Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512
0907 Terminal High Altitude Area Defense (THAAD) Block 2006/2008	717,889	759,677	1,046,082	931,000	779,407	352,976	0	0
0007 Terminal High Altitude Area Defense (THAAD) Block 2010	0	0	0	0	0	168,000	635,068	394,998
0401 Israeli Arrow Program	135,644	152,048	77,616	79,494	77,539	77,723	79,340	80,987
0602 Program-Wide Support	7,261	16,663	19,912	24,182	22,728	18,620	16,874	9,527
Amount Included in PE 0904903D	0	0	0	0	0	-174,900	-328,000	-60,500
Total PE Cost Reflected in R-1	860,794	928,388	1,143,610	1,034,676	879,674	442,419	403,282	425,012

Note:

THAAD (Project 0907): The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

Implementation of the new BMDS baseline approach directed the reallocation of funding among Blocks. Project 0707 (FY04 - FY06) and Project 0807 (FY04 - FY08) were realigned and collapsed into Project 0907. Project 0807 (FY09 - FY10) was realigned and collapsed into Project 0007.

A. Mission Description and Budget Item Justification

The mission of the Missile Defense Agency (MDA) is to develop an integrated layered Ballistic Missile Defense System (BMDS) to defend the United States, its deployed forces, friends and allies from ballistic missiles of all ranges and in all phases of flight. In late 2004 the United States fielded a limited capability to defeat a ballistic missile threat. Continuing through the Future Years Defense Plan (FYDP), the breadth and depth of this initial capability will be expanded by adding and networking forward-deployed sensors, interceptors at sea and on land, and layers of increasingly capable weapons and sensors. Today's MDA activities are focused on five objectives: 1) complete development, initial fielding, and verification of Block 2004; 2) provide BMDS sustainment and Warfighter (Combatant Commanders) support; 3) develop a totally integrated capability for Block 2006 and beyond based on a strong core research and development program and improving the BMDS incrementally over time to meet future challenges; 4) execute an increasingly complex test program; and 5) establish a robust international foundation for missile defense.

MDA identifies BMDS capabilities, architectures and element contributions to counter the threat and organizes them by Engagement Sequence Groups (ESGs). These ESGs describe a combination of weapons, sensors and Command and Control/Battle Management Communications (C2BMC) capabilities that must work together to detect, track and intercept an enemy missile - the complete kill chain from the time the threat missile is first detected through the intercept of the target. Through ESGs, the MDA Systems Engineer identifies the necessary interfaces required to deliver a usable configuration of the BMDS. ESGs are also useful in helping the operator plan and train for operation of that capability, and they provide a means to track and test future improvements to the system.

As part of the total BMDS, the Terminal Defense Segment (TDS) Program Element (PE) funds the Terminal-related element portions of Blocks 2008 and 2010 and other Terminal-related mission area investment activities. The TDS elements and activities include Terminal High Altitude Area Defense (THAAD) and the Israeli Arrow Program. The Patriot Advanced Capability (PAC) 3 element is also a part of the Terminal Defense mission; however, it is funded by the U.S. Army beginning in FY 2004. The BMDS elements in Terminal Defense pursue development and selective upgrades of missile defense capabilities that engage short to medium-range ballistic missiles in the late mid-course and terminal phase of their trajectory.

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The Terminal Defense Elements provide the final opportunity to engage short to medium-range ballistic missiles not engaged or destroyed in the boost or mid-courses of trajectory. The THAAD, AEGIS BMD, and fielded Patriot Systems provide the only capability to defend deployed U.S. forces from short to medium-range ballistic missiles, and protect broadly dispersed assets and population centers or selected U.S. sites (Homeland Defense) from short to medium-range ballistic missile attacks. The THAAD element enhances the MDA TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course (exo-atmospheric engagements) and terminal phase (endo-atmospheric engagements) of their trajectory and adds significant capability to the BMDS as the threat missiles transition from the mid-course to terminal phase.

