
	MIPR	NSWC/ Dahlgren, VA	5,795	0		0		CONT.	5,795	CONT.

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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
	MIPR	DTRA/ Dulles, VA	1,360	0		0		CONT.	1,360	CONT.
	MIPR	NAIC/ Wright Patterson, AFB	900	0		0		CONT.	900	CONT.
	MIPR	SBIRS SPO/ LA AFB, CA	2,900	0		0		CONT.	2,900	CONT.
	MIPR	DTD/GMD/ Huntsville, AL	2,200	0		0		CONT.	2,200	CONT.
	MIPR	GME Engineering Analysis/ Huntsville, AL	3,190	0		0		CONT.	3,190	CONT.
	MIPR	GMD Studies & Analysis/ Huntsville, AL	1,900	0		0		CONT.	1,900	CONT.
	SS/CPFF	CSC/ Arlington, VA	18,288	0		0		CONT.	18,288	CONT.
	MIPR	MIT Lincoln Labs/ Cambridge, MA	973	0		0		CONT.	973	CONT.
	MIPR	Photon Labs/ Arlington, VA	1,334	0		0		CONT.	1,334	CONT.
	SS/CPAF	IDA/ Arlington, VA	230	0		0		CONT.	230	CONT.
	C/CPAF	Miltec/ Huntsville, AL	0	0		0		CONT.		CONT.
	MIPR	Aerospace Corp./ Los Angeles, CA	550	0		0		TBD	550	TBD
	C/CPAF	Various	400	0		0		CONT.	400	CONT.
	MIPR	JNIC/ Colorado Springs, CO	5,480	0		0		CONT.	5,480	CONT.

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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
Program Planning and Management										
SPT DC	C/CPAF	CSC/ DC	94,875	0		0		CONT.	94,875	CONT.
SPT HSV	C/CPAF	CSC/ AL	44,226	0		0		CONT.	44,226	CONT.
TRADOC System Manager	MIPR	SMDC/ 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.
	C/CPFF	Mevatech/ 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.		CONT.
	C/CPFF	Mevatech/ 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.

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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
	MIPR	Colsa/ AL	65	0		0		CONT.	65	CONT.
	MIPR	COE	40,922	0		0		CONT.	40,922	CONT.
	MIPR	DTRA/ VA	275	0		0		CONT.	275	CONT.
	MIPR	NSA/ VA	6	0		0		CONT.	6	CONT.
	MIPR	USACE/ AL	5,353	0		0		CONT.	5,353	CONT.
	MIPR	USASMDC/ AL	500	0		0		CONT.	500	CONT.
	MIPR	USAF MET&CAL	609	0		0		CONT.	609	CONT.
	MIPR	Schriever AFB	400	0		0		CONT.	400	CONT.
	MIPR	NSA	21	0		0		CONT.	21	CONT.
	MIPR	Schriever AFB	59	0		0		CONT.	59	CONT.
	MIPR	CST	150	0		0		CONT.	150	CONT.
	MIPR	USASMDC/ AL	1,376	0		0		CONT.	1,376	CONT.
	C/CPFF	CSC/ AL	384	0		0		TBD	384	TBD
	C/CPFF	Sparta/ AL	384	0		0		TBD	384	TBD
	MIPR	AMCOM/ 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
Program Protection	C/CPAF	TRW/DC/ AL	4,300	0		0		TBD	4,300	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					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
	MIPR	USASMDC/AL/ 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.
Govt Furnished Information	MIPR	USASMDC/ AL	75,865	0		0		TBD	75,865	TBD
Base Support and Real Property	MIPR	USASMDC/ AL	0	0		0		CONT.		CONT.
Site Activation										
	C/CPFF	CSC/ AL	2,217	0		0		CONT.	2,217	CONT.
	MIPR	Various	2,917	0		0		CONT.	2,917	CONT.
	MIPR	USACE/ Huntsville, AL	6,928	0		0		CONT.	6,928	CONT.
	C/CPFF	CSC/ AL	2,888	0		0		CONT.	2,888	CONT.
	C/CPFF	L3 Communications/ AL	1,789	0		0		CONT.	1,789	CONT.
	MIPR	U.S. Army War College/ PA	1,440	0		0		CONT.	1,440	CONT.
		Various	3,050	0		0		CONT.	3,050	CONT.
	C/CPFF	Mevatech/ AL	1,817	0		0		CONT.	1,817	CONT.
	C/CPFF	Nichols/ AL	1,078	0		0		CONT.	1,078	CONT.
	C/CPFF	CSC/ AL	6,413	0		0		CONT.	6,413	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	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)

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 and Evaluation										
Combined Test Force	C/CPAF	Colsa/ AL	7,527	0		0		CONT.	7,527	CONT.
	C/CPIF	ASGI/ AL	507	0		0		CONT.	507	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	SS/CPAF	Boeing/ Various	2,250	0		0		CONT.	2,250	CONT.
	MIPR	Kirtland AFB/ NM	225	0		0		CONT.	225	CONT.
	MIPR	USAKA/ AK	22,578	0		0		CONT.	22,578	CONT.
	MIPR	Sandia/ NM	125	0		0		CONT.	125	CONT.
	MIPR	USASMDC/ AL	3,081	0		0		CONT.	3,081	CONT.
	C/TM	JNTF/ CO	1,861	0		0		CONT.	1,861	CONT.
	MIPR	Nichols/ AL	1,119	0		0		CONT.	1,119	CONT.
	C/TM	Mevatech/ AL	5,412	0		0		CONT.	5,412	CONT.
	C/TM	CSC/ AL	2,226	0		0		CONT.	2,226	CONT.
	C/CPIF	Aeromet/ Various	1,153	0		0		CONT.	1,153	CONT.
	MIPR	SBIRS SPO	610	0		0		CONT.	610	CONT.
	MIPR	AMCOM/ AL	1,728	0		0		CONT.	1,728	CONT.
	MIPR	USARSPACE/ AL	137	0		0		CONT.	137	CONT.
	MIPR	Eglin AAFB/ FL	150	0		0		CONT.	150	CONT.
	MIPR	Peterson AFB/ CO	348	0		0		CONT.	348	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	MIPR	OGA`s/ Various	612	0		0		CONT.	612	CONT.
	CPFF	IEC Electronics/ Various	3,069	0		0		CONT.	3,069	CONT.
	C/TM	CAS/ Various	1,100	0		0		CONT.	1,100	CONT.
	MIPR	MIT LLNL/ MA	4,944	0		0		CONT.	4,944	CONT.
	C/CPFF	ITT/ Various	2,480	0		0		CONT.	2,480	CONT.
	MIPR	AEDC/ TN	25	0		0		CONT.	25	CONT.
	MIPR	Sandia/ NM	3,566	0		0		CONT.	3,566	CONT.
	C/Other	Mevatech/ AL	100	0		0		CONT.	100	CONT.
	MIPR	HAFB/ MA	1,120	0		0		CONT.	1,120	CONT.
	MIPR	SMDC/ AL	93	0		0		CONT.	93	CONT.
	Other	TSI/ AL	1,005	0		0		CONT.	1,005	CONT.
	C/CPFF	VRC/ AL	2,953	0		0		CONT.	2,953	CONT.
	C/CPFF	Colsa/ AL	420	0		0		CONT.	420	CONT.
	MIPR	SLAD/ AL	175	0		0		CONT.	175	CONT.
	C/CPFF	CEI/ AL	647	0		0		CONT.	647	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPFF	TRW/ AL	2,333	0		0		CONT.	2,333	CONT.
	MIPR	Various OGA`s	1,361	0		0		CONT.	1,361	CONT.
	C/CPFF	SAIC/ Various	945	0		0		CONT.	945	CONT.
	MIPR	AEC/ Various	788	0		0		CONT.	788	CONT.
	MIPR	Sandia/ NM	29,195	0		0		CONT.	29,195	CONT.
	MIPR	USASMDC/ AL	8,814	0		0		CONT.	8,814	CONT.
	C/CPFF	SY Tech/ AL	2,370	0		0		CONT.	2,370	CONT.
	MIPR	SMC/ AL	36,116	0		0		CONT.	36,116	CONT.
	MIPR	OGA`s/ Various	5,425	0		0		CONT.	5,425	CONT.
	MIPR	Vandenberg AFB/ CA	3,457	0		0		CONT.	3,457	CONT.
TTEC	C/CPFF	SY Tech/ AL	5,907	0		0		CONT.	5,907	CONT.
	MIPR	SED/ AL	1,050	0		0		CONT.	1,050	CONT.
TTEC	MIPR	STRICOM/ 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

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

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)

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
X Band Radar Technology Development										
	FFRDC	MIT Lincoln Lab/ MA	1,765	0		0		CONT.	1,765	CONT.
Upgraded Early Warning Radar (UEWR) Development										
	FFRDC	MIT Lincoln Lab/ MA	600	0		0		CONT.	600	CONT.
	FFRDC	Mitre/ Various	5,763	0		0		CONT.	5,763	CONT.
	C/CPFF	SEMCOM/ Various	3,654	0		0		CONT.	3,654	CONT.
	C/CPFF	Tecolote/ Various	264	0		0		CONT.	264	CONT.
	C/CPFF	ESC/Hanscom/ Various	550	0		0		CONT.	550	CONT.
GMD Fire Control & Communications										
	MIPR	NSWC/ MD	4,605	0		0		CONT.	4,605	CONT.
	C/CPAF	TRW/ MA	8,287	0		0		CONT.	8,287	CONT.
	FFRDC	Mitre/IDA/ Various	1,545	0		0		CONT.	1,545	CONT.
	C/CPAF	Sparta/ AL	3,548	0		0		CONT.	3,548	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPAF	NRC/ Various	714	0		0		CONT.	714	CONT.
	C/BPA	QRI/ Various	959	0		0		CONT.	959	CONT.
	C/CPAF	CSC/ AL	1,852	0		0		CONT.	1,852	CONT.
	C/CPAF	Vanguard Research/ AL	171	0		0		CONT.	171	CONT.
	BPA	Tecolote/ Various	582	0		0		TBD	582	TBD
	MIPR	USAF ESC/ MA	84	0		0		CONT.	84	CONT.
	MIPR	ARL/ CA	300	0		0		CONT.	300	CONT.
	MIPR	DISA-GFX/ Various	5,531	0		0		TBD	5,531	TBD
	C/CPAF	Mevatech/ 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.
	MIPR	NSA/ MD	500	0		0		TBD	500	TBD
	MIPR	Argonne NL	195	0		0		CONT.	195	CONT.
	Various	Miscellaneous	971	0		0		CONT.	971	CONT.
Subtotal Management Services			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.

