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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	705,643	617,270	492,614	555,667	611,736	473,602	455,961
4030 Air-Based Boost	550,765	0	0	0	0	0	0
0710 Airborne Laser (ABL) Block 2004	0	603,041	474,335	0	0	0	0
0810 Airborne Laser (ABL) Block 2006	0	0	0	532,794	586,769	0	0
0910 Airborne Laser (ABL) Block 2008	0	0	0	0	0	445,103	425,274
4010 Kinetic Energy Boost	99,547	0	0	0	0	0	0
4043 Space-Based Laser	16,229	0	0	0	0	0	0
4090 Program-Wide Support	39,102	0	0	0	0	0	0
0602 Program-Wide Support	0	14,229	18,279	22,873	24,967	28,499	30,687

Note: Several projects funded in earlier years are no longer funded within this Program Element (PE). Beginning in FY 2003, funding for the Space Based Laser program (Project 4043) transitioned to support the Missile Defense Agency's (MDA's) Laser Technology Program. Reference Program Element 0603875C Advanced System (AS) for project 4043 FY 2003 accomplishments. For FY 2004-2009, funding for the Kinetic Energy Boost transitioned into the Ballistic Missile Defense System (BMDS) Interceptor Program Projects 0913 and 0013. Reference Program Element 0603886C for project 4010 FY 2003 accomplishments. ABL activities are being consolidated into blocks associated with the two-year timeframe when they occur, better reflecting the knowledge advancement being provided annually. Specifically, all efforts in FY 2004 - FY 2005 will occur in ABL Block 04 while FY 2006 - FY 2007 activities and FY 2008 - FY 2009 work will be accomplished in ABL Blocks 06 and 08, respectively.

A. Mission Description and Budget Item Justification

Our goal 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 Missile Defense Agency develops the Ballistic Missile Defense System (BMDS) using biennial capability blocks. This approach is the most efficient and effective way to get missile defense assets into the hands of the warfighters as quickly as possible while allowing for rapid insertion of emerging technology in the most affordable manner. These capability blocks will subsequently build on and be integrated with the predecessor blocks. Block capabilities are built by using complete elements and their individual components to integrate a single BMDS and provide layered defense against ballistic missiles during all flight phases, Boost, Midcourse, and Terminal, using multiple basing modes and phenomenology.

As part of the total BMDS, the Boost Defense Segment (BDS) Program Element (PE) funds the Boost-related element portions of Blocks 2004, 2006, and 2008 and other Boost-related mission area investment activities. The BMDS element in this Boost Defense Segment, Airborne Laser (ABL), provides a capability to destroy ballistic missiles in the boost phase of their trajectory, the segment from post launch through propellant burnout after which the missile enters the midcourse phase of ballistic flight. Destroying ballistic missiles in the boost phase is important to Ballistic Missile Defense (BMD) as threats can be negated long before they have an opportunity to deploy reentry vehicles, submunitions, or countermeasures, and debris from successful engagements can be precluded from affecting protected areas and assets. The flow-down of BMD System capability specifications resulting from Missile Defense National Team efforts in C2BMC and Systems Engineering & Integration will guide the integration of the Boost Defense Elements into the BMD System, the BMDS C2BMC architecture, and the BMD Test Bed.

MDA Exhibit R-2 RDT&E Budget Item Justification	Date: February 2004
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ABL will design, build and test an air-based laser system to acquire, track, and kill ballistic missiles in their boost phase. The boost phase typically includes the first 60-300 seconds of flight and concludes at altitudes between 20-450 kilometers. ABL integrates three major subsystems (Laser; Beam Control; and Battle Management; Command, Control, Communications, Computers and Intelligence (BMC4I)) into a modified commercial Boeing 747-400 aircraft. ABL also includes ABL-specific ground support equipment.

The extended development of the 1st ABL weapon system testbed will be accomplished via incrementally stepping through key knowledge points. These knowledge points are:

1) Completion of ground testing of a flight worthy, weapon class laser segment suitable for use in an ABL
2) Completion of ground testing of a flight worthy beam control fire control segment
3) Completion of flight testing of the BCFC segment
4) Completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
5) Successful demonstration of the ABL lethality against a boosting missile
6) flight testing of an expanded ABL weapon system performance envelope

Early activities in pursuing knowledge points include the flight testing of the Beam Control Fire Control (BCFC) system. The near term knowledge points enabled by this funding request represent tremendous steps forward and reason for increased confidence. This will demonstrate, in a realistic environment, important pointing, control, and tracking functions required to engage a ballistic missile during the boost phase. The ground test of the laser segment will demonstrate full scale weapon level performance in a flight worthy configuration for the first time.

While stepping through these key knowledge points, the program will also provide for continued ABL specific technology maturation for integration and testing on subsequent blocks along with infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. The Block 06 effort provides for enhancement of BMDS integration and ground support. Finally, it will produce trade studies and maintain a requirements baseline for defining an optimal 2nd ABL aircraft in order to guide infrastructure and technology improvements efforts.

A significant change to the ABL program in FY 2005 is the deferral of efforts toward development of the Iron Bird, a ground based test facility, and the purchase of the 2nd ABL aircraft. These activities will be re-initiated at a later date.

Program Operations under this project cover 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 a limited number of foreign contracts. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510.

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004 PB)	718,036	626,264	653,612
Current President's Budget (FY 2005 PB)	705,643	617,270	492,614
Total Adjustments	-12,393	-8,994	-160,998
Congressional Specific Program Adjustments	0	-2,000	0
Congressional Undistributed Adjustments	0	-6,994	0
Reprogrammings	-11,881	0	-160,998
SBIR/STTR Transfer	-512	0	0

The FY 2003 Boost Program Element budget request in the FY 2004 budget compared to the FY 2005 budget showed a reduction of $12,393,000. This resulted from a transfer of $512,000 to the Small Business Innovative Research Program; and a reprogramming of $11,881,000 based on Agency priorities.

The FY 2005 Boost Program Element budget request in the FY 2004 budget compared to the FY 2005 budget showed a reduction of $16,998,000. This reduction reflects the Missile Defense Agency's realignment of resources to support higher Agency priorities.

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
4030 Air-Based Boost	550,765	0	0	0	0	0	0
RDT&E Articles Qty	14	0	0	0	0	0	0

Note: Project 4030 has been superceded by ABL Block 04, ABL Block 06, and ABL Block 08 starting in FY 2004.