The MDA System Engineering & Integration (SE&I) Team's principal focus is the trade-space and design parameters necessary to develop an integrated BMD System. Conversely, the THAAD program's principal focus is the engineering and development of the THAAD weapon system and achieving desired performance within the integrated BMDS. Collaborative Engineering ensures that ESGs are part of an integrated system design. The THAAD element contributes to the BMDS by providing THAAD Interceptor Engage On THAAD Radar (Cobra Dane (CD)/Upgraded Early Warning Radars (UEWR)/Sea-Based X-Band Radar (SBX)), and THAAD Interceptor Launch On Remote Sensor ESG capabilities. When integrated into the BMDS with the BMDS C2BMC, AEGIS BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the BMDS overall effectiveness by engaging missiles as they transition from exo- to endo- atmospheric flight. The flow down of BMDS capability specifications from the Missile Defense Agency Systems Engineering & Integration efforts will guide the integration of the TDS into the BMDS and the BMDS C2BMC architecture.

MDA's Responsible Test Organization (RTO) structure centralizes authority and responsibility for all BMDS testing. The RTO develops the BMD System test plans, test infrastructure, range support teams, resources and test policy (described further in PE 060388C - BMD Tests and Targets). The Combined Test Force (CTF) consolidates the personnel, processes, and fiscal resources across MDA, including elements into a unified cohesive team to execute the BMDS test program.

Consistent with the MDA block management framework, the THAAD system element consists of Blocks 2006/2008, and 2010:

Block 2006/2008: THAAD spiral development has begun with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats and exo/high endo intercept capability against a limited target set. This will accomplish the following: (1) Test Missile with Exo and High Endo Algorithms; (2) Radar with Initial Discrimination Capability; and (3) C2BMC with Limited Tactical Digital Information Link and Defense Design Planner. Development through FY 2006 will lay a foundation for THAAD Interceptor Engage on THAAD Radar ESG capability. This initial phase also provides the capability for other BMDS Elements (AEGIS BMD, PATRIOT) to conduct engagement sequences with THAAD data over Link-16. The initial series of flight tests for the THAAD Interceptor Engage on THAAD Radar ESG begins in FY 2005 and continues into FY 2007 with a total of 8 flight tests. The five major components (missiles, launchers, radars, THAAD C2BMC, and THAAD-specific support equipment) will be integrated into the THAAD element and the BMDS.

Block 2006 development evolves to achieve a more robust radar discrimination, intercept capability in stressing Exo and Endo battlespace; salvo firing doctrine; and the ability to operate in a full spectrum of tactical missile environments and survivability. To facilitate tactical employment by soldiers, it also includes THAAD C2BMC embedded training, automated defense planning, and extensive interoperability using Link-16 and United States Message Text Format (USMTF) message set with BMDS and forward base engagement coordination with other BMDS elements. In the Block 2006 timeframe, THAAD ESG development adds THAAD Interceptor Engage on THAAD Radar (CD/UEWR/SBX) and the capability for other BMDS Elements to conduct engagement sequences to the BMDS baseline ESGs, including AEGIS BMD Launch On THAAD, AEGIS BMD Engage On THAAD, Ground Based Interceptor (GBI) Launch On THAAD and GBI Engage On THAAD via BMDS. Collaborative radar hardware and software development efforts are provided to support the THAAD and Forward Based X-Band-Transportable (FBX-T) radars. The second series of Flight tests begins in FY 2007 and continues into FY 2009 with a total of 9 flight tests. The THAAD element has the flexibility to evolve to the MDA objective of putting the BMDS on alert and conducting concurrent testing and operations and performing logistics and sustainment; thereby providing a Block 2006 THAAD capability to the BMDS. The THAAD Element will provide coordinated engagements with BMDS via the BMDS C2BMC network.