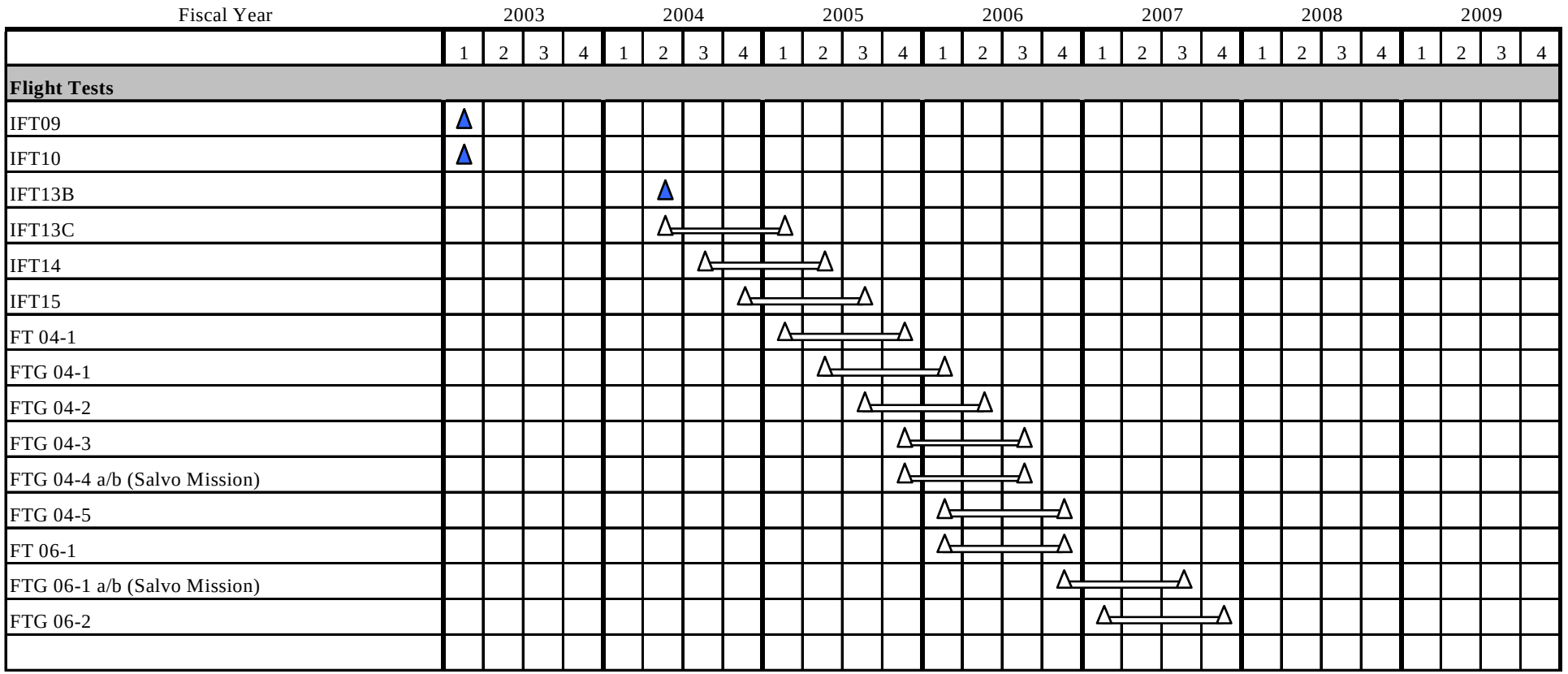
MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment

Project Total Cost			2,461,910	0		0			2,461,910	

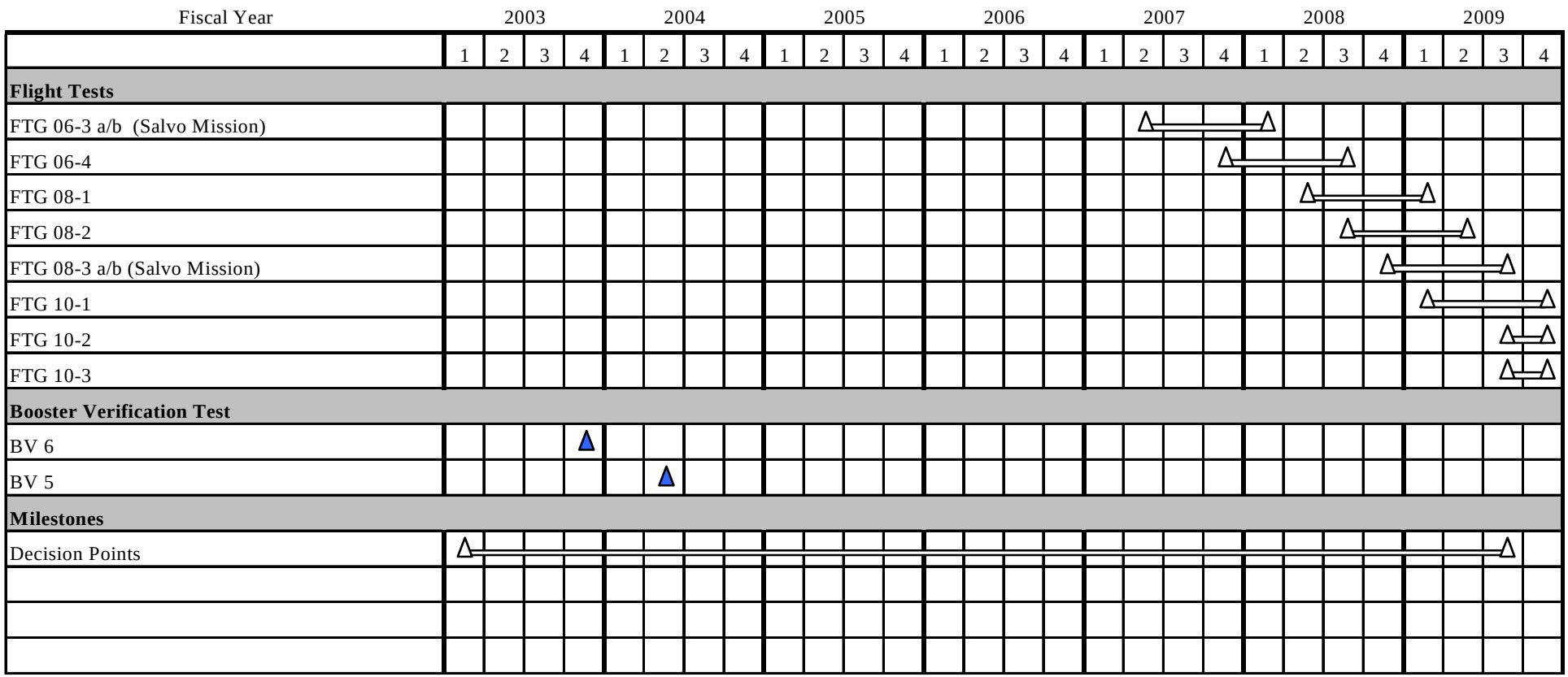
Remarks

The Prime Contractor has the 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 Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse 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	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					

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestones							
Decision Points	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	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.

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 Missile 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.

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 Missile 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.

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 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.

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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.

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	FY 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.

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 2004	FY 2005
Missile Defense Plan II (RDT&E Construction)			40,267
RDT&E Articles (Quantity)			

DISCUSSION. This GMD RDT&E Construction request is further justified in the accompanying DD-1391 Exhibits, RDT&E Construction Data.

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.

	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 element-level 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.

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 2004	FY 2005
Element Test and Evaluation		200,517	186,862
RDT&E Articles (Quantity)		2	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, 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.

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 Missile Defense Midcourse Defense Segment**

	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.

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 Missile 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	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.

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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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

	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
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

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	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	1,118,599	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

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.

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)							R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment			
I. Product Development Cost ($ in Thousands)										
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
Ground Based Interceptor (GBI)										
Ground Based Interceptor (GBI)	SS/CPAF	Boeing/ 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 (UEWR) Development	SS/CPAF	Boeing/ Various	0	8,223	1/4Q	57,774	1/4Q	CONT.	65,997	CONT.
GMD Fire Control & Communications										
Fire Control & Communications	SS/CPAF	Boeing/ Various	0	200,460	2Q	202,305	2Q	CONT.	402,765	CONT.
Missile Defense Plan II (GBI)										
GBI`s & Silos	SS/CPAF	Boeing/ Various				528,348	1Q		528,348	
Missile Defense Plan II (UEWR and IDT)										
UEWR & IDT	SS/CPAF	Boeing/ Various				22,385	1Q		22,385	
Element Engineering & Integration										
Systems Engineering & Integration	SS/CPAF	Boeing/ Various	0	137,083	1/2Q	144,691	1/2Q	CONT.	281,774	CONT.
Element Test and Evaluation										
	SS/CPAF	Boeing/ Various	0	49,296	1/2Q	43,175	1/2Q	CONT.	92,471	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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)

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
Ground Based Interceptor (GBI)										
	SS/FP	Davidson/ AL	0	1,192	1/2Q	1,192	1/2Q	CONT.	2,384	CONT.
	SS/FP	Mevatec/ AL	0	7,894	1/2Q	7,894	1/2Q	CONT.	15,788	CONT.
	SS/FP	TSI/ AL	0	7,449	1/2Q	6,136	1/2Q	CONT.	13,585	CONT.
	C/CPFF	Sparta/ AL	0	1,394	1/2Q	1,394	1/2Q	CONT.	2,788	CONT.
	MIPR	AMCOM/ AL	0	354	1/2Q	354	1/2Q	CONT.	708	CONT.
	MIPR	USASMDC/ AL	0	391	1/2Q	391	1/2Q	CONT.	782	CONT.
	MIPR	DOT/ITOP/ AL	0	231	1/2Q	231	1/2Q	CONT.	462	CONT.
	MIPR	Mitre/ DC	0	291	1/2Q	291	1/2Q	CONT.	582	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	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.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	MIPR	GME Engineering Analysis/ Huntsville, AL	0	1,980	1/2Q	1,980	1/2Q	CONT.	3,960	CONT.
	MIPR	GMD Studies & Analysis/ 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.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPFF	L3 Communications/ AL	0	2,584	3Q	2,584	3Q	CONT.	5,168	CONT.
	C/CPFF	Mevatech/ AL	0	902	3Q	902	3Q	CONT.	1,804	CONT.
	C/CPFF	TSI/ AL	0	910	3Q	910	3Q	CONT.	1,820	CONT.
	C/CPFF	MSAIC	0	96	3Q	96	3Q	CONT.	192	CONT.
	MIPR	AMCOM/ IMMC	0	1,625	3Q	1,625	3Q	CONT.	3,250	CONT.
	MIPR	AMCOM/ OGA	0	3,618	3Q	3,618	3Q	CONT.	7,236	CONT.
	C/CPFF	Mevatech/ 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.
	MIPR	Colsa/ AL	0	65	3Q	65	3Q	CONT.	130	CONT.
	MIPR	COE/ VA	0	41,187	3Q	26,455	3Q	CONT.	67,642	CONT.
	MIPR	DTRA/ VA	0	275	3Q	275	3Q	CONT.	550	CONT.
	MIPR	NSA/ AL	0	6	3Q	6	3Q	CONT.	12	CONT.
	MIPR	USACE/ AL	0	5,353	3Q	5,353	3Q	CONT.	10,706	CONT.
	MIPR	USASMDC/ AL	0	500	3Q	500	3Q	CONT.	1,000	CONT.
	MIPR	USASMDC	0	609	3Q	609	3Q	CONT.	1,218	CONT.
	MIPR	Schriever AFB	0	400	3Q	400	3Q	CONT.	800	CONT.
	MIPR	NSA	0	21	3Q	21	3Q	CONT.	42	CONT.
	MIPR	Schriever AFB	0	59	3Q	59	3Q	CONT.	118	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	MIPR	CST	0	150	3Q	150	3Q	CONT.	300	CONT.
	MIPR	USASMDC/ AL	0	1,376	3Q	1,376	3Q	CONT.	2,752	CONT.
		Various	0	2,354	2Q	2,236	2Q	CONT.	4,590	CONT.
Production	MIPR	AMRDEC/ AL	0	4,028	2Q	3,948	2Q	CONT.	7,976	CONT.
	CPFF	Various/ AL	0	2,664	2Q	2,410	2Q	CONT.	5,074	CONT.
Base Support and Real Property	MIPR	USASMDC/ AL	0	144,400	1Q	197,090	1Q	CONT.	341,490	CONT.
Site Activation										
	C/CPFF	CSC/ 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.
	MIPR	USACE/ Huntsville, AL	0	3,661	2Q	3,661	2Q	CONT.	7,322	CONT.
	C/CPFF	CSC/ AL	0	2,420	2Q	987	2Q	CONT.	3,407	CONT.
	C/CPFF	L3 Communications/ AL	0	1,499	2Q	946	2Q	CONT.	2,445	CONT.
	MIPR	U.S. Army War College/ PA	0	1,207	2Q	874	2Q	CONT.	2,081	CONT.
		Various	0	2,119	2Q	789	2Q	CONT.	2,908	CONT.
	C/CPFF	Mevatech/ AL	0	822	2Q	822	2Q	CONT.	1,644	CONT.
	C/CPFF	Nichols/ AL	0	1,573	2Q	751	2Q	CONT.	2,324	CONT.
	C/CPFF	CSC/ AL	0	4,808	2Q	7,086	2Q	CONT.	11,894	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPFF	Colsa/ AL	0	301	2Q	301	2Q	CONT.	602	CONT.
	MIPR	USACE/ Huntsville, AL	0	2,019	2Q	1,337	2Q	CONT.	3,356	CONT.
	C/CPFF	CSC/ AL	0	610	2Q	610	2Q	CONT.	1,220	CONT.
	CPFF	L3 Communications/ AL	0	1,377	2Q	854	2Q	CONT.	2,231	CONT.
	MIPR	USASMDC/ AL	0	4,244	2Q	3,524	2Q	CONT.	7,768	CONT.
	MIPR	USARAK/ AK	0	3,813	2Q	7,481	2Q	CONT.	11,294	CONT.
		Various	0	982	2Q	982	2Q	CONT.	1,964	CONT.
Contractor Logistics Support (CLS)										
	SS/CPAF	Boeing/ AK	0	0		104,750	1/2Q	CONT.	104,750	CONT.
Subtotal Support Costs			0	465,079		643,078		0	1108157	