A. Mission Description and Budget Item Justification

The Airborne Laser (ABL) is an element of the Ballistic Missile Defense System (BMDS). ABL will design, build and test an air-based laser system to acquire, track, and kill ballistic missiles in their boost phase. ABL integrates three major subsystems (Laser, Beam Control, and Battle Management, Command, Control, Communications, Computers and Intelligence (BMC4I)) into a modified commercial Boeing 747-400 aircraft. ABL also includes ABL-specific ground support equipment.

Starting in FY 2004, the Missile Defense Agency (MDA) has adopted a new work breakdown structure (WBS) for all Ballistic Missile Defense System (BMDS) elements to provide greater insight into funding requirements. Thus, funding requirements for FY 2004-2009 are now broken into capability blocks. In accordance with this new WBS, Air-based boost has been broken into three Airborne Laser (ABL) capability blocks (ABL Block 2004 -- Project 0710, ABL Block 2006 -- Project 0810, and ABL Block 2008 -- Project 0910).

RDT&E Articles:
The test articles associated with Block 2004 will decrease risk and improve the probability of success for flight test objectives. The following targets were delivered in the fiscal year specified:

FY 2003:
14 Lance Missiles.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Air-Based Boost	406,738		
RDT&E Articles (Quantity)	14		

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

	FY 2003	FY 2004	FY 2005
Air-Based Boost - Government Activities	24,752		
RDT&E Articles (Quantity)			

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

	FY 2003	FY 2004	FY 2005
Air-Based Boost - Test and Evaluation	21,429		
RDT&E Articles (Quantity)			

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

	FY 2003	FY 2004	FY 2005
Weapon System Development	39,583		
RDT&E Articles (Quantity)			

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

	FY 2003	FY 2004	FY 2005
Infrastructure Improvement	4,395		
RDT&E Articles (Quantity)			

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

	FY 2003	FY 2004	FY 2005
Technology Insertion	13,868		
RDT&E Articles (Quantity)			

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

	FY 2003	FY 2004	FY 2005
Iron Bird	40,000		
RDT&E Articles (Quantity)			

Air-Based Boost FY 2003 accomplishments can be found in the ABL Block 04 R-2A.

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: **0603883C Ballistic Missile Defense Boost 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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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: **0603883C Ballistic Missile Defense Boost Defense Segment**

D. Acquisition Strategy

The Airborne Laser entered into a program definition and risk reduction (PDRR) contract in November 1996. The program is structured to demonstrate technical achievements throughout the preliminary design and risk reduction phase, culminating in a lethality demonstration. The development of the 1st ABL weapon system testbed will be accomplished via incrementally stepping through the following key knowledge points:

1) completion of ground testing of a flight worthy, six module, weapon class laser segment suitable for use in an ABL
2) completion of ground testing of a flight worthy beam control fire control segment
3) completion of flight testing of the Beam Control / Fire Control (BCFC) segment
4) completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
5) success demonstration of the ABL lethality against a boosting ballistic missile
6) flight testing of an expanded ABL weapon system performance envelope

Additional technology, infrastructure and system definition activities focus on reducing risk and uncertainty in achieving the lethal demonstration and in the cost and performance of future blocks.

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: 0603883C Ballistic Missile Defense Boost 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
Air-Based Boost										
ABL Block 2004 Contract	C/CPAF	Boeing Defense and Space Group/ Seattle, WA	795,378					CONT.	795,378	TBD
Weapon System Development										
	SS/CPAF	Boeing Defense and Space Group/ Seattle, WA	39,583					CONT.	39,583	TBD
Infrastructure Improvement										
	SS/Various	Various	4,997					CONT.	4,997	TBD
Technology Insertion										
Contract	SS/Various	Various	19,293					CONT.	19,293	TBD
Iron Bird										
Contract	SS/CPAF	Boeing Defense & Space Group/ Seattle, WA	40,000					CONT.	40,000	TBD
Subtotal Product Development			899,251	0		0		0	899251	

Remarks
Air-Based Boost is being superceded by ABL Block capability development efforts. See ABL Block 04 for FY 2004 and FY 2005 activities and funding requirements. Prior years are MDA totals.

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
Air-Based Boost - Government Activities										
Technical Support Costs	Various	Various	30,804					CONT.	30,804	TBD
Government and Other Support	Various	Various	17,292					CONT.	17,292	TBD
Subtotal Support Costs			48,096	0		0		0	48096	

Remarks
Air-Based Boost is being superceded by ABL Block capability development efforts. See ABL Block 04 for FY 2004 and FY 2005 activities and funding requirements. Prior years are MDA totals.

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: 0603883C Ballistic Missile Defense Boost 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
Air-Based Boost - Test and Evaluation										
Integrated Test Force	MIPR	AFFTC/ Edwards AFB	19,200					CONT.	19,200	TBD
LFT&E-Lethality Baseline Tests	Various	Various	11,946					CONT.	11,946	TBD
Taget - Test Instrumentation	MIPR	Various	25,736					CONT.	25,736	TBD
Subtotal Test and Evaluation			56,882	0		0		0	56882	

Remarks

Air-Based Boost is being superceded by ABL Block capability development efforts. See ABL Block 04 for FY 2004 and FY 2005 activities and funding requirements. Prior years are MDA totals.

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										
Project Total Cost			1,004,229	0		0			1,004,229	

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: **0603883C Ballistic Missile Defense Boost 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
Acquisition Milestones																												
See ABL Block 04 for FY 2003 accomplishments																												
Testing Milestones																												
See ABL Block 04 for FY 2003 accomplishments																												

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Acquisition Milestones							
See ABL Block 04 for FY 2003 accomplishments	1Q-4Q						
Testing Milestones							
See ABL Block 04 for FY 2003 accomplishments	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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0710 Airborne Laser (ABL) Block 2004	0	603,041	474,335	0	0	0	0
RDT&E Articles Qty	0	3	2	0	0	0	0

Note: Previous ABL Block 06 and ABL Block 08 efforts and funding requirements for FY 2004 and FY 2005 are being consolidated within ABL Block 04 due to a restructuring that addresses the extended development time of the 1st ABL weapon system testbed by reducing concurrency and focusing progress towards successful demonstration through incremental achievement of key milestones with appropriate risk mitigation.

A. Mission Description and Budget Item Justification

The ABL Block 2004 is the first increment in the spiral development of an air-based, boost phase intercept capability using direct energy. This first ABL weapon system test bed under development in Block 2004 represents a unique, dedicated, highly mobile weapon element for the overall BMDS. In addition to a boost defense weapon, the ABL adds a sensor element, expanding the overall Engagement Sequence Groups (ESG) available.