Block 2006/2008 development culminates in demonstrated THAAD capabilities in both endo and exo-atmospheric battlespace against the full spectrum of adversarial capabilities. In addition, development will include improved survivability, crew operator training capability and upgrades to provide for RF-linked launchers for improved defended area and defense against Intermediate Range Ballistic Missiles (IRBMs), capability to launch THAAD interceptors from other BMDS elements and expanding the system's capability to provide THAAD sensor data to the BMDS. This adds the THAAD Launch On Remote Sensor ESG and will be tested in the THAAD System Integration Laboratory (SIL). The Block 2006/2008 development is the foundation for the acquisition and

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delivery of Block 2008 THAAD Fire Unit #1 to support operational assessment and fielding of a BMDS capability useful to the combatant commanders and services. The Fire Unit #1 consists of 24 missiles, 3 launchers, 1 radar and 1 C2BMC.

Block 2010: Block 2010 is the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This block continues the concept of a rapidly deployable configuration to support the TDS mission as well as supporting the strategic surveillance, tracking and fire control missions through Block 2010 enhanced sensor and interceptor capability. Block

2010 leverages Block 2008 development by initiating development of kill vehicle and booster improvements that significantly increase performance of the endo and exo intercept against long range threats. In short, Block 2010 provides the initiation of the next generation THAAD capability that provides rapidly mobile components to extend and deepen BMDS capability against all ballistic missile threats. Block 10 adds the THAAD Interceptor engage on remote sensor ESG. THAAD Fire Unit #2 consists of 24 missiles, 3 launchers, 1 C2BMC and 1 radar.

The Arrow system (developed jointly by the U.S. and Israel) is another one of the TDS' mission area investments and provides Israel an indigenous capability to defend against short and medium range ballistic missiles and helps ensure U.S. freedom of action in future contingencies. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region. The Arrow program consists of the following major efforts: The Arrow System Improvement Program (ASIP) is a block upgrade of the Arrow Weapon System to enhance its capabilities against evolving regional threats. The program also includes the development of Arrow co-manufacturing capability, co-production of the interceptor and the enhancement of Arrow's interoperability with U.S. ballistic missile defense systems (BMDS) via Joint Tactical Information Data System (JTIDS)/Link-16 common communication architecture. The ASIP will develop upgrades to the existing Arrow Weapon System to allow Arrow to address more stressing ballistic missile threats. Related Arrow activities include Caravan Flight test campaign in the U.S., the Israeli Test Bed (ITB), and studies via the Israeli Systems Architecture and Integration (ISA&I) effort that assess the Arrow performance relative to existing and emerging threats.

Program-Wide Support provides funding for common support functions across the entire program such as strategic planning, program integration, cost estimating, contracting, and financial management to include preparation of financial statements, reimbursement of financial services provided by DFAS, internal review and audit, earned-value management, and program assessment. Includes costs for both government civilians performing these functions as well as support contractors providing government staff augmentation in these areas. Applies to costs at the MDA HQ as well as its Executing Agents in the Services: Army Space and Missile Defense Command, Army PEO Space and Missile Defense, Office of Naval Research, and various Air Force laboratory and acquisition activities. Other costs include physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses at the various MDA Executing Agent locations, which at the MDA HQ are generally funded from the Management Headquarters Program Element (0901598C). Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuation on a limited number of foreign contracts.

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B. Program Change Summary	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	874,527	937,748	993,048	1,117,657
Current President's Budget (FY 2006 PB)	860,794	928,388	1,143,610	1,034,676
Total Adjustments	-13,733	-9,360	150,562	-82,981
Congressional Specific Program Adjustments	0	6,500	0	0
Congressional Undistributed Adjustments	0	-15,860	0	0
Reprogrammings	-6,220	0	0	0
SBIR/STTR Transfer	-7,513	0	0	0
Adjustments to Budget Years	0	0	150,562	-82,981

THAAD Projects 0707, 0807, and 0907:

- Congressional reductions in FY05 for a Flight Test Slip and Program Management were compounded by an existing budget shortfall from the Pratt & Whitney incident and transition of work to Aerojet. The overall affect resulted in a program replan with major impacts, e.g., Flight Test program slips, Deferral of Radar #2, deferral of test missile hardware for flight and ground testing, and missile Qualification Testing slips.
- Adjustments in FY07 were due to rephasing the funding profile for the Block 2008 Fire Unit #1.

Arrow Project 0401: Congressional plus up in FY05 will be used to procure approximately 32 Arrow interceptors in the U.S. and Israel.