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)

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 and Evaluation										
Combined Test Force	C/CPAF	Colsa/ AL	0	6,021	1/2Q	6,022	1/2Q	CONT.	12,043	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	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	0	180	1/2Q	180	1/2Q	CONT.	360	CONT.
	MIPR	USAKA/ AK	0	18,061	1/2Q	18,061	1/2Q	CONT.	36,122	CONT.
	MIPR	Sandia/ 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.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	MIPR	Peterson AFB/ CO	0	278	1/2Q	278	1/2Q	CONT.	556	CONT.
	MIPR	OGA`s/ Various	0	488	1/2Q	488	1/2Q	CONT.	976	CONT.
	CPFF	IEC Electronics/ Various	0	2,455	1/2Q	2,455	1/2Q	CONT.	4,910	CONT.
	C/TM	CAS/ Various	0	880	1/2Q	880	1/2Q	CONT.	1,760	CONT.
	MIPR	MIT LLNL/ MA	0	3,955	1/2Q	3,955	1/2Q	CONT.	7,910	CONT.
	C/CPFF	ITT/ Various	0	1,984	1/2Q	1,984	1/2Q	CONT.	3,968	CONT.
	MIPR	AEDC/ TN	0	20	1/2Q	20	1/2Q	CONT.	40	CONT.
	MIPR	Sandia/ NM	0	2,853	1/2Q	2,853	1/2Q	CONT.	5,706	CONT.
	C/Other	Mevatech/ AL	0	80	1/2Q	80	1/2Q	CONT.	160	CONT.
	MIPR	HAFB/ MA	0	896	1/2Q	896	1/2Q	CONT.	1,792	CONT.
	MIPR	SMDC/ AL	0	74	1/2Q	74	1/2Q	CONT.	148	CONT.
	Other	TSI/ AL	0	804	1/2Q	804	1/2Q	CONT.	1,608	CONT.
	C/CPFF	VRC/ AL	0	2,362	1/2Q	2,362	1/2Q	CONT.	4,724	CONT.
	C/CPFF	Colsa/ AL	0	336	1/2Q	336	1/2Q	CONT.	672	CONT.
	MIPR	SLAD/ AL	0	140	1/2Q	140	1/2Q	CONT.	280	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPFF	CEI/ AL	0	518	1Q	518	1Q	CONT.	1,036	CONT.
	C/CPFF	TRW/ 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.
	C/CPFF	SAIC/ Various	0	756	1/2Q	756	1/2Q	CONT.	1,512	CONT.
	MIPR	AEC/ Various	0	630	1/2Q	630	1/2Q	CONT.	1,260	CONT.
	MIPR	Sandia/ NM	0	36,065	1/2Q	28,863	1/2Q	CONT.	64,928	CONT.
	MIPR	USASMDC/ AL	0	7,051	1/2Q	7,051	1/2Q	CONT.	14,102	CONT.
	C/CPFF	SY Tech/ AL	0	1,896	1/2Q	1,896	1/2Q	CONT.	3,792	CONT.
	MIPR	SMC/ AL	0	28,891	1Q	28,891	1Q	CONT.	57,782	CONT.
	MIPR	OGA`s/ Various	0	4,340	1/2Q	4,340	1/2Q	CONT.	8,680	CONT.
	MIPR	Vandenberg AFB/ CA	0	2,765	1/2Q	2,765	1/2Q	CONT.	5,530	CONT.
TTEC	C/CPFF	SY Tech/ AL	0	3,121	1/2Q	2,812	1/2Q	CONT.	5,933	CONT.
	MIPR	SED/ AL	0	671	1/2Q	671	1/2Q	CONT.	1,342	CONT.
TTEC	MIPR	STRICOM/ FL	0	488	1/2Q	488	1/2Q	CONT.	976	CONT.
	Various	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	

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

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
X Band Radar Technology Development										
	FFRDC	MIT Lincoln Lab/ MA	0	1,265	1/2Q	1,265	1/2Q	CONT.	2,530	CONT.
Upgraded Early Warning Radar (UEWR) Development										
	FFRDC	MIT Lincoln Lab/ MA	0	300	2Q	301	2Q	CONT.	601	CONT.
	FFRDC	Mitre/ Various	0	9,547	1/3Q	8,423	1/3Q	CONT.	17,970	CONT.
	C/CPFF	SEMCOM/ Various	0	3,757	1/3Q	4,140	1/3Q	CONT.	7,897	CONT.
	C/CPFF	Tecolote/ Various	0	272	1/3Q	280	1/3Q	CONT.	552	CONT.
	C/CPFF	ESC/Hanscom/ Various	0	570	1/4Q	580	1/4Q	CONT.	1,150	CONT.
GMD Fire Control & Communications										
	MIPR	NSWC/ MD	0	3,619	2Q	2,760	2Q	CONT.	6,379	CONT.
	C/CPAF	TRW/ MA	0	3,916	2Q	3,916	2Q	CONT.	7,832	CONT.
	FFRDC	Mitre/IDA/ Various	0	1,147	2Q	1,147	2Q	CONT.	2,294	CONT.
	C/CPAF	Sparta/ AL	0	3,053	2Q	3,053	2Q	CONT.	6,106	CONT.

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	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
	C/CPAF	NRC/ Various	0	688	2Q	688	2Q	CONT.	1,376	CONT.
	C/BPA	QRI/ Various	0	874	2Q	874	2Q	CONT.	1,748	CONT.
	C/CPAF	CSC/ AL	0	1,767	2Q	1,767	2Q	CONT.	3,534	CONT.
	C/CPAF	Vanguard Research/ AL	0	84	2Q	84	2Q	CONT.	168	CONT.
	MIPR	USAF ESC/ MA	0	69	2Q	69	2Q	CONT.	138	CONT.
	MIPR	ARL/ CA	0	247	2Q	247	2Q	CONT.	494	CONT.
	C/CPAF	Mevatech/ 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

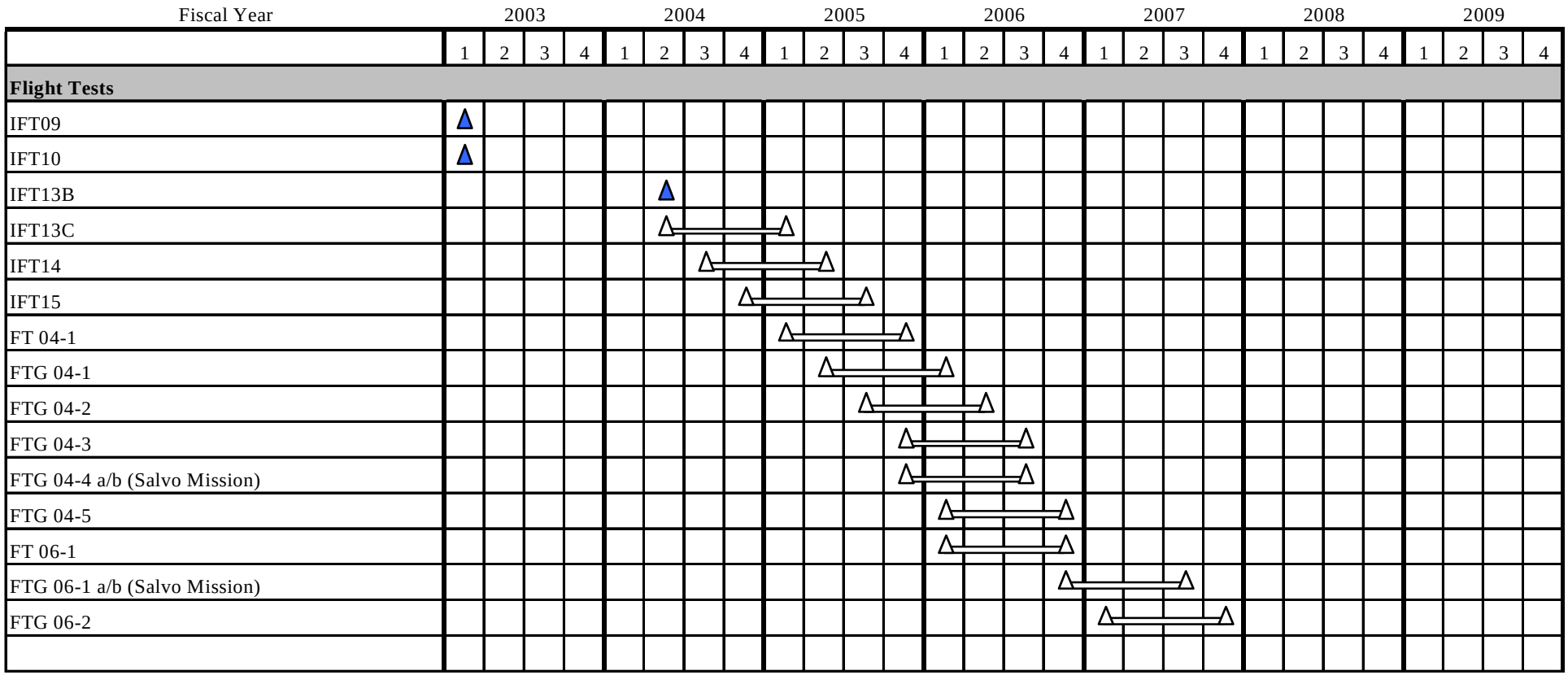
The Prime Contractor has the responsibility to balance resources across the GMD program and allocate funding according to program progress. This may require the Prime Contractor to reallocate funding, which would change the estimates provided in this R-3 document.