The ABL Block 2004 effort capitalizes on the technical progress achieved to date in integration and test of the 1st ABL weapon system testbed. The primary focus is accomplishing key near-term knowledge points while maintaining the overall objective of achieving a lethal demonstration at the earliest possible date. To that end, efforts necessary to reducing the risk and uncertainties associated with follow-on steps to shoot down also continue. The Block 04 program additionally provides continued ABL specific technology maturation, integration and testing for future blocks and provides continued infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. Studies and a System Requirements Review to define the enhanced 2nd ABL aircraft will be performed to guide infrastructure and technology improvement efforts, as well as the evaluation of the 1st ABL aircraft. These activities further reduce risk and uncertainties in achieving shoot down by refining the definition of the current aircraft baseline, applying lessons learned from the on-going testing, implementing prudent system engineering practices, improving critical component reliability, and improving spares provisioning. The ABL initial development contract was awarded to the Boeing/TRW (now Northrop-Grumman)/Lockheed-Martin team in November 1996, to design, fabricate, integrate, test a Boeing 747 aircraft with a laser device, as well as Beam Control and Battle Management Systems. The extended development of the 1st ABL weapon system testbed will be accomplished via incrementally stepping through the following key knowledge points:

1) completion of ground testing of a flight worthy, weapon class laser segment suitable for use in an ABL
2) completion of ground testing of a flight worthy beam control fire control segment
3) completion of flight testing of the Beam Control / Fire Control (BCFC) segment
4) completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
5) success demonstration of the ABL lethality against a boosting ballistic missile
6) flight testing of an expanded ABL weapon system performance envelope

A significant change to the ABL program in FY 2005 is the deferral of efforts toward development of the Iron Bird, a ground based test facility, and the purchase of the second ABL aircraft. These activities will be reinitiated at a later date.

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B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
ABL Block 2004		442,874	341,935
RDT&E Articles (Quantity)			

FY 2004/2005 Planned Program:
Continue Block 2004 program for developing the 1st ABL weapon system testbed. This includes ground integration and testing of a flight worthy weapons class laser. This also includes efforts to integrate and test the Beam Control Fire Control (BC/FC) segment on the aircraft.

FY 2003 Accomplishments (FY 2003 accomplishments are shown here but funding is from project 4030):
- Completed airworthiness and air-refueling flight testing of the 1st ABL aircraft
- Delivered 1st ABL aircraft to Edwards AFB and began preparation of airframe for integration of beam control/fire control and laser segments
- Completed initial flight testing of the BMC4I segment.
- Successfully tracked ICBM-class missile through entire boost phase through Integrated Flight Test event 10 (IFT-10)
- Completed initial Link-16 testing for first set of messages
- Completed all hardware deliveries to Edwards AFB for Laser System Integration Lab (SIL)
- Completed installation of all six laser modules and 95% of the support hardware into the Laser SIL
- Completed 97% of the integration and 41% testing of the beam control /fire control segment
- Completed qualification of the optical coating process and chamber for coating the large ABL optics
- Completed facilitization for chemical mixing facilities at Edwards AFB

FY 2004 Planned Accomplishments:
- Complete ground integration and testing of the beam control/fire control segment
- Complete integration of the six laser modules in the System Integration Laboratory (SIL)
- Achieve First Light in the System Integration Lab (SIL)
- Begin integration of the beam control segment into the 1st ABL weapon system aircraft
- Support MDNT planning, BMDS C2BMC development, and BMDS sensor algorithm development

FY 2005 Planned Accomplishments:
- Ground test of the BCFC segment in the 1st ABL aircraft
- Complete Link-16 implementation, providing integration into the BMDS
- First flight of the ABL weapon system with Beam Control System
- Successful tracking and surrogate high energy laser engagement of an instrumented missile alternative
- Complete ground test of Active Ranging System (ARS)
- No earlier than (NET) FY 2005, integrate the laser segment into the 1st ABL aircraft
- NET FY 2005, conduct flight test operations with the laser segment
- NET FY 2005, conduct the lethal demonstration

MDA Exhibit R-2A RDT&E Project Justification	Date: February 2004
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	FY 2003	FY 2004	FY 2005
Government Activities		104,836	97,200
RDT&E Articles (Quantity)		3	2

RDT&E Articles:
The test articles associated with Block 2004 are targets for testing the 1st ABL weapon system testbed for evaluating and testing the capability envelope and providing the target for the demonstration of system lethality. The following targets will be prepared for generic MDA configuration and put in hold status until needed for final test configuration.

FY 2004:
3 Foreign Military Assets.
FY 2005:
2 Foreign Military Assets.

FY 2004/2005 Planned Program:
Continue purchase of test instruments, conduct test activities at Edwards AFB, perform lethality assessments on ABL target sets, perform modeling and simulation activities, support development of BMDS specifications and plans, and acquire advisory and assistance services. Continue government operations and support for labor, training, travel, equipment, and testing.

FY 2003 Accomplishments (FY 2003 accomplishments are shown here but funding is from project 4030):
- Completed flight test of the target board on the Proteus aircraft
- Initiated Low Power Missile Alternative Range Target Instrument flight tests
- Built and delivered 14 Lance missiles
- Completed preparation of 3 Terrier Lynx missiles
- Delivered atmospheric decision aid to support ABL testing
- Participated in two BMDS-wide war game exercises
- Created test concepts for integrated BMDS testing in FY05

FY 2004 Planned Accomplishments:
- Complete launch, recovery, and refurbishment testing of an instrumented missile alternative
- Complete optical fault system manager tool
- Continue development and application of modeling and simulation tools to support ABL testing and BMDS integration
- Continue lethality analysis of conceptual and threat missiles
- Support BMDS engineering, test planning, and test execution
- Support ground test activities at Edwards AFB
- Conduct oversight of auxiliary research efforts

FY 2005 Planned Accomplishments:
- Complete AF Link-16 testing
- Complete preparations for system-level capability specification verification
- Support flight test operations out of Edwards AFB
- Provide atmospheric decision aid support to ABL flight testing
- Provide diagnostics and targets to support ABL flight testing

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

	FY 2003	FY 2004	FY 2005
Weapon System Development		24,928	10,100
RDT&E Articles (Quantity)			

FY 2004/2005 Planned Program:
Capture and maintain baseline for 1st ABL weapon system to support definition of an optimized 2nd ABL weapon system testbed through trade studies and data collection and analysis efforts to guide incorporation of lessons learned from SIL and BCFC test and integrations activities (Note: Development of 2nd ABL weapon system testbed has been postponed to include purchase of "green" aircraft)

FY 2003 Accomplishments (FY 2003 accomplishments are shown here but funding is from project 4030):
- Awarded contract for 2nd ABL weapon system testbed definition and engineering System Requirements Review