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COST ($ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0907 Terminal High Altitude Area Defense (THAAD) Block 2006/2008	717,889	759,677	1,046,082	931,000	779,407	352,976	0	0
RDT&E Articles Qty	1	8	4	9	23	24	0	0

Note:
Implementation of the new BMDS baseline approach directed the reallocation of funding among Blocks. Project 0707 (FY04 - FY06), Project 0807 (FY04 - FY11) were realigned and collapsed into Project 0907.

A. Mission Description and Budget Item Justification

The Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The Terminal Defense Elements provide the final opportunity to engage all ranges of ballistic missiles not engaged or destroyed in the boost or mid-course phase of trajectory. The THAAD element contributes to the BMDS by providing THAAD Interceptor Engage on THAAD Radar (Cobra Dane (CD)/Upgraded Early Warning Radars (UEWR)/Sea-Based X-Band Radar (SBX)) and THAAD Interceptor Launch On Remote Sensor capability. THAAD enhances the Missile Defense Agency's (MDA's) TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course and terminal phases of their trajectory. THAAD's highly mobile capability provides BMDS the ability to defend against short to medium-range ballistic missiles and asymmetric threats for protection of U.S. and allied armed forces, broadly dispersed assets and population centers and selected U.S. sites (Homeland Defense) against ballistic missile attacks.

THAAD, in conjunction with the fielded Patriot System, provide the Terminal Defense System layer and supports the MDA objective of enhancing the BMDS capability. Five major components (missiles, launchers, radars, THAAD Command and Control / Battle Management and Communication (C2BMC), and THAAD-specific support equipment) will be integrated into the THAAD element and the BMDS. The THAAD program follows the MDA capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. When integrated into the BMDS Test Bed with BMDS Command & Control Battle Management Communications (C2BMC), Aegis BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the BMDS overall effectiveness by engaging missiles as they transition from exo- to endo- atmospheric flight. The program addresses MDA Systems Engineering and Integration gap analysis of Engagement Support Groups (ESGs), identifying and documenting both element and component capabilities. The flow-down of BMDS capability specifications from the MDA Systems Engineering and Integration efforts will guide the integration of the TDS into the BMDS and the BMDS C2BMC architecture.

Block 2006/2008: THAAD spiral development has begun with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats and exo/high endo intercept capability against a limited target set. This will accomplish the following: (1) Test Missile with Exo and High Endo Algorithms; (2) Radar with Initial Discrimination Capability; and (3) C2BMC with Limited Tactical Digital Information Link and Defense Design Planner. Development through FY 2006 will lay a foundation for THAAD Interceptor Engage on THAAD Radar ESG capability. This initial phase also provides the capability for other BMDS Elements (AEGIS BMD, PATRIOT) to conduct engagement sequences with THAAD data over Link-16. The initial series of flight tests for the THAAD Interceptor Engage on THAAD Radar ESG begins in FY 2005 and continues into FY 2007 with a total of 8 flight tests. The five major components (missiles, launchers, radars, THAAD C2BMC, and THAAD-specific support equipment) will be integrated into the THAAD element and the BMDS.

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and conducting concurrent testing and operations and performing logistics and sustainment; thereby providing a Block 2006 THAAD capability to the BMDS. The THAAD Element will provide coordinated engagements with BMDS via the BMDS C2BMC network.

Block 2006/2008 development culminates in demonstrated THAAD capabilities in both endo and exo-atmospheric battlespace against the full spectrum of adversarial capabilities. In addition, development will include improved survivability, crew operator training capability and upgrades to provide for RF-linked launchers for improved defended area and defense against Intermediate Range Ballistic Missiles (IRBMs), capability to launch THAAD interceptors from other BMDS elements and expanding the system's capability to provide THAAD sensor data to the BMDS. This adds the THAAD Launch On Remote Sensor ESG and will be tested in the THAAD System Integration Laboratory (SIL). The Block 2006/2008 development is the foundation for the acquisition and delivery of Block 2008 THAAD Fire Unit #1 to support operational assessment and fielding of a BMDS capability useful to the combatant commanders and services. The Fire Unit #1 consists of 24 missiles, 3 launchers, 1 radar and 1 C2BMC.