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

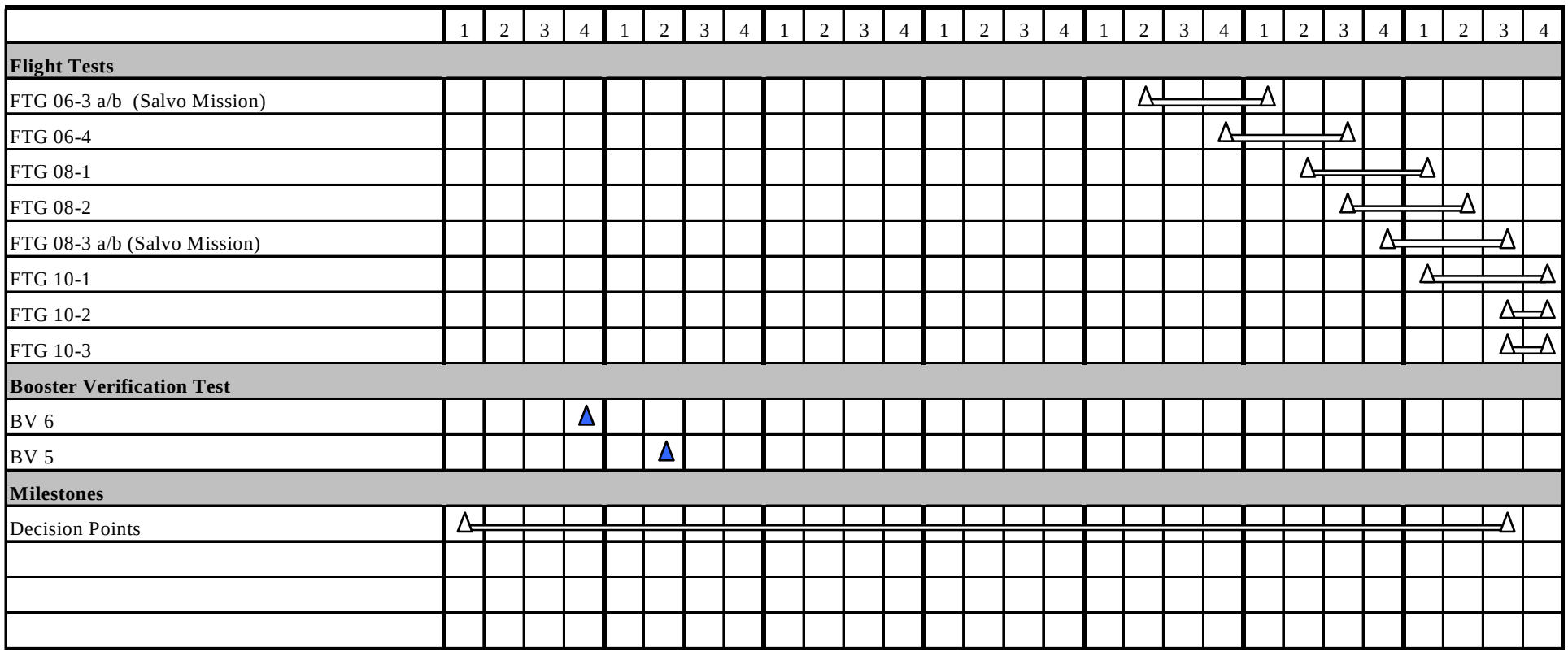
Remarks

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.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse 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	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					
Milestones							
Decision Points	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	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.

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 Missile Defense Midcourse 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

	FY 2003	FY 2004	FY 2005	FY 2006	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
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

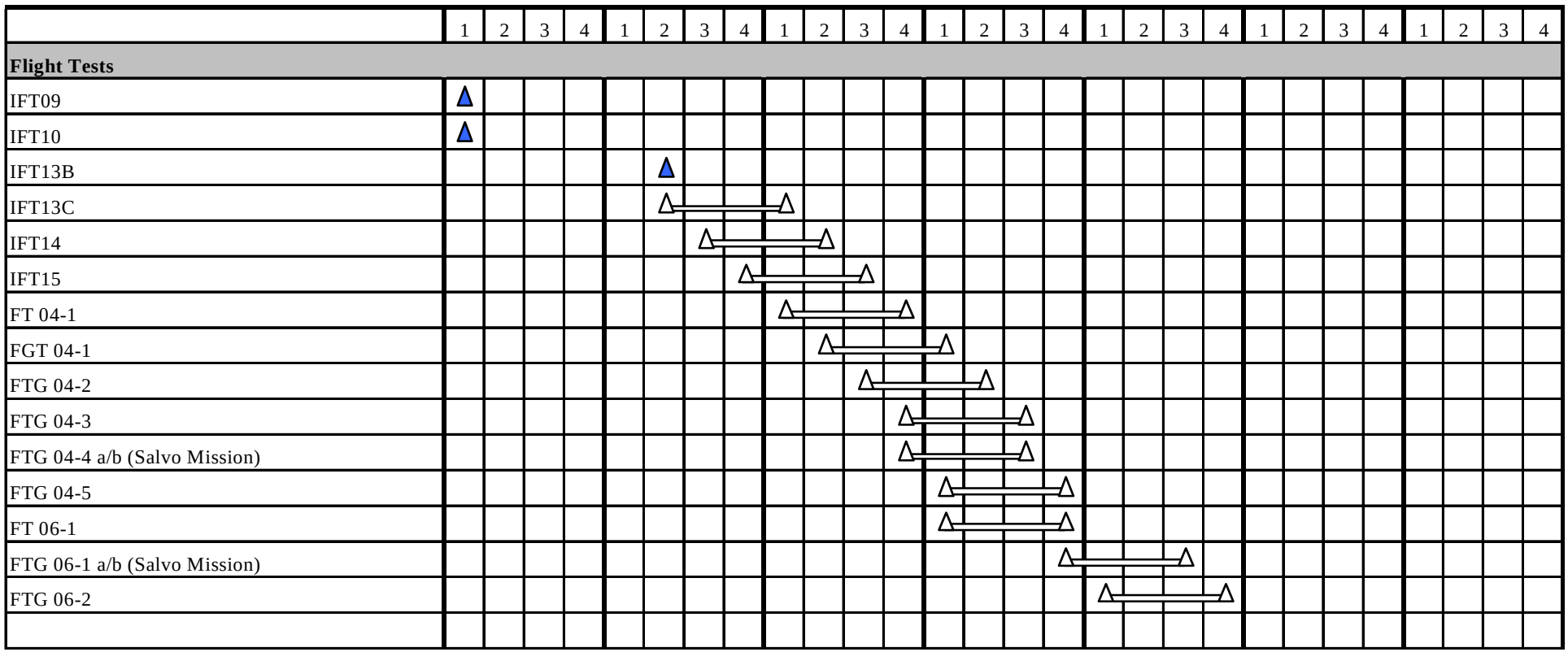
MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

	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	1,118,599	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

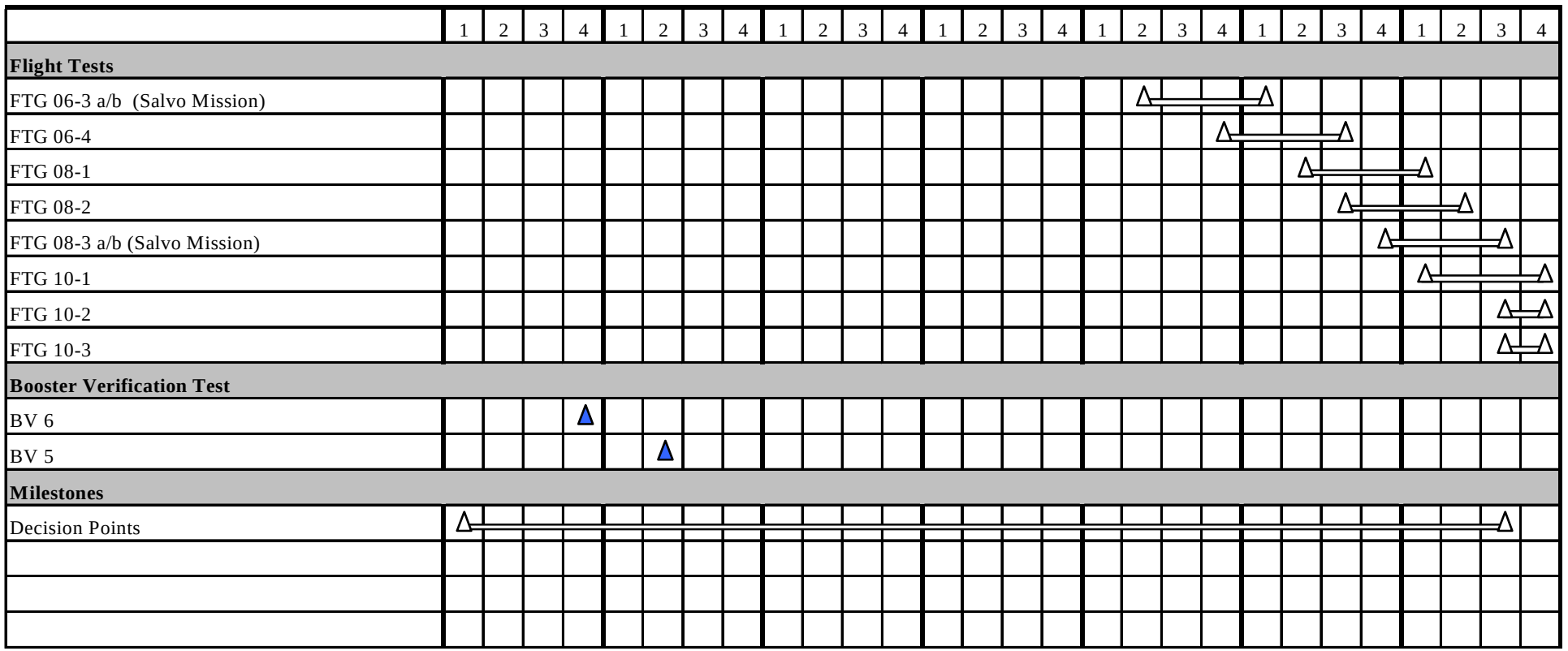
D. Acquisition Strategy

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.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse 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	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					
Milestones							
Decision Points	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3020 Sea-Based Midcourse Defense (SMD)	386,200	0	0	0	0	0	0
RDT&E Articles Qty	8	0	0	0	0	0	0

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.

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 Missile 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)

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 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).

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 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

	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

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 Missile Defense Midcourse Defense Segment

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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	12,958	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

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.