FY 2004 Planned Accomplishments:
- Continue trade studies to determine system performance capabilities
- Continue effort toward completion of the System Requirements Review for the 2nd ABL weapon system testbed
- Support of National Team architecture activities

FY 2005 Planned Accomplishments:
- Conduct System Requirements Review
- Continue Trade Studies and incorporate lessons learned from SIL and BCFC test and integration activities

	FY 2003	FY 2004	FY 2005
Infrastructure Improvement		18,405	15,100
RDT&E Articles (Quantity)			

FY 2004/2005 Planned Program:
Conduct investments to enhance the ABL specific industrial base with the focus on large optics, optical coatings and targeted manufacturing shortfalls for 2nd ABL weapon system testbed

FY 2003 Accomplishments (FY 2003 accomplishments are shown here but funding is from project 4030):
- Awarded contract for large optics fabrication and optical coating improvements and sustainment

FY 2004 Planned Accomplishments
- Continue large optics fabrication and optical coating improvements and sustainment efforts
- Begin program to improve Electron Bombarded Charge Couple Device (EBCCD) camera manufacturing yields and processes
- Initiate other efforts to improve manufacturing shortfalls for 2nd ABL aircraft hardware
- Support National Team National Production capability analysis

FY 2005 Planned Accomplishments:
- Implement improvements in process and process controls for coating large and small optics
- Improve hardware repeatability

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

- Continue optical coating technique improvement. Provide coatings for ABL test program spares
- Continue efforts to improve the ABL industrial base's capability to sustain testing of first ABL weapon system test bed and meet performance needs of future ABL weapon systems.
- Continue program to improve EBCCD camera manufacturing yields and processes

	FY 2003	FY 2004	FY 2005
Technology Insertion		11,998	10,000
RDT&E Articles (Quantity)			

FY 2004/2005 Planned Program:
Develop promising technologies for incorporation in 2nd ABL weapon system testbed or future ABL blocks. Efforts will focus on technologies that will improve ABL lethality, reliability, and maintainability to improve ABL's contribution to the BMDS

FY 2003 Accomplishments (FY 2003 accomplishments are shown here but funding is from project 4030):
- Initiated efforts to reduce optical jitter, improve illuminator performance, investigate laser light-weighting and composites
- Initiate investigation of deuterated reactants and lightweight structure materials

FY04 Planned Accomplishments
- Continue efforts to reduce optical jitter, improved illuminator performance, and lightweight structural materials
- Initiate investigation of laser advanced techniques
- Initiate efforts to investigate lower altitude pressure recovery system, magazine management, and other promising technologies
- Support to Missile Defense Agency-wide technology needs planning

FY05 Planned Accomplishments
- Continue efforts to reduce optical jitter, improved illuminator performance, and lightweight structural materials
- Continue development of laser advanced techniques and promising technologies

	FY 2003	FY 2004	FY 2005
Iron Bird			
RDT&E Articles (Quantity)			

FY 2004/2005 Planned Program:
No work will be done on the Iron Bird (IB) within the FY04 - FY05 timeframe. This part of the ABL program has been postponed to reduce concurrency and fit within fiscal constraints.

FY 2003 Accomplishments (FY 2003 accomplishments are shown here but funding is from project 4030):
- Concept definition and contract proposal preparation

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: 0603883C Ballistic Missile Defense Boost 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 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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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: **0603883C Ballistic Missile Defense Boost Defense Segment**

D. Acquisition Strategy

The Airborne Laser entered into a program definition and risk reduction (PDRR) contract in November 1996 and since then there has been steady and significant progress. However, all key efforts under the original ABL PDRR contract are now to conclude in 3rd quarter FY 2004 with further work transitioning to incremental delivery order contracts. The program remains structured to demonstrate technical achievements throughout the preliminary design and risk reduction phase, culminating in a lethality demonstration. The purpose of the change in contractual vehicles is to enable better management in the high-risk environment for the state of the art ABL program and, thereby, reduce uncertainties and improve planning. The change allows remaining efforts to be grouped and phased to emphasize the focus on incremental achievement of technical milestones and increasing confidence in the technical viability of the airborne laser.

The extended development of the 1st ABL weapon system testbed will be accomplished via incrementally stepping through the following key knowledge points:

1) completion of ground testing of a flight worthy, six module, weapon class laser segment suitable for use in an ABL
2) completion of ground testing of a flight worthy beam control fire control segment
3) completion of flight testing of the Beam Control / Fire Control (BCFC) segment
4) completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
5) success demonstration of the ABL lethality against a boosting ballistic missile
6) flight testing of an expanded ABL weapon system performance envelope

The Airborne Laser development follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition, and use of two-year capability blocks (in the case of ABL; ABL Block 2004, ABL Block 2006, and ABL Block 2008). This approach systematically and incrementally adds more capability as technology matures.

The ABL Block 04 effort capitalizes on the technical progress achieved to date in integration and test of the 1st ABL weapon system testbed. The primary focus is accomplishing key near-term knowledge points while maintaining the overall objective of achieving a lethal demonstration at the earliest possible date. To that end, efforts necessary to reducing the risk and uncertainties associated with follow-on steps to shoot down also continue. The Block 04 program additionally provides continued ABL specific technology maturation, integration and testing for future blocks and provides continued infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. Studies and a System Requirements Review to define the enhanced 2nd ABL aircraft will be performed to guide infrastructure and technology improvement efforts, as well as the evaluation of the 1st ABL aircraft. These activities further reduce risk and uncertainties in achieving shoot down by refining the definition of the current aircraft baseline, applying lessons learned from the on-going testing, implementing prudent system engineering practices, improving critical component reliability, and improving sparing.

The ABL Block 06 effort will continue program efforts to ground and flight test the 1st ABL weapon system testbed. Test objectives will be to expand the envelope of system performance by systematically stepping through knowledge points. It will provide continued ABL specific technology maturation for integration and testing on subsequent blocks along with infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. The Block 06 effort provides for enhancement of BMDS integration and ground support. Finally, it will continue studies on, and maintain the requirements baseline for, an optimal 2nd ABL aircraft in order to further guide other efforts and reduce risk and uncertainty.

The ABL Block 08 effort furthers ground and flight testing of the 1st ABL weapon system to include expanding into evaluations against a broader spectrum of threats and as an integrated part of the overall BMDS. The Block 08 program continues the ABL specific technology and infrastructure improvement efforts, as well as the trades studies and requirements baseline efforts for defining the 2nd ABL aircraft.