RDT&E Articles for Development Tests (DT):

- FY 2004 (Delivery Schedule): 1 Radar for a total of 1 RDT&E article
- FY 2004 (Buy Schedule): 7 Full-up Missiles; 4 Launchers; 1 THAAD C2BMC (2 Tactical Station Groups (TSGs)) for a total of 12 RDT&E articles
- FY 2005 (Delivery Schedule): 3 Full-up Missiles; 4 Launchers and 1 THAAD C2BMC for a total of 8 RDT&E articles
- FY 2005 (Buy Schedule): 7 Full-up Missiles and 1 Radar for a total of 8 RDT&E Articles
- FY 2006 (Delivery Schedule): 4 Full-up Missiles
- FY 2006 (Buy Schedule): 7 Full-up Missiles and 2 THAAD C2BMCs (4 Tactical Station Groups (TSGs)) for a total of 9 RDT&E articles
- FY 2007 (Delivery Schedule): 7 Full-up Missiles; 1 Radar and 1 THAAD C2BMC (2 TSGs) for a total of 9 RDT&E Articles
- FY 2007 (Buy Schedule): 7 Full-up Missiles and 3 Launchers for a total of 10 RDT&E articles
- FY 2008 (Delivery Schedule): 14 Full-up Missiles, 1 C2BMC (2 TSGs) and 1 Launcher for a total of 16 articles
- FY 2009 (Delivery Schedule): 2 Launchers

RDT&E Articles for Fire Unit #1:

- FY 2007 (Fire Unit Buy Schedule): 24 Missiles; 3 Launchers; 1 THAAD C2BMC; 1 Radar for a total of 29 RDT&E Articles
- FY 2008 (Fire Unit Delivery Schedule): 3 Missiles; 3 Launchers and 1 C2BMC (2 TSGs) for a total of 7 articles
- FY 2009 (Fire Unit Delivery Schedule): 21 Missiles and 1 Radar for a total of 22 articles

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Missile	321,088	334,819	410,267	240,654
RDT&E Articles (Quantity)	0	3	4	7

The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

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FY 2004 Accomplishments:

- Supported completion of Element Design Readiness Review
- Initiated fabrication, assembly and test of hardware for flight testing
- Initiated System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) activities for Missile
- Delivered Missile software (Build 4.0 for Flight Test 1)
- Initiated upgrades to the Missile software
- Initiated buy of 7 Full-up Missiles

FY 2005 Planned Accomplishments:

RDT&E Articles: Deliver 3 Full-up Missiles

- Complete Missile Environments Phase I Ground Test
- Complete Missile assembly qualification for flight testing
- Conduct SIL HWIL integration activities of hardware and software in preparation for flight testing
- Support Flight Test Program at White Sands Missile Range (WSMR)
- Continue fabrication, assembly and test of hardware for flight tests
- Deliver Missile software for integrated element flight testing
- Continue upgrades to the Missile software
- Initiate buy of 7 Full-up Missiles

FY 2006 Planned Program:

RDT&E Articles: Deliver 4 Full-Up Missiles

- Support four flight tests
- Support Flight Test Program at WSMR and Pacific Missile Range Facility (PMRF)
- Continue SIL HWIL integration activities of hardware and software in preparation for flight testing
- Continue fabrication, assembly, and test of hardware for flight test
- Continue upgrades to the Missile software
- Complete missile qualification testing
- Initiate fabrication, assembly, and test of missile hardware in preparation for Insensitive Munitions (IM) testing and missile rounds required for Missile Block Qualification Testing (BQT)
- Initiate upgrades to missile software for Launch on Remote Engagement Sequence Group
- Initiate buy of 7 Full-Up Missiles

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FY 2007 Planned Program:

RDT&E Articles: Deliver 7 Full-Up Missiles

- Support four flight tests
- Continue SIL HWIL integration activities of hardware and software in preparation for flight testing
- Continue fabrication, assembly, and test of hardware for flight test and BQT
- Complete Missile Block Process Validation
- Complete final release of Block 2008 Missile software
- Initiate buy of 7 Full-Up Missiles

	FY 2004	FY 2005	FY 2006	FY 2007
Radar	144,042	140,385	186,940	131,625
RDT&E Articles (Quantity)	1	0	0	1

The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

FY 2004 Accomplishments:

RDT&E Articles: Delivered 1 Radar

- Completed the manufacture of Radar #1 and delivered to White Sands Missile Range (WSMR)
- Initiated Radar Integration at WSMR
- Supported completion of Element Design Readiness Review
- Continued Radar hardware and software development for first integrated element test at WSMR
- Initiated System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) activities for Radar
- Delivered Radar Test Bed to the THAAD SIL and THAAD Technical Evaluation Center
- Delivered Engineering Release of Radar software to the THAAD SIL
- Initiated upgrades to the Radar software
- Delivered Build 4 of the Radar Simulation Model
- Collaborative radar hardware and software development efforts are provided to support the THAAD and Forward Based X-Band-Transportable (FBX-T) radars

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FY 2005 Planned Accomplishments:

- Conduct SIL HWIL integration activities for hardware and software in preparation for flight testing
- Complete Integration of Radar #1
- Initiate design of tactical Prime Power Unit (PPU)
- Deliver Radar software for first integrated element test at WSMR
- Continue upgrades to the Radar software
- Deliver Build 5 of the Radar Simulation Model
- Track targets of opportunity and dedicated radar risk reduction flights
- Complete radar metric calibration
- Complete Alternating Current/Direct Current Qualification Test
- Conduct Radar Block Process Validation
- Conduct Radar Software Build 4.2 Design Readiness Review
- Initiate buy of 1 Radar (production of Transmit/Receive Modules and Transmit/Receive Integrated Multi-Channel Microwave Modules)

FY 2006 Planned Program:

- Continue manufacturing and assembly of 1 Radar (Radar #2)
- Continue Build 4.2 Software development
- Continue development of PPU
- Conduct PPU Critical Design Review and initiate build of first PPU
- Track Targets of Opportunity
- Continue Radar Requirements Verification
- Support Flight Test program at WSMR and Pacific Missile Range Facility (PMRF)
- Initiate software upgrades for expanding the system's capability to provide THAAD sensor data to the BMDS
- Initiate software capability for Joint Technical Architecture compliance

FY 2007 Planned Program:

RDT&E Articles: Deliver 1 Radar

- Complete integration of Radar #2 at WSMR
- Initiate Radar E3 testing at WSMR
- Deliver Engineering Release of Build 4.2 Software
- Support flight testing
- Continue development of PPU
- Deliver Final Release of Build 4.2 Software
- Continue development of software upgrades for expanding the system's capability to provide THAAD sensor data to the BMDS
- Initiate build of second Radar PPU

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	FY 2004	FY 2005	FY 2006	FY 2007
Launcher	25,059	22,352	19,438	18,885
RDT&E Articles (Quantity)	0	4	0	0

FY 2004 Accomplishments:

- Supported Element Design Readiness Review
- Supported initial Element Detailed Test Readiness Investigation
- Completed TACOM HEMTT Qual
- Completed C2BMC/Missile/Launcher Software Beta Tests
- Delivered Launcher Checkout Software Build 1.0 Engineering Release
- Initiated buy of 4 Launchers

FY 2005 Planned Accomplishments:

RDT&E Articles: Deliver 4 Launchers

- Support Short Hot Launch (SHotL) test
- Support Element production planning and flight testing
- Complete final release of Launcher software Build 3 for first integrated Element test at WSMR
- Continue fabrication, assembly, and test of Launcher hardware
- Deliver hardware and software to System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) activities for Launcher
- Deliver launcher hardware to White Sands Missile Range (WSMR) for flight testing
- Support flight test program at WSMR
- Continue development of Launcher software upgrade
- Conduct Software upgrade Design Readiness Review
- Complete Launcher Block Process Validation