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

I. Product Development Cost ($ in Thousands)

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
Aegis BMD Block 04										
	SS/CPFF	JHU/APL/ MD	13,085					CONT.	13,085	TBD
	SS/CPAF	Lockheed Martin/ NJ	93,260					CONT.	93,260	TBD
	SS/FFRDC	MIT/LL/ MA	5,997					CONT.	5,997	TBD
	MIPR	NSWC/CL/ CA	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
	SS/CPAF	Raytheon/ AZ	129,171					CONT.	129,171	TBD
	C/CPFF	PSC/ VA	1,700					CONT.	1,700	TBD
	SS/CPAF	United Defense/ MN	1,382					CONT.	1,382	TBD
	Various	Various	0					CONT.		TBD
	SS/CPFF	Mitre/ NJ	0					CONT.		TBD
	C/CPFF	Northrup Grumman/ VA	0					CONT.		TBD
	MIPR	NSWC/CD/ MD	0					CONT.		TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	MIPR	NSWC/IH/ MD	0					CONT.		TBD
	MIPR	WSMR/ NM	0					CONT.		TBD
Aegis BMD Block 06										
	C/CPAF	United Defense/ MN	585					CONT.	585	CONT.
	MIPR	NSWC/DD/ VA	208					CONT.	208	CONT.
	SS/CPFF	JHU/APL/ MD	430					CONT.	430	CONT.
	SS/CPAF	Lockheed Martin/ NJ	3,050					CONT.	3,050	CONT.
	SS/CPAF	Raytheon/ 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 Thousands)

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
Aegis BMD Block 04										
	MIPR	NSWC/DD/ VA	10,568					CONT.	10,568	TBD
	SS/CPFF	JHU/APL/ MD	8,348					CONT.	8,348	TBD
	C/CPAF	COMP/ VA	2,417					CONT.	2,417	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPAF	CREE/ VA	2,400					CONT.	2,400	TBD
	SS/CPFF	BMPCO/ MD	1,170					CONT.	1,170	TBD
	C/CPFF	MEI/ VA	1,250					CONT.	1,250	TBD
	FFRDC	MIT/LL/ MA	7,040					CONT.	7,040	TBD
	MIPR	NSWC/CD/ VA	2,919					CONT.	2,919	TBD
	SS/CPFF	SEG/ VA	3,740					CONT.	3,740	TBD
	MIPR	NSWC/PHD/ CA	2,932					CONT.	2,932	TBD
	SS/CPAF	Lockheed Martin/ NJ	0					CONT.		TBD
	Various	Various	0					CONT.		TBD
Aegis BMD Block 06										
	MIPR	NSWC/DD/ VA	622					CONT.	622	CONT.
	SS/CPFF	JHU/APL/ MD	1,289					CONT.	1,289	CONT.
	SS/CPAF	Raytheon/ AZ	0					CONT.		TBD
	SS/CPAF	Lockheed Martin/ NJ	0					CONT.		TBD
	Various	Various	0					CONT.		TBD
Subtotal Support Costs			44,695	0		0		0	44695	

Remarks

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

III. Test and Evaluation Cost ($ in Thousands)

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
Aegis BMD Block 04										
	C/CPFF	HTS/ HI	1,175					CONT.	1,175	TBD
	SS/CPFF	JHU/APL/ MD	2,870					CONT.	2,870	TBD
	MIPR	NAWC/PM/ CA	1,987					CONT.	1,987	TBD
	MIPR	NSWC/DD/ VA	5,118					CONT.	5,118	TBD
	MIPR	NSWC/PHD/ CA	3,677					CONT.	3,677	TBD
	MIPR	SMDC/ AL	9,245					CONT.	9,245	TBD
	MIPR	CINCPACFLT/ HI	1,024					CONT.	1,024	TBD
	MIPR	PMRF/ HI	2,869					CONT.	2,869	TBD
	Various	Various	0					CONT.		TBD
Subtotal Test and Evaluation			27,965	0		0		0	27965	

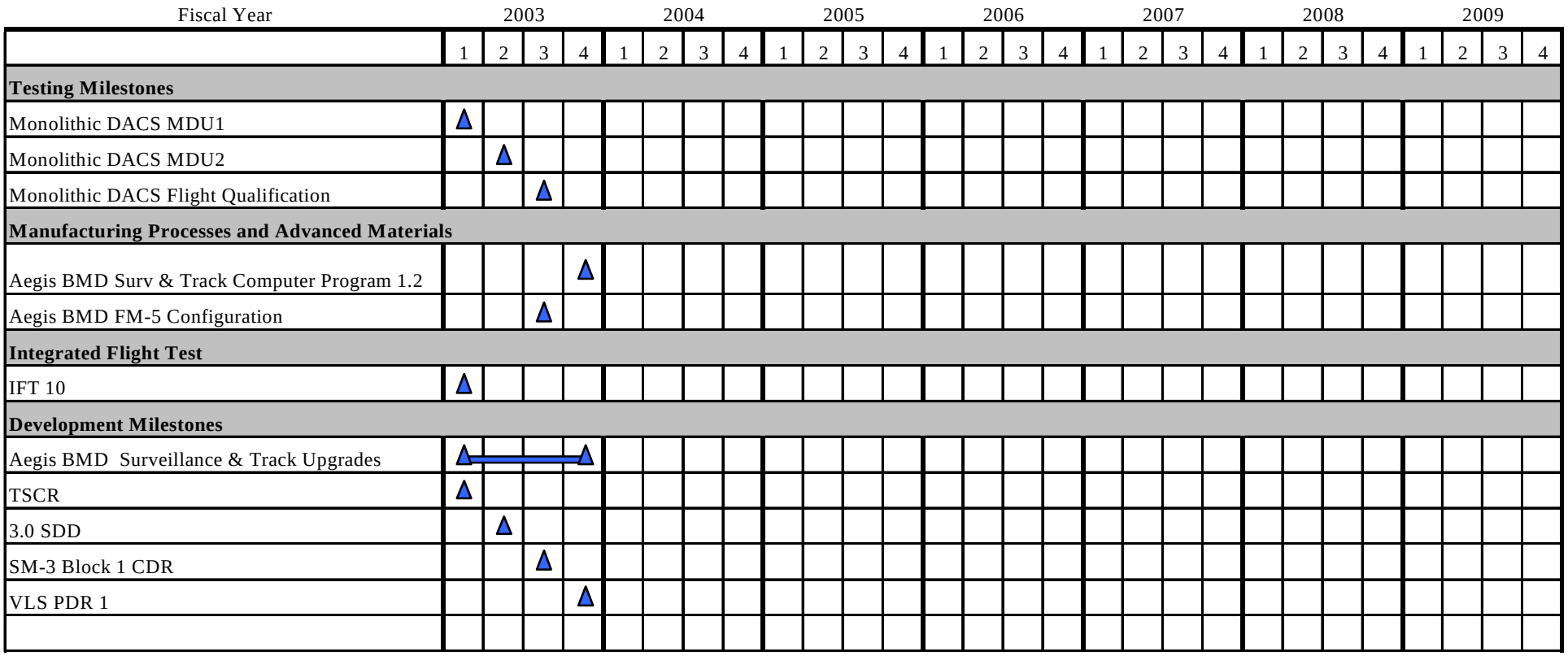
Remarks

IV. Management Services Cost ($ in Thousands)

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
Aegis BMD Block 04										
	C/CPFF	PCI/ VA	1,600					CONT.	1,600	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					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
	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
	Various	Various	0					CONT.		TBD
Subtotal Management Services			21,438	0		0		0	21438	
Remarks										
Project Total Cost			386,200	0		0			386,200	
Remarks										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment

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
Flight Tests																												
FM -4	▲																											
FM-5			▲																									
Fielding Deliveries/Ships																												
Test DDGs (Kits Only)				▲																								
LRS&T IPR				▲																								

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Monolithic DACS MDU1	1Q						
Monolithic DACS MDU2	2Q						
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						

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

COST ($ in Thousands)	FY 2003	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.

MDA Exhibit R-2A RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 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.

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

MDA Exhibit R-2A RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **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.

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

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.

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

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

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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

MDA Exhibit R-2A RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	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 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 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 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 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.

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

I. Product Development Cost ($ in Thousands)

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
Weapon System Engineering										
AWS	SS/CPIF	Lockheed Martin/ NJ	0	133,502	2Q	197,850	2Q	CONT.	331,352	TBD
AWS	FFRDC	MIT/LL/ MA	0	5,400	2Q	5,000	2Q	CONT.	10,400	TBD
AWS	SS/CPFF	JHU/APL/ MD	0	2,300	1Q	1,900	1Q	CONT.	4,200	TBD
AWS	MIPR	NSWC/DD/ VA	0	12,444	1Q	15,419	1Q	CONT.	27,863	TBD
AWS	MIPR	MITRE/ VA	0	550	1Q	1,291	1Q	CONT.	1,841	TBD
AWS	MIPR	NSWC/PHD/ CA	0	5,000	1Q	6,600	1Q	CONT.	11,600	TBD
AWS		MDA	0	11,016	1Q	7,318	1Q	CONT.	18,334	TBD
AWS	Various	VARIOUS	0	7,150	1Q	15,180	1Q	CONT.	22,330	TBD
MISSILE	SS/CPIF	RAYTHOEN/ AZ	0	266,766	2Q	414,018	2Q	CONT.	680,784	TBD
MISSILE	SS/CPIF	JHU/APL/ MD	0	9,700	2Q	7,638	2Q	CONT.	17,338	TBD
MISSILE	FFRDC	MIT/LL/ MA	0	600	1Q	2,687	1Q	CONT.	3,287	TBD
MISSILE	MIPR	NSWC/DD/ VA	0	7,740	1Q	9,523	1Q	CONT.	17,263	TBD
MISSILE	MIPR	NSWC/PHD/ CA	0	3,147	1Q	5,507	1Q	CONT.	8,654	TBD
MISSILE	MIPR	WSMR/ NM	0	1,770	1Q	3,770	1Q	CONT.	5,540	TBD
MISSILE	MIPR	NSWC/CD/ CA	0	554	2Q	0	2Q	CONT.	554	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)							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
MISSILE	MIPR	NSWC/IH/ MD	0	1,206	2Q	1,472	2Q	CONT.	2,678	TBD
MISSILE	MIPR	NAWC/CL/ CA	0	1,066	1Q	2,240	1Q	CONT.	3,306	TBD
MISSILE		MDA/ VA	0	9,575	1Q	11,640	1Q	CONT.	21,215	TBD
MISSILE	Various	VARIOUS/ VARIOUS	0	5,573	1Q	15,081	1Q	CONT.	20,654	TBD
MISSILE	MIPR	NSWC/CD/ CA	0	2,000	1Q				2,000	
MISSILE	MIPR	VA SITES/ VA	0	3,900	1Q				3,900	
SRBM Low Exo										
	SS/CPIF	Lockheed Martin/ NJ	0	2,500	2Q	3,500	2Q	CONT.	6,000	TBD
	SS/CPIF	Raytheon/ AZ	0	22,734	2Q	32,100	2Q	CONT.	54,834	TBD
Subtotal Product Development			0	516,193		759,734		0	1275927	

Remarks

II. Support Costs Cost ($ in Thousands)

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
Weapon System Engineering										
	SS/CPFF	JHU/APL/ MD	0	7,250	2Q	7,250	2Q	CONT.	14,500	TBD
	SS/CPAF	Lockheed Martin/ NJ	0		2Q		2Q	CONT.		TBD
	FFRDC	MIT/LL/ MA	0	600	1Q	1,450	1Q	CONT.	2,050	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis									Date: February 2004	
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					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
	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