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: 0603883C Ballistic Missile Defense Boost 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
ABL Block 2004										
	C/CPAF	Boeing Defense & Space Group/ Seattle, WA		442,874	1/4Q	341,935	1/4Q	CONT.	784,809	TBD
Weapon System Development										
	SS/CPAF	Boeing Defense & Space Group/ Seattle, WA		24,928	1/4Q	10,100	1/4Q	CONT.	35,028	TBD
Infrastructure Improvement										
Contract	SS/Various	Various/ Various		18,405	1/4Q	15,100	1/4Q	CONT.	33,505	TBD
Technology Insertion										
Contract	SS/Various	Various/ Various		11,998	1/4Q	10,000	1/4Q	CONT.	21,998	TBD
Iron Bird										
Contract	SS/CPAF	Boeing Defense & Space Group/ Seattle, WA								
Subtotal Product Development			0	498,205		377,135		0	875340	

Remarks

Previous ABL Block 06 and ABL Block 08 efforts and funding requirements for FY 2004 and FY 2005 are being consolidated within ABL Block 04 due to a restructuring that addresses the extended development time of the 1st ABL weapon system testbed by reducing concurrency and focusing progress towards successful demonstration through incremental achievement of key milestones with appropriate risk mitigation. Prior year contract activity is identified and funded in project 4030.

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: 0603883C Ballistic Missile Defense Boost Defense Segment

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
Government Activities										
Technical Support Costs	Various	Various/ Various		24,039	1/4Q	21,172	1/4Q	CONT.	45,211	TBD
Government and Other Support	Various	Various/ Various		22,683	1/4Q	14,300	1/4Q	CONT.	36,983	TBD
Subtotal Support Costs			0	46,722		35,472		0	82194	

Remarks

Previous ABL Block 06 and ABL Block 08 efforts and funding requirements for FY 2004 and FY 2005 are being consolidated within ABL Block 04 due to a restructuring that addresses the extended development time of the 1st ABL weapon system testbed by reducing concurrency and focusing progress towards successful demonstration through incremental achievement of key milestones with appropriate risk mitigation. Prior year contract activity is identified and funded in project 4030.

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
Government Activities										
Integrated Test Force	MIPR	AFFTC/ Edwards AFB		20,970	1/4Q	32,400	1/4Q	CONT.	53,370	TBD
LFT&E-Lethality Baseline Tests	Various	Various/ Various		13,630	1/4Q	9,050	1/4Q	CONT.	22,680	TBD
Target - Test Instumentation	MIPR	Various/ Various		23,514	1/4Q	20,278	1/4Q	CONT.	43,792	TBD
Subtotal Test and Evaluation			0	58,114		61,728		0	119842	

Remarks

Previous ABL Block 06 and ABL Block 08 efforts and funding requirements for FY 2004 and FY 2005 are being consolidated within ABL Block 04 due to a restructuring that addresses the extended development time of the 1st ABL weapon system testbed by reducing concurrency and focusing progress towards successful demonstration through incremental achievement of key milestones with appropriate risk mitigation. Prior year contract activity is identified and funded in project 4030.

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: 0603883C Ballistic Missile Defense Boost 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			0	603,041		474,335			1,077,376	

Remarks

Previous ABL Block 06 and ABL Block 08 efforts and funding requirements for FY 2004 and FY 2005 are being consolidated within ABL Block 04 due to a restructuring that addresses the extended development time of the 1st ABL weapon system testbed by reducing concurrency and focusing progress towards successful demonstration through incremental achievement of key milestones with appropriate risk mitigation. Prior year contract activity is identified and funded in project 4030.

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: **0603883C Ballistic Missile Defense Boost 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
Acquisition Milestones																												
Initiated effort to improve illumin. performance	▲																											
Began effort to reduce laser and structural weight	▲																											
Initiated investigation of deuterated reactants	▲																											
Initiated effort to reduce optical jitter	▲																											
Delivered atmospheric model for ABL testing				▲																								
Initiate (ID/IQ) Contract Delivery Order 1						△																						
Conclude prime activities on PDRR contract							△																					
Awarded contract for second ABL A/C def'n and SRR	▲																											
Testing Milestones																												
Flight test of target board on Proteus aircraft	▲																											
Began low power missile target flight test			▲																									
Begin beam control/fire control int. and test								△																				
First Light								△																				
Complete Ground Test of modified ARS											△																	
Complete Testing of Laser Modules in SIL												△																

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: **0603883C Ballistic Missile Defense Boost 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																												
First flight with BCFC												Δ																
Low Power track test of boosting missile												Δ																
Complete Link-16 testing												Δ																
1st flight modified Active Ranging System (ARS)												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: **0603883C Ballistic Missile Defense Boost Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Acquisition Milestones							
Initiated effort to improve illumin. performance	1Q						
Began effort to reduce laser and structural weight	1Q						
Initiated investigation of deuterated reactants	1Q						
Initiated effort to reduce optical jitter	1Q						
Delivered atmospheric model for ABL testing	4Q						
Initiate (ID/IQ) Contract Delivery Order 1		2Q					
Initiate (ID/IQ) Contract Delivery Order 2		2Q					
Initiate (ID/IQ) Contract Delivery Order 3		2Q					
Conclude prime activities on PDRR contract		3Q					
Active Ranging System (ARS) installed in A/C			3Q				
Awarded contract for second ABL A/C def'n and SRR	1Q						
Testing Milestones							
Flight test of target board on Proteus aircraft	1Q						
Began low power missile target flight test	3Q						
Begin beam control/fire control int. and test		4Q					
First Light		4Q					
Complete Ground Test of modified ARS			3Q				
Complete Testing of Laser Modules in SIL			4Q				
First flight with BCFC			4Q				
Low Power track test of boosting missile			4Q				
Complete Link-16 testing			4Q				
BCFC Low Power Acquisition Tracking & Pointing			4Q				
1st flight modified Active Ranging System (ARS)			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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0810 Airborne Laser (ABL) Block 2006	0	0	0	532,794	586,769	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

The ABL Block 06 effort will continue program efforts to ground and flight test the 1st ABL weapon system testbed. Test objectives will be to expand the envelope of system performance by systematically stepping through knowledge points. It will provide continued ABL specific technology maturation for integration and testing on subsequent blocks along with infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. The Block 06 effort provides for enhancement of BMDS integration and ground support. Finally, it will continue studies on, and maintain the requirements baseline for, an optimal 2nd ABL aircraft in order to further guide other efforts and reduce risk and uncertainty.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Funding in this Project is not programmed until FY06.			
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 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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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: **0603883C Ballistic Missile Defense Boost 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
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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

D. Acquisition Strategy

The Airborne Laser entered into a program definition and risk reduction (PDRR) contract in November 1996 and since then there has been steady and significant progress. However, all key efforts under the original ABL PDRR contract are now to conclude in 3rd quarter FY 2004 with further work transitioning to incremental delivery order contracts. The program remains structured to demonstrate technical achievements throughout the preliminary design and risk reduction phase, culminating in a lethality demonstration. The purpose of the change in contractual vehicles is to enable better management in the high-risk environment for the state of the art ABL program and, thereby, reduce uncertainties and improve planning. The change allows remaining efforts to be grouped and phased to emphasize the focus on incremental achievement of technical milestones and increasing confidence in the technical viability of the airborne laser.