FY 2006 Planned Program:

- Continue SIL HWIL integration activities of hardware and software in preparation for flight testing
- Support Fire Unit planning
- Assist in standup of operations for Flight Testing at Pacific Missile Range Facility (PMRF)
- Support Flight Test Program at WSMR and PMRF
- Continue development of Launcher software upgrade
- Initiate design and development Launcher Hardware and Software for Launch on Remote and Remoted Launcher capabilities

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FY 2007 Planned Program:

- Continue SIL HWIL integration activities of hardware and software in preparation for flight testing
- Support conduct of flight testing at PMRF
- Complete final release of Launcher software Build 4 and deliver to the SIL
- Continue to support Fire Unit development, fabrication and integration
- Support Launcher Block Qualification Tests
- Continue design and development of Launcher Hardware and Software for Launch on Remote and Remoted Launcher capabilities
- Initiate buy of 3 Launchers

	FY 2004	FY 2005	FY 2006	FY 2007
C2BMC	51,279	60,663	84,875	45,198
RDT&E Articles (Quantity)	0	1	0	1

The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

FY 2004 Accomplishments:

- Supported completion of Element Design Readiness Review
- Initiated fabrication, assembly, and test of THAAD C2BMC hardware
- Continued THAAD C2BMC software development
- Completed C2BMC/Launcher Pre-System Integration Laboratory (SIL) interface testing
- Initiated SIL Hardware-in-the-Loop (HWIL) activities for THAAD C2BMC
- Delivered THAAD C2BMC Test Bed and Build 4 Engineering Release to SIL
- Continued with the architectural design phase for the defined Build 5 functionality
- Initiated buy of 1 THAAD C2BMC Tactical Station Groups (2 TSGs)

FY 2005 Planned Accomplishments:

RDT&E Articles: Deliver 1 THAAD C2BMC (2 TSGs)

- Continue SIL HWIL integration of C2BMC hardware and software
- Support Flight Test Program at White Sands Missile Range (WSMR)
- Complete fabrication, assembly, integration, and test of THAAD C2BMC TSGs
- Complete Final Release of THAAD C2BMC Software Build 4 and deliver to SIL

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

- Conduct Software Build 5 Design Readiness Review
- Continue development of software upgrades
- Complete Block Process Validation of C2BMC

FY 2006 Planned Program:

- Support Flight Test Program at WSMR and Pacific Missile Range Facility (PMRF)
- Continue integration and test of THAAD C2BMC hardware
- Maintain software development environment and test tools
- Continue development of C2BMC Software Build 5
- Perform tactical software maintenance for C2BMC Software Build 4
- Initiate software upgrades for Launch on Remote, Remoted Launchers and expanding the system's capability to provide THAAD sensor data to the BMDS
- Initiate buy of 2 C2BMCs (4 TSGs)

FY 2007 Planned Program:

RDT&E Articles: Deliver 1 C2BMC (2 TSGs)

- Continue fabrication, assembly, integration and test of C2BMC hardware
- Complete one C2BMC (2 TSGs)
- Complete C2BMC Software Build 5 Engineering Release and deliver to SIL for integration
- Continue supporting flight testing at PMRF
- Continue C2BMC Build 4 tactical software maintenance
- Complete Final Release of C2BMC Software Build 5 and deliver to SIL for integration
- Continue software upgrades for Launch on Remote, Remoted Launchers and expanding the system's capability to provide THAAD sensor data to the BMDS

	FY 2004	FY 2005	FY 2006	FY 2007
Integrated Logistics Support (ILS)	18,712	21,304	46,810	44,550
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- Conducted Soldier in the Loop training to support soldier participation in the Flight Test Program
- Conducted supportability analysis and Logistics Management Information (LMI) validation
- Developed draft supportability strategy
- Procured Government Furnished Equipment (GFE) to support program requirements
- Conducted C17 Roll-on/Roll-off transportation demonstration