III. Test and Evaluation Cost ($ in Thousands)

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
Test & Evaluation										
	MIPR	PMRF/ HI	0	7,030	1Q	7,300	1Q	CONT.	14,330	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	C/CPFF	HTS/ CA	0	2,695	2Q	2,805	2Q	CONT.	5,500	TBD
	SS/CPAF	Xontech/ CA	0	1,015	2Q	1,054	2Q	CONT.	2,069	TBD
	MIPR	NSWC/PHD/ CA	0	5,053	1Q	8,163	1Q	CONT.	13,216	TBD
	MIPR	NAWC/PM/ CA	0	2,295	1Q	4,500	1Q	CONT.	6,795	TBD
	MIPR	NSWC/Corona/ CA	0	889	1Q	1,602	1Q	CONT.	2,491	TBD
	MIPR	NSWC/DD/ VA	0	6,608	1Q	13,122	1Q	CONT.	19,730	TBD
	MIPR	CINPACFLT/ HI	0	0	1Q	605	1Q	CONT.	605	TBD
	SS/CPFF	JHU/APL/ MD	0	7,100	2Q	5,850	2Q	CONT.	12,950	TBD
	MIPR	SMDC/ AL	0	6,900	1Q	52,000	1Q	CONT.	58,900	TBD
	MIPR	SPAWAR/ CA	0	2,022	1Q	1,763	1Q	CONT.	3,785	TBD
	MIPR	DOI/ DC	0	0	1Q	1,017	1Q	CONT.	1,017	TBD
	MIPR	AIRPAC/ HI	0	868	1Q	903	1Q	CONT.	1,771	TBD
		MDA	0	3,270	1Q	4,721	1Q	CONT.	7,991	TBD
	Various	VARIOUS/ VARIOUS	0	2,578	1Q	958	1Q	CONT.	3,536	TBD
	MIPR	WSMR/ CA	0	2,521	1Q	0	1Q		2,521	
Subtotal Test and Evaluation			0	50,844		106,363		0	157207	

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

Remarks

IV. Management Services Cost ($ in Thousands)

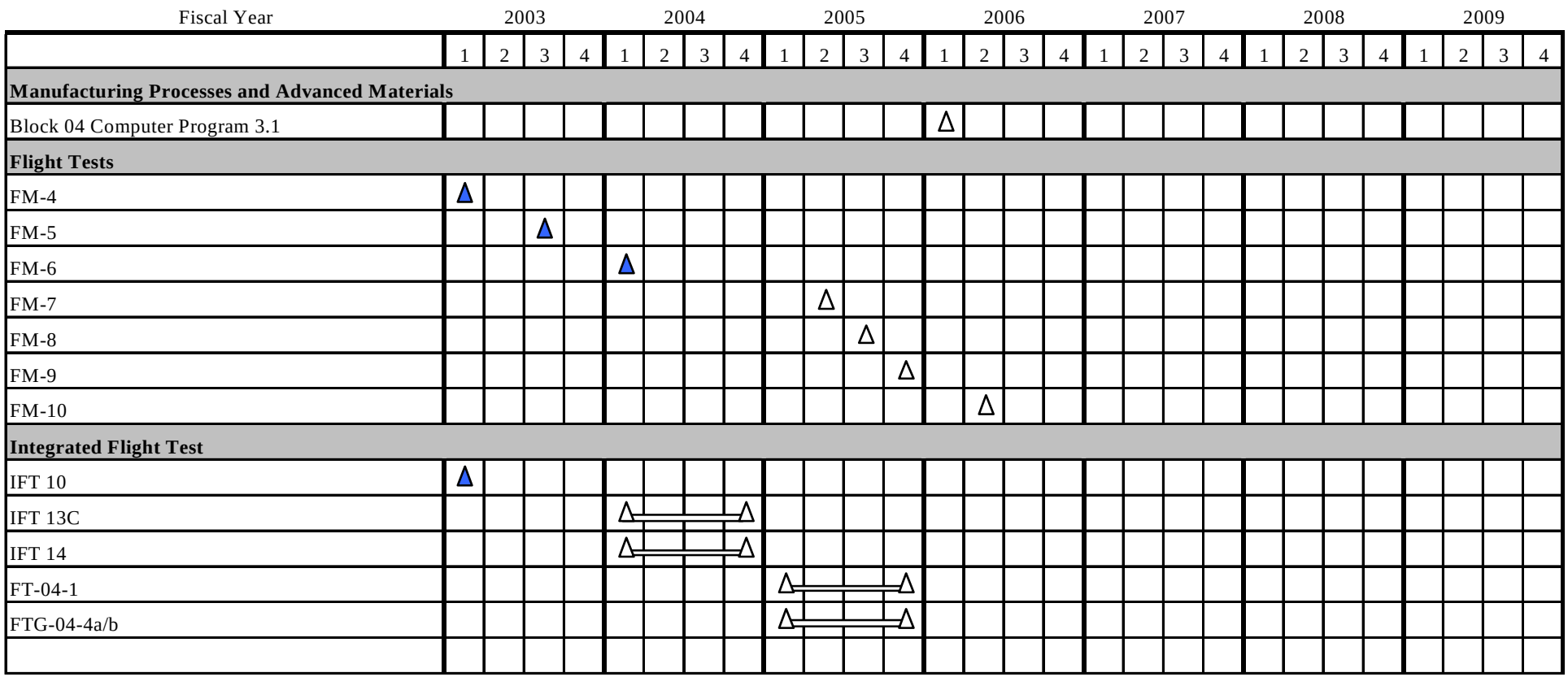
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Weapon System Engineering										
		NAVSEA/ DC	0	13,000	1Q	13,463	1Q	CONT.	26,463	TBD
	SS/CPFF	JHU/APl/ MD	0	2,300	2Q	2,300	2Q	CONT.	4,600	TBD
	MIPR	NSWC/DD/ VA	0	1,700	1Q	1,700	1Q	CONT.	3,400	TBD
	C/CPFF	Anteon/ VA	0	23,215	1Q	24,862	1Q	CONT.	48,077	TBD
	SS/CPFF	Paradigm/ VA	0	5,386	1Q	5,747	1Q	CONT.	11,133	TBD
	SS/CPAF	Lockheed Martin/ NJ	0	1,200	1Q	1,200	1Q	CONT.	2,400	TBD
	SS/CPAF	Raytheon/ AZ	0	1,400	2Q	1,400	2Q	CONT.	2,800	TBD
		MDA	0	3,379	1Q	7,481	1Q	CONT.	10,860	TBD
	Various	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

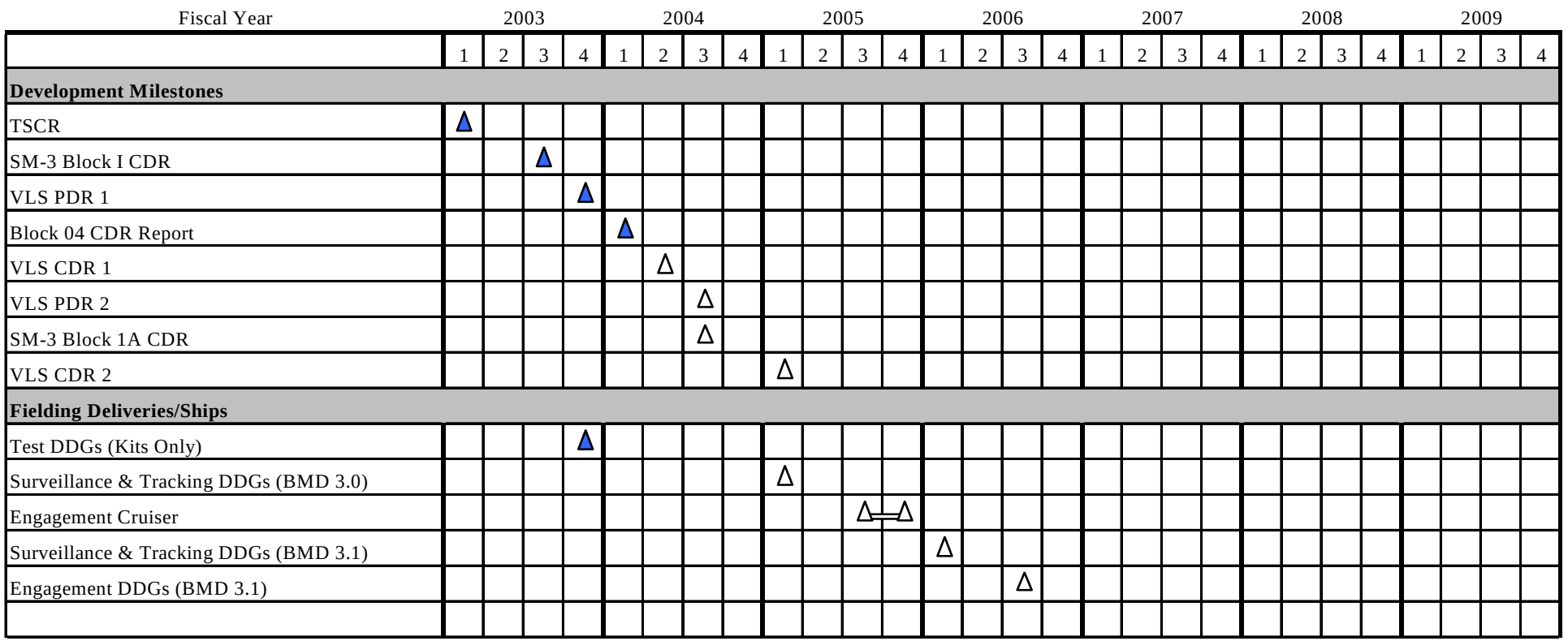
MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

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
Testing Milestones																												
Monolithic DACS MDU1	▲																											
Monolithic DACS MDU2		▲																										
Monolithic DACS Flight Qualification			▲																									
Third Stage Rocket Motor						△																						
HERO Test						△																						
Pacific Explorer III								△																				
At-Sea Demo 3.0 (Concurrent with FM-7)										△																		
At-Sea Demo 3.1													△															
Manufacturing Processes and Advanced Materials																												
Aegis BMD FM 5 configuration			▲																									
Surveillance & Track Computer Program 1.N				▲																								
Aegis BMD FM 6 configuration					▲																							
04 CP 3.0E								△																				
Aegis BMD FM 7 configuration										△																		
Block 04 Computer Program 3.0										△																		