The extended development of the 1st ABL weapon system testbed will be accomplished via incrementally stepping through the following key knowledge points:

1) completion of ground testing of a flight worthy, six module, weapon class laser segment suitable for use in an ABL
2) completion of ground testing of a flight worthy beam control fire control segment
3) completion of flight testing of the Beam Control / Fire Control (BCFC) segment
4) completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
5) success demonstration of the ABL lethality against a boosting ballistic missile
6) flight testing of an expanded ABL weapon system performance envelope

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

The Airborne Laser development follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition, and use of two-year capability blocks (in the case of ABL; ABL Block 2004, ABL Block 2006, and ABL Block 2008). This approach systematically and incrementally adds more capability as technology matures.

The ABL Block 04 effort capitalizes on the technical progress achieved to date in integration and test of the 1st ABL weapon system testbed. The primary focus is accomplishing key near-term knowledge points while maintaining the overall objective of achieving a lethal demonstration at the earliest possible date. To that end, efforts necessary to reducing the risk and uncertainties associated with follow-on steps to shoot down also continue. The Block 04 program additionally provides continued ABL specific technology maturation, integration and testing for future blocks and provides continued infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. Studies and a System Requirements Review to define the enhanced 2nd ABL aircraft will be performed to guide infrastructure and technology improvement efforts, as well as the evaluation of the 1st ABL aircraft. These activities further reduce risk and uncertainties in achieving shoot down by refining the definition of the current aircraft baseline, applying lessons learned from the on-going testing, implementing prudent system engineering practices, improving critical component reliability, and improving sparing.

The ABL Block 06 effort will continue program efforts to ground and flight test the 1st ABL weapon system testbed. Test objectives will be to expand the envelope of system performance by systematically stepping through knowledge points. It will provide continued ABL specific technology maturation for integration and testing on subsequent blocks along with infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. The Block 06 effort provides for enhancement of BMDS integration and ground support. Finally, it will continue studies on, and maintain the requirements baseline for, an optimal 2nd ABL aircraft in order to further guide other efforts and reduce risk and uncertainty.

The ABL Block 08 effort furthers ground and flight testing of the 1st ABL weapon system to include expanding into evaluations against a broader spectrum of threats and as an integrated part of the overall BMDS. The Block 08 program continues the ABL specific technology and infrastructure improvement efforts, as well as the trades studies and requirements baseline efforts for defining the 2nd ABL aircraft.

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: **0603883C Ballistic Missile Defense Boost 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																												
Continue ground and flight testing													△							△								

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Continue ground and flight testing				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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0910 Airborne Laser (ABL) Block 2008	0	0	0	0	0	445,103	425,274
RDT&E Articles Qty	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

The ABL Block 08 effort furthers ground and flight testing of the 1st ABL weapon system to include expanding into evaluations against a broader spectrum of threats and as an integrated part of the overall BMDS. The Block 08 program continues the ABL specific technology and infrastructure improvement efforts, as well as the trades studies and requirements baseline efforts for defining the 2nd ABL aircraft.

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 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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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: **0603883C Ballistic Missile Defense Boost 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
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

D. Acquisition Strategy

The Airborne Laser entered into a program definition and risk reduction (PDRR) contract in November 1996 and since then there has been steady and significant progress. However, all key efforts under the original ABL PDRR contract are now to conclude in 3rd quarter FY 2004 with further work transitioning to incremental delivery order contracts. The program remains structured to demonstrate technical achievements throughout the preliminary design and risk reduction phase, culminating in a lethality demonstration. The purpose of the change in contractual vehicles is to enable better management in the high-risk environment for the state of the art ABL program and, thereby, reduce uncertainties and improve planning. The change allows remaining efforts to be grouped and phased to emphasize the focus on incremental achievement of technical milestones and increasing confidence in the technical viability of the airborne laser.

The extended development of the 1st ABL weapon system testbed will be accomplished via incrementally stepping through the following key knowledge points:

1) completion of ground testing of a flight worthy, six module, weapon class laser segment suitable for use in an ABL
2) completion of ground testing of a flight worthy beam control fire control segment
3) completion of flight testing of the Beam Control / Fire Control (BCFC) segment
4) completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
5) success demonstration of the ABL lethality against a boosting ballistic missile
6) flight testing of an expanded ABL weapon system performance envelope

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

The Airborne Laser development follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition, and use of two-year capability blocks (in the case of ABL; ABL Block 2004, ABL Block 2006, and ABL Block 2008). This approach systematically and incrementally adds more capability as technology matures.

The ABL Block 04 effort capitalizes on the technical progress achieved to date in integration and test of the 1st ABL weapon system testbed. The primary focus is accomplishing key near-term knowledge points while maintaining the overall objective of achieving a lethal demonstration at the earliest possible date. To that end, efforts necessary to reducing the risk and uncertainties associated with follow-on steps to shoot down also continue. The Block 04 program additionally provides continued ABL specific technology maturation, integration and testing for future blocks and provides continued infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. Studies and a System Requirements Review to define the enhanced 2nd ABL aircraft will be performed to guide infrastructure and technology improvement efforts, as well as the evaluation of the 1st ABL aircraft. These activities further reduce risk and uncertainties in achieving shoot down by refining the definition of the current aircraft baseline, applying lessons learned from the on-going testing, implementing prudent system engineering practices, improving critical component reliability, and improving sparing.

The ABL Block 06 effort will continue program efforts to ground and flight test the 1st ABL weapon system testbed. Test objectives will be to expand the envelope of system performance by systematically stepping through knowledge points. It will provide continued ABL specific technology maturation for integration and testing on subsequent blocks along with infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. The Block 06 effort provides for enhancement of BMDS integration and ground support. Finally, it will continue studies on, and maintain the requirements baseline for, an optimal 2nd ABL aircraft in order to further guide other efforts and reduce risk and uncertainty.