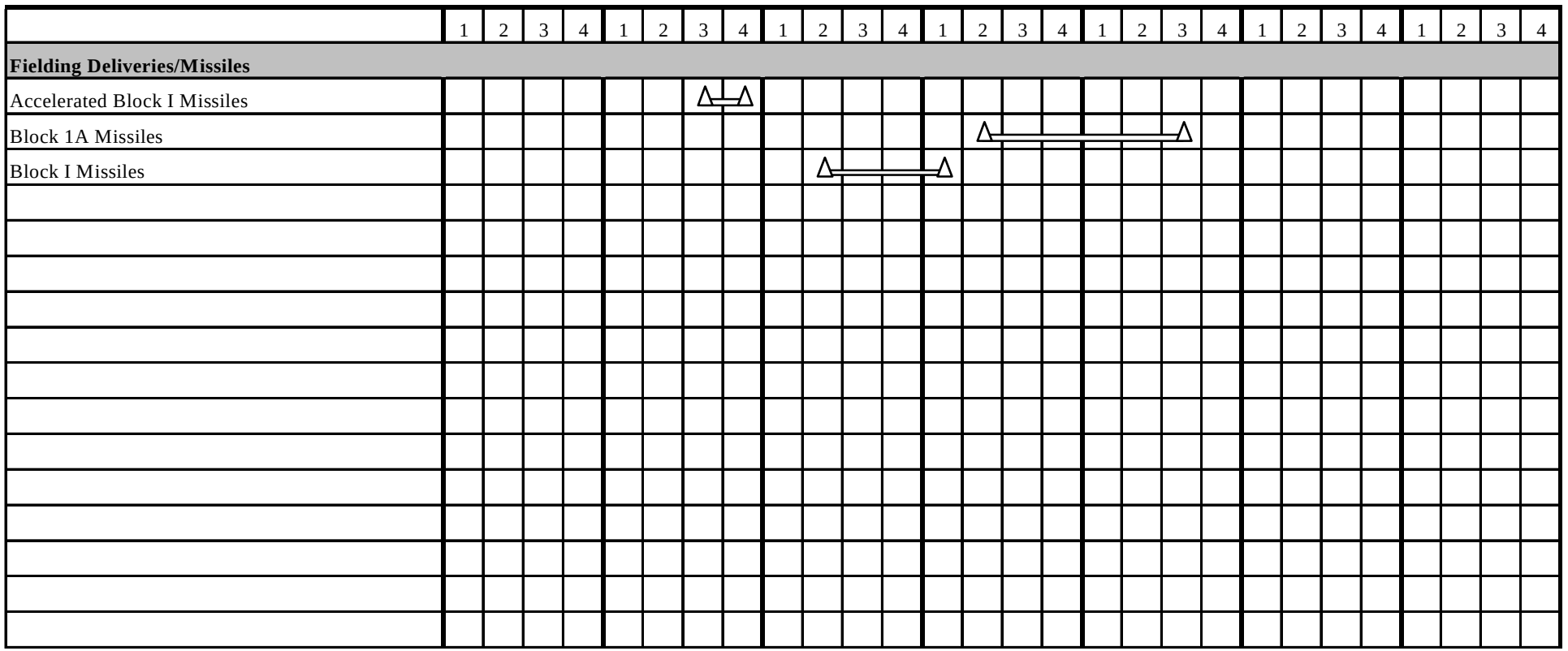
MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	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)			2Q				
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			2Q				
Block 04 Computer Program 3.0			2Q				
Block 04 Computer Program 3.1				1Q			
Flight Tests							
FM-4	1Q						
FM-5	3Q						
FM-6		1Q					
FM-7			2Q				
FM-8			3Q				
FM-9			4Q				
FM-10				2Q			
Integrated Flight Test							
IFT 10	1Q						
IFT 13C		1Q-4Q					
IFT 14		1Q-4Q					
FT-04-1			1Q-4Q				

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse 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			

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 Missile Defense Midcourse Defense Segment

COST ($ in Thousands)	FY 2003	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)

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 Missile Defense Midcourse Defense Segment

B. Accomplishments/Planned Program

	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

	FY 2003	FY 2004	FY 2005	FY 2006	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 0603175C Ballistic Missile Defense Technology	151,217	225,268	204,320	199,468	246,291	286,286	305,365	Continuing	Continuing

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 Missile Defense Midcourse Defense Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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.

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

I. Product Development Cost ($ in Thousands)

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
Weapons System Engineering										
AWS	SS/CPAF	Lockheed Martin/ NJ	0	11,500	1Q	73,214	1Q	CONT.	84,714	CONT.
AWS	FFRDC	MIT/LL/ MA	0		1Q	3,684	1Q		3,684	
AWS	CPFF	JHU/APL/ MD	0		1Q	1,200	1Q		1,200	
AWS	MIPR	NSWC/DD/ VA	0		1Q	1,100	1Q		1,100	
Subtotal Product Development			0	11,500		79,198		0	90698	

Remarks

II. Support Costs Cost ($ in Thousands)

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
Weapons System Engineering										
	SS/CPFF	JHU/APL/ MD	0	1,100	1Q	3,770	1Q	CONT.	4,870	TBD
	SS/CPAF	Lockheed Martin/ NJ	0	450	2Q	1,326	2Q	CONT.	1,776	TBD
	SS/CPAF	MIT/LL/ MA	0	2,800	1Q	5,479	1Q	CONT.	8,279	TBD
	SS/FPI	NSWC/DD/ VA	0	3,666	1Q	3,966	1Q	CONT.	7,632	TBD
	SS/MIPR	NSWC/Corona/ CA	0	200	1Q	278	1Q	CONT.	478	TBD

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	SS/MIPR	NSWC/PHD/ CA	0	250	1Q	463	1Q	CONT.	713	TBD
	SS/CPAF	RAYTHEON/ AZ	0	450	1Q	8,595	2Q	CONT.	9,045	TBD
	SS/CPFF	SEG/ VA	0	925	2Q	1,084	2Q	CONT.	2,009	TBD
	SS/CPFF	TSC/ VA	0	0	1Q			CONT.		TBD
	SS/CPFF	BMPCOE/ MD	0			186	1Q	CONT.	186	
	Various	VARIOUS/ US	0	309	1Q	316	1Q		625	
	SS/CPFF	MITRE/ VA	0			204	1Q		204	
Subtotal Support Costs			0	10,150		25,667		0	35817	

Remarks

III. Test and Evaluation Cost ($ in Thousands)

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
Subtotal Test and Evaluation										

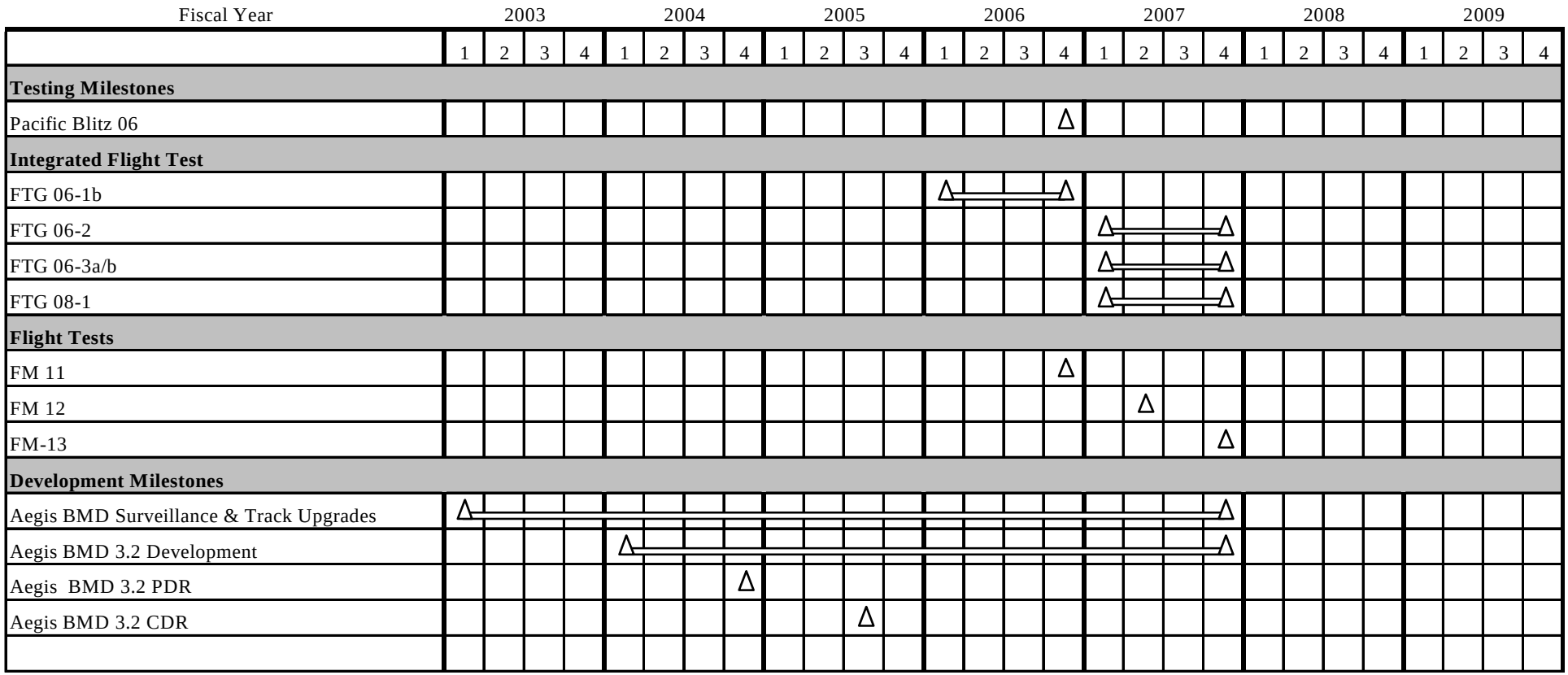
Remarks

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

IV. Management Services Cost ($ in Thousands)

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
Weapons System Engineering										
		NAVSEA/ DC	0	250	1Q	0	1Q	CONT.	250	CONT.
	SS/CPFF	JHU/APL/ MD	0	100	1Q	100	1Q	CONT.	200	CONT.
	MIPR	NSWC/DD/ VA	0	50	1Q	50	1Q	CONT.	100	CONT.
	C/CPFF	Anteon/ VA	0	1,085	2Q	482	2Q	CONT.	1,567	CONT.
	SS/CPFF	Paradigm/ VA	0	50	1Q	0	1Q	CONT.	50	CONT.
	SS/CPAF	Lockheed Martin/ NJ	0	50	2Q	50	2Q	CONT.	100	CONT.
	SS/CPAF	Raytheon/ 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										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

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
Development Milestones																												
Aegis BMD 3.2 Object Classification Demo													Δ															
Aegis BMD CSEDS Testing																	Δ											
Aegis BMD 3.2 Delivery																				Δ								

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse 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	1Q-4Q	1Q-4Q	1Q-4Q		
Aegis BMD 3.2 Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Aegis BMD 3.2 PDR		4Q					
Aegis BMD 3.2 CDR			3Q				
Aegis BMD 3.2 Object Classification Demo				1Q			
Aegis BMD CSEDS Testing					1Q		
Aegis BMD 3.2 Delivery					4Q		

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 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)			

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 Missile Defense Midcourse Defense Segment

C. Other Program Funding Summary

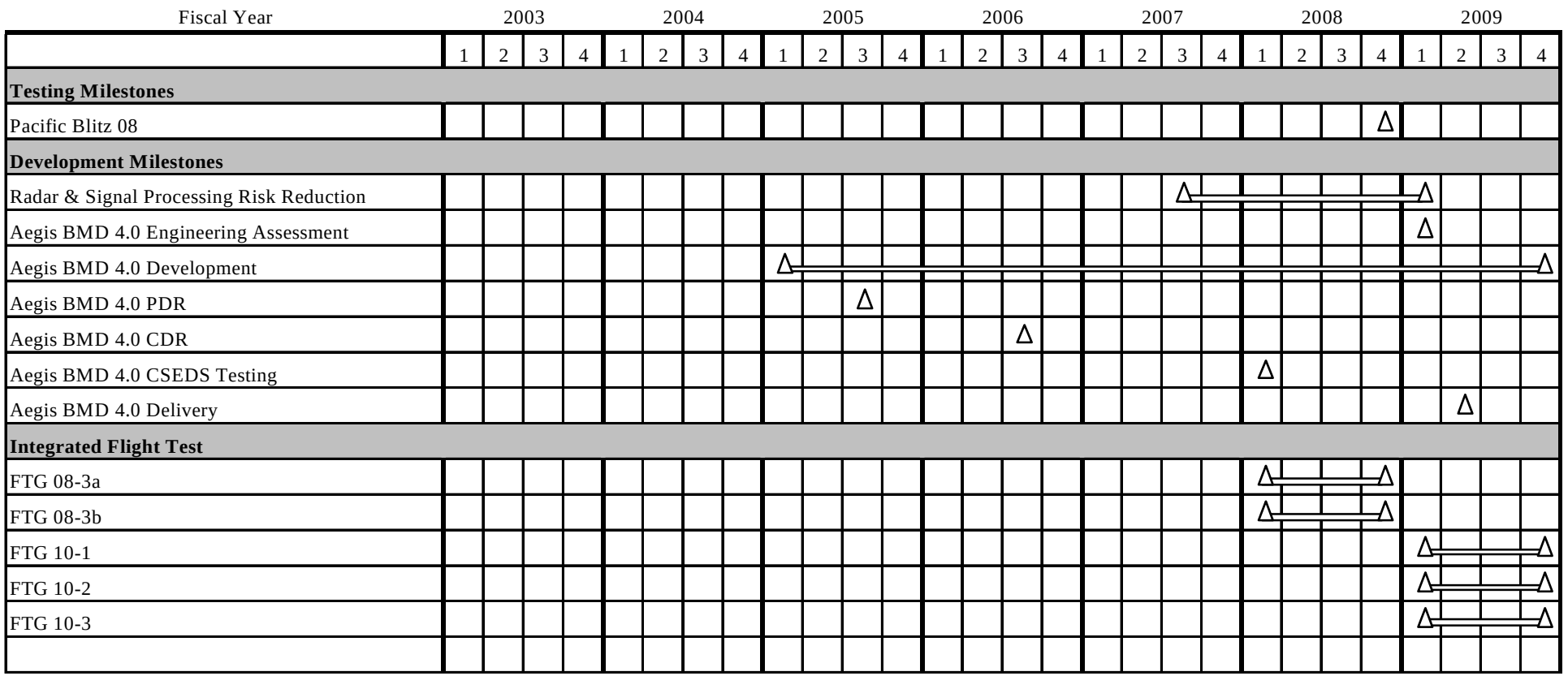
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0604861C Theater High-Altitude Area Defense System - TMD - EMD	887,616	0	0	0	0	0	0	Continuing	Continuing
PE 0604865C Patriot PAC-3 Theater Missile Defense Acquisition - EMD	138,922	0	0	0	0	0	0	Continuing	Continuing
PE 0605502C Small Business Innovative Research - MDA	138,791	0	0	0	0	0	0	Continuing	Continuing
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

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 Missile Defense Midcourse Defense Segment**

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.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment



MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

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
Flight Tests																												
FM 14																						Δ						
FM 15																							Δ					
FM 16																										Δ		
FM 17																											Δ	

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Pacific Blitz 08						4Q	
Development Milestones							
Radar & Signal Processing Risk Reduction					3Q-4Q	1Q-4Q	1Q
Aegis BMD 4.0 Engineering Assessment							1Q
Aegis BMD 4.0 Development			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Aegis BMD 4.0 PDR			3Q				
Aegis BMD 4.0 CDR				3Q			
Aegis BMD 4.0 CSEDS Testing						1Q	
Aegis BMD 4.0 Delivery							2Q
Integrated Flight Test							
FTG 08-3a						1Q-4Q	
FTG 08-3b						1Q-4Q	
FTG 10-1							1Q-4Q
FTG 10-2							1Q-4Q
FTG 10-3							1Q-4Q
Flight Tests							
FM 14						2Q	
FM 15						3Q	
FM 16							2Q
FM 17							3Q

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	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

	FY 2003	FY 2004	FY 2005
Funding in this Project is not programmed until FY07.			
RDT&E Articles (Quantity)			

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 Missile Defense Midcourse Defense Segment

C. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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 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

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 Missile Defense Midcourse Defense Segment**

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.

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

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
Development Milestones																												
Element Capability Spec																				Δ								
Block 2010 PDR																							Δ					
Block 2010 CDR																											Δ	

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **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							
Element Capability Spec					4Q		
Block 2010 PDR						3Q	
Block 2010 CDR							3Q

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	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 QWIP 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 QWIP and MCT sensors on WASP.

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 Missile 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

	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
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
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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

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 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	1,118,599	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

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.

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

I. Product Development Cost ($ in Thousands)

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
Japan Cooperative Research Project										
JCR	SS/CPAF	Raytheon/ AZ	0	31,272	2Q	43,597	2Q	CONT.	74,869	TBD
JCR	SS/CPAF	Lockheed Martin/ NJ	0	7,200	1Q	8,955	1Q	CONT.	16,155	TBD
Subtotal Product Development			0	38,472		52,552		0	91024	

Remarks

II. Support Costs Cost ($ in Thousands)

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
Japan Cooperative Research Project										
	SS/CPFF	NSWC/DD/ VA	0	3,909	1Q	4,897	1Q	CONT.	8,806	TBD
	SS/CPFF	NSWC/PHD/ CA	0	722	1Q	1,367	1Q	CONT.	2,089	TBD
	SS/CPFF	JHU/APL/ MD	0	3,354	2Q	4,591	2Q	CONT.	7,945	TBD
	Various	Various/ Various	0	805	1Q	1,477	1Q	CONT.	2,282	TBD
	SS/MIPR	NAWC/CL/ CA	0	210	1Q	260			470	
	SS/MIPR	ANTEON/ VA	0	1,953	1Q	2,136			4,089	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
	SS/CPFF	PARADIGM/ VA	0	364	1Q	403			767	
		MDA/ VA	0	2,624	2Q	3,837			6,461	
	SS	NAVSEA/ DC	0	969	1Q	937			1,906	
Subtotal Support Costs			0	14,910		19,905		0	34815	

Remarks

III. Test and Evaluation Cost ($ in Thousands)

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
Subtotal Test and Evaluation										

Remarks

IV. Management Services Cost ($ in Thousands)

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
Subtotal Management Services										

Remarks

Project Total Cost			0	53,382		72,457			125,839	

Remarks

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603882C Ballistic Missile Defense Midcourse Defense Segment

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
Development Milestones																												
Ship System PDR			▲																									
Nosecone CDR			▲																									
Ship System CDR						△																						
Japan Cooperative Research Project																												
JCTV-1												△																
JFM-1														△														

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **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			4Q				
JFM-1				2Q			

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	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.

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 Missile 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.

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 Missile Defense Midcourse 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

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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

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 Missile Defense Midcourse Defense Segment

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total 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.

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

I. Product Development Cost ($ in Thousands)

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
Risk Reduction										
Midcourse Risk Reduction	MIPR	NSWC/DD/ VA	2,625						2,625	
Midcourse Risk Reduction	SS/CPAF	JHU/APL/ MD	7,437						7,437	
Midcourse Risk Reduction	SS/CPAF	LM/ NJ	10,655						10,655	
Midcourse Risk Reduction	SS/CPAF	Raytheon/ AZ	42,743						42,743	
Counter/Countermeasures										
Counter/Countermeasures	SS/CPAF	JHU/APL/ MD	1,000						1,000	
Counter/Countermeasures	SS/CPAF	LM/ NJ	3,000						3,000	
Counter/Countermeasures	SS/CPAF	Raytheon/ AZ	9,688						9,688	
Subtotal Product Development			77,148	0		0		0	77148	

Remarks

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.

II. Support Costs Cost ($ in Thousands)

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
Risk Reduction										
CEKV	Various		3,298						3,298	
Midcourse Risk Reduction	MIPR	NSWC/IH/ MD	700						700	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
BMDS Interceptors	MIPR	NAWC/CL/ CA	400						400	
Midcourse Risk Reduction	MIPR	NAWC/PM/ CA	150						150	
Midcourse Risk Reduction	SS/CPFF	JHU/APL/ MD	1,050						1,050	
Midcourse Risk Reduction	C/CPAF	Raytheon/ AZ	200						200	
Midcourse Risk Reduction	C/CPFF	SEG/ VA	1,000						1,000	
Midcourse Risk Reduction	MIPR	NSWC/DD/ VA	914						914	
Midcourse Risk Reduction	SS/FFRDC	MIT/LL/ MA	850						850	
Counter/Countermeasures										
Counter/Countermeasures	SS/CPAF	Boeing/ AL	7,595						7,595	
Counter/Countermeasures	SS/FFRDC	MIT Lincoln Labs/ MA	4,307						4,307	
Counter/Countermeasures	Various	Various	5,793						5,793	
Counter/Countermeasures	MIPR	NSWC/DD/ VA	914						914	
Counter/Countermeasures	MIPR	NSWC/IH/ MD	700						700	
Counter/Countermeasures	C/CPAF	LM/ NJ	800						800	
Counter/Countermeasures	C/CPFF	BAE/ VA	500						500	
Counter/Countermeasures	SS/CPFF	JHU/APL/ MD	1,025						1,025	

MDA Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	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
Counter/Countermeasures	C/CPAF	Raytheon/ AZ	200						200	
Counter/Countermeasures	C/CPFF	SEG/ VA	1,000						1,000	
Subtotal Support Costs			31,396	0		0		0	31396	

Remarks

III. Test and Evaluation Cost ($ in Thousands)

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
Risk Reduction										
Risk Reduction	MIPR	CINCPACFLT/ HI	500						500	
Risk Reduction	MIPR	NSWC/ Corona, CA	155						155	
Risk Reduction	MIPR	NSW/DD/ VA	568						568	
Risk Reduction	MIPR	NSWC/PHD/ CA	795						795	
Risk Reduction	SS/CPFF	JHU/APL/ MD	200						200	
Risk Reduction		Various	282						282	
Subtotal Test and Evaluation			2,500	0		0		0	2500	

Remarks

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

IV. Management Services Cost ($ in Thousands)

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
Subtotal Management Services										
Remarks										
Project Total Cost			111,044	0		0			111,044	
Remarks										

MDA Exhibit R-4 Schedule Profile	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

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
Testing Milestones																												
AEGIS BMD Monolithic DACS MDU 1	▲																											
AEGIS BMD Monolithic DACS MDU 2		▲																										
AEGIS BMD Monolithic DACS Flight Qualification			▲																									
Aegis BMD Monolithic DACS Flight Qualification			▲																									
Manufacturing Processes and Advanced Materials																												
Blue Team CCM plans against Red and Black Team CM			▲																									
Red Team Countermeasure Conceptual Designs	▲																											
Blue Team CCM plans against Red and Black Team CM				▲																								
Red Team Countermeasure Conceptual Designs				▲																								
Black Team Countermeasure Conceptual Designs	▲		▲																									
Development Milestones																												
Aegis BMD VLS PDR		▲																										
Aegis BMD VLS CDR				▲																								

MDA Exhibit R-4A Schedule Detail	Date: February 2004
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603882C Ballistic Missile Defense Midcourse Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 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						
Blue Team CCM plans against Red and Black Team CM	4Q						
Red Team Countermeasure Conceptual Designs	4Q						
Black Team Countermeasure Conceptual Designs	1Q,3Q						
Development Milestones							
Aegis BMD VLS PDR	2Q						
Aegis BMD VLS CDR	4Q						

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 Missile Defense Midcourse Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
3090 Program-Wide Support	79,449	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

	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.

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 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

	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
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

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	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	1,118,599	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

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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COST ($ in Thousands)	FY 2003	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	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.

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 Missile Defense Midcourse Defense Segment**

Management Support:
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