The ABL Block 08 effort furthers ground and flight testing of the 1st ABL weapon system to include expanding into evaluations against a broader spectrum of threats and as an integrated part of the overall BMDS. The Block 08 program continues the ABL specific technology and infrastructure improvement efforts, as well as the trades studies and requirements baseline efforts for defining the 2nd ABL aircraft.

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: **0603883C Ballistic Missile Defense Boost 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																												
Continue ground and flight testing																					△							△

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Testing Milestones							
Continue ground and flight testing						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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
4010 Kinetic Energy Boost	99,547	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

In FY 2003, The Missile Defense Agency (MDA) combines funds under Projects 4020 (Sea-Based Boost) and 4040 (Space-Based Boost) in Project 4010 to develop the Block 2010 Kinetic Energy (KE) boost phase capability. In FY 2004 and beyond, the project will transition to the BMDS Interceptor Program Element (PE) 0603886C. A comprehensive description of this effort can be found in PE 0603886C, Projects 0013 and R113.

The MDA is developing a Ballistic Missile Defense System (BMDS) that protects the U.S., U.S. Allies, friends, deployed forces, and areas of vital interest by providing layered defenses to intercept ballistic missiles in all phases of flight - boost, midcourse, and terminal. MDA plans an evolutionary, spiral acquisition approach to achieve greater capability over time.

Creating a boost phase layer is fundamental to the MDA goal of a robust, integrated BMDS. By Block 2010, the MDA plans to develop and demonstrate, through flight-testing in the BMDS Test Bed, a mobile, land based boost/ascent phase capability that uses hit-to-kill technology. Based on the interceptor's performance, its initial capability may be extended into midcourse and terminal phases. MDA will test the Block 2010 interceptor to demonstrate its potential application. This capability will evolve in subsequent Blocks to integrate with other launch platforms (e.g. sea based) providing greater flexibility and capability to the BMDS. Throughout its development, the Block 2010 capability will rely heavily on existing hardware and proven technology.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Block 2010	99,547		
RDT&E Articles (Quantity)			

FY 2003 Accomplishments:
- Awarded two Concept Design contracts for down-select to one capability developer in FY 2004.
- Conducted Boost/Ascent capability Concept Design phase using capability-based acquisition approach
- Conducted high fidelity modeling and technical evaluation of competitor capabilities
- Conducted rolling down select for Development and Test (D&T) phase
- Conducted Sea-Based Commonality/Compatibility evaluation of Land-Based Boost/Ascent Concept
- Initiated operational sea basing platform study
- Selected containership for sea based test bed following Military Sealift Command market survey
- Completed initial hardware-in-the-loop testing of a kill vehicle seeker
- Built and tested a full-scale prototype launcher
- Static fired the second stage rocket motor with trapped ball thrust vector control
- Conducted real time C2BMC/Fire Control experiments with Overhead Non-imaging infrared (ONIR) sensors
- Built and exercised a high-fidelity simulation of entire KEI element concept
- Initiated procurement of spacecraft for the Near Field Infra Red Experiment

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

- Initiated procurement for the Launch vehicle for the Near Field Infra Red Experiment
- Integrated and tested the kill vehicle subcomponents in preparation for an FY 2004 Development Testing
- Conducted real-time fire control/BMC2 exercises and simulated engagements using space launch and ballistic missile targets of opportunity
- Collected critical boost/ascent phenomenology data with ground, airborne, and space test assets.

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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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: **0603883C Ballistic Missile Defense Boost 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

D. Acquisition Strategy

The KE Boost project 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 overall program objective is to add a KE Boost layer to the BMDS Block 2010 capability, fielding more robust capabilities in subsequent Blocks. In FY 2002, the near-field experiment contract was awarded as a result of a Broad Area Announcement competition. In FY 2003, two Block 2010 concept design contracts were awarded with a down select to one capability development contractor in FY 2004. (See PE 0603886C (BMDS Interceptors), Projects 0913 and 0013, for the acquisition strategy in FY 2004 and beyond.)

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: 0603883C Ballistic Missile Defense Boost 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
Block 2010										
Ground Based	C/Various	LM & NG	19,994					CONT.	19,994	TBD
Sensor Integration	MIPR	SBIRS SPO/ Los Angeles AFB,CA	2,300					CONT.	2,300	TBD
Subtotal Product Development			22,294	0		0		0	22294	

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
Block 2010										
SETA	C/FFP	MEI	3,971					CONT.	3,971	TBD
Capability Engineering	MIPR	NSWC/DD / Dahlgren, VA	1,125					CONT.	1,125	TBD
SETA	C/FFP	MTSI	589					CONT.	589	TBD
Capability Engineering	MIPR	MDNT	1,500					CONT.	1,500	TBD
Capability Engineering	MIPR	Aerospace	210					CONT.	210	TBD
Capability Engineering	Various	AFRL	50						50	
Subtotal Support Costs			7,445	0		0		0	7445	

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: 0603883C Ballistic Missile Defense Boost 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
Block 2010										
Test Planning & Execution	MIPR	SMC Det 12/ Kirtland AFB, NM	200					CONT.	200	TBD
Test Planning & Execution	MIPR	NSWC/PHD/ Port Hueneme, CA	1,505					CONT.	1,505	TBD
Test Planning & Execution	Various	JCTE/ Huntsville, AL	2,000					CONT.	2,000	TBD
Boost Kill Vehicle	Various	AFRL/ Kirtland AFB, NM	2,200					CONT.	2,200	TBD
Boost Kill Vehicle	Various	Raytheon and Navy / Tucson, AZ	12,100					CONT.	12,100	TBD
Boost Kill Vehicle	Various	AFRL/ Kirtland AFB, NM	300					CONT.	300	TBD
Near Field Infrared Experiment	MIPR	SMC Det 12/ Kirtland AFB, NM	7,550					CONT.	7,550	TBD
Near Field Infrared Experiment	C/CPAF	Spectrum Astro/ Gilbert, AZ	20,750					CONT.	20,750	TBD
Near Field Infrared Experiment	Various	AFRL/ Kirtland AFB, NM	11,800					CONT.	11,800	TBD
Near Field Infrared Experiment	Various	Raytheon and Navy EA/ Tucson, AZ	5,000					CONT.	5,000	TBD
Near Field Infrared Experiment	MIPR	SMC Det 12/ Kirtland AFB, NM	300						300	
Test Bed Development & Test	Various	AFRL/ Kirtland AFB, NM	2,100						2,100	
Test Bed Development & Test	Various	JCTI/ Huntsville, AL	2,093						2,093	

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: 0603883C Ballistic Missile Defense Boost 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
Testbed Development & Test	MIPR	NSWC/PHD/ Port Hueneme, CA	700						700	
Testbed Development & Test	Various	JCTI/ Huntsville, AL	350						350	
Subtotal Test and Evaluation			68,948	0		0		0	68948	

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
Block 2010										
FFRDC	MIPR	MIT/LL/ Hanscom AFB,MA	500					CONT.	500	TBD
FFRDC	C/Various	JHU/APL/ Laurel,MD	360					CONT.	360	TBD
Subtotal Management Services			860	0		0		0	860	

Remarks

Project Total Cost			99,547	0		0			99,547	

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: **0603883C Ballistic Missile Defense Boost 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
Land Based Block 2010																												
Block 10 Capability Request For Proposal (RFP)		▲																										
Block 10 Multiple Contractor Award			▲																									

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Land Based Block 2010							
Block 10 Capability Request For Proposal (RFP)	2Q						
Block 10 Multiple Contractor Award	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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
4043 Space-Based Laser	16,229	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) will continue to pursue directed energy (DE) technologies as an important component of the BMD System. Directed energy applications remain among the highest priorities actively pursued as a part of MDA's technology effort.

In FY 2002, the Space-Based Laser program was reevaluated in its entirety. Results of this review included a general program restructure and the cessation of prior SBL-specific program goals. In FY 2003 and beyond, the legacy SBL program will be evolved into a Laser Technology program and will be managed as part of the Advanced Systems (AS) program. This directorate will focus efforts and build on existing knowledge to further refine the DE concept and provide options for future system production. Emergent technologies resulting from this investment will provide MDA with the ability to pursue DE systems, possibly including a Space-Based DE program. This strategy is consistent with the MDA spiral development and evolutionary acquisition approach to building effective and capable missile defenses.

Laser Technology: The Laser Technology program focuses on developing lasers and related component technology for low power applications including tracking, weapon guidance, and imaging, while investing in high-energy laser technologies that could lead to a future Space-Based Laser effort. The emphasis on low-power systems is driven by their considerable potential to improve and support MDA's hit-to-kill weapons.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Space Based Laser	16,229		
RDT&E Articles (Quantity)			

FY 2002 Accomplishments:

Successfully completed system level SBL Integrated Flight Experiment (IFX)design that satisfied performance requirements to destroy a boosting missile from space using a high-energy laser as specified in the Statement of Objectives.

Assembled and characterized the first diagnostic for making MHz frequency sub-aperture measurements on a high energy laser beam (MITS--MHz Intensity and Tilt Sensor).

Successfully made the first MHz frequency sub-aperture measurements on a high energy laser beam (Alpha test HL913) and demonstrated that the high temporal frequency sub-aperture slope content of the beam was small. In addition, HL913 was very successful by being one of the longest high-energy tests performed with Alpha at 8 seconds.

Completed CDR on the Short Stack laser risk reduction Test Bed to validate the performance models used in the IFX laser design.

Completed testing of three Advanced Nozzle configurations for improved HF/HFOT/DF laser performance (SBL developed hardware, testing co-funded by JTO).

Efficiently closed out the Team SBL IFX contract for development and spaceflight of the SBL Integrated Flight Experiment. Allocated remaining FY 2002 funds to laser system technology efforts.

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

FY 2003 Planned Program:

Major Projects: The Agency plans to select concepts and award contracts for two focused technology projects in FY 2003, and award a third similar contract in FY 2004. These projects will be drawn from proposals solicited from the laser and electro-optics industry. Candidates include a major effort to improve the laser transmitters for laser radars in the next 5 years, solid-state laser weapons development that also develops high-power illuminator systems, relay-mirror technology that could support a future integrated laser architecture of air-, ground-, and space-based platforms, and advanced research on chemical lasers to re-invigorate the search for an affordable Space Based Laser.

Technology Base activity: This funding supports a wide range of efforts deemed worthy of investigation for potential application to the BMD System, yet insufficiently mature to warrant major contract award. Technology Base projects will include research into highly advanced solid-state and chemical laser concepts requiring laboratory validation, new concepts for kinetic weapon guidance via remote lasers, and new detector concepts to enable future laser radars to discriminate moving targets using motion and shape features.

Leveraging of successful projects initiated under the High Energy Laser (HEL) Joint Technology Office (JTO): Promising JTO projects with specific applicability to ballistic missile defense will be selected for intensified funding under MDA auspices, in to rapidly exploit breakthroughs and successes achieved under the JTO program and apply them to missile defense applications.

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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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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PE 0603888C Ballistic Missile Defense Test and Targets	0	635,782	716,427	673,476	656,152	654,015	688,119	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: **0603883C Ballistic Missile Defense Boost Defense Segment**

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

D. Acquisition Strategy

Space Based Laser followed the Missile Defense Agency's capability –based acquisition strategy that emphasized testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks.

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: 0603883C Ballistic Missile Defense Boost 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
Space Based Laser										
SBL IFX Joint Venture Team	Various	Boeing, Lockheed, TRW/ El Segundo, CA	30,000						30,000	
Other	Various	Various	13,404						13,404	
Laser Technology Program	Various	Various								
Subtotal Product Development			43,404	0		0		0	43404	

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
Space Based Laser										
SBL IFX Technical Support	Various	Various	3,444						3,444	
Laser Technology Support	Various	Various								
Subtotal Support Costs			3,444	0		0		0	3444	

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: **0603883C Ballistic Missile Defense Boost 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			46,848	0		0			46,848	
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: **0603883C Ballistic Missile Defense Boost 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
Contractual Activities& Events																												
Award Contracts to Develop Components for BMDS	▲	▲																										
Award Multiple Contracts	▲	▲																										

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contractual Activities& Events							
Award Contracts to Develop Components for BMDS	1Q,2Q						
Award Multiple Contracts	1Q,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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
4090 Program-Wide Support	39,102	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 4090 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	39,102	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: **0603883C Ballistic Missile Defense Boost 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 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
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

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
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 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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: **0603883C Ballistic Missile Defense Boost Defense Segment**

COST ($ in Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
0602 Program-Wide Support	0	14,229	18,279	22,873	24,967	28,499	30,687
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Fiscal Year 2003 is reflected in Project 4090 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	14,229	18,279
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: **0603883C Ballistic Missile Defense Boost 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 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
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

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: **0603883C Ballistic Missile Defense Boost Defense Segment**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,056,035	3,744,066	4,404,335	3,067,800	3,087,147	1,881,298	1,802,257	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