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

- Developed/Delivered Ground Test Unit Ship Set (GTUSS), a Preliminary Design Readiness Review Flight Test Ship Set (FTSS) modified to transport the Ground Test Units
- Developed/Delivered a modified FTSS to transport Flight Test Missile Rounds
- Positioned Contractor Logistics Support (CLS) Team at White Sands Missile Range (WSMR) to support flight tests and range operations
- Supported Radar integration at WSMR
- Developed/Delivered Active Leak Sensor System (ALSS) to meet safety/transportation requirements
- Developed/Delivered Draft Integrated Electronic Technical Manual/Electronic Technical Manual (IETM/ETM)
- Reviewed CLS requirements for Pacific Missile Range Facility (PMRF) test flights and Ground Test Support requirements at CONUS sites
- Established Performance Based Logistics (PBL) strategy
- Developed Missile Round Sling (MRS) for loading
- Developed MANPRINT Management Plan

FY 2005 Planned Accomplishments:

- Continue development of Interim Contractor Support System (ICSS)
- Continue to conduct Soldier-in-the-Loop Training and training course development for soldier participation in flight test program
- Support flight and ground test program utilizing CLS at WSMR
- Conduct System Operator Trainer Course
- Continue development of Draft Integrated IETM/ETM
- Continue development of PBL strategy
- Support Peculiar Support Equipment (PSE) Battery Support Center (BSC) development
- Update Packaging, Handling, Storage and Transportation (PHS&T) documentation
- Continue supportability analysis and LMI validation
- Continue to procure GFE to support program requirements
- Complete Basis of Issue Plan/Qualitative Quantitative Personnel Requirements Information (BOIP/QQPR)
- Obtain Air Certification Approval for all THAAD Components
- Obtain Certificate of Equivalency for ground transport of Missile Round
- Obtain Interim Hazard Classification for ground transport of Missile Round
- Complete Explosive Ordnance Disposal (EOD) procedures
- Complete Supply Support Strategy
- Complete Business Case Analysis (BCA) and Core Depot Assessment (CDA) Integrated Product Teams (IPTs) to support PBL
- Complete Interim Instruction Facility

FY 2006 Planned Program:

- Complete Missile Round Trainer Development
- Continue to conduct Soldier-in-the-Loop Training
- Deliver Classroom Explosive Ordnance Disposal System Trainer (CEST) and Practical Explosive Ordnance Disposal System Trainer (PEST)
- Continue LMI validation

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

- Develop and procure training devices and PSE
- Continue development of Integrated ICSS
- Continue development of BCA/CDA
- Continue to develop PBL strategy
- Conducting System Operator Trainer Course
- Continue development of Integrated Logistics Support (ILS) documentation and training for Soldier in the Loop
- Continue CLS Support for flight testing at WSMR and Pacific Missile Range Facility (PMRF)
- Planning for Block 2008 demonstrations, assessments, and training
- Procure GFE for program requirements

FY 2007 Planned Program:

- Continue procuring GFE to support program requirements
- Continue CLS support of flight tests at PMRF
- Support government Block Qualification Testing
- Continue LMI Validation
- Continue to develop PBL strategy
- Conduct integration of BSC and ICSS
- Continue conducting THAAD Soldier training courses
- Develop non-embedded training devices
- Review/update training devices/courses
- Update ICSS hardware and software
- Review/Update PSE, Supportability Strategy, IETM/ETM and CLS Plan

	FY 2004	FY 2005	FY 2006	FY 2007
Weapon Sys Engr & Integ Team	51,571	56,640	97,567	81,309
RDT&E Articles (Quantity)	0	0	0	0

The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

FY 2004 Accomplishments:

- Completed Element Design Readiness Review
- Assessed capabilities using comprehensive, end-to-end digital simulation
- Supported Flight Test mission planning

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

- Completed development/integration of the System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) facility
- Began integration of Components in the SIL HWIL for FT-1
- Continued participation in wargames, exercises and interoperability demonstrations
- Ensured program integration with BMDS Test Bed
- Planned the integration and implementation of THAAD and its components in the BMDS System Engineering & Integration

FY 2005 Planned Accomplishments:

- Initiate SIL HWIL environment development
- Perform System Analysis Scenarios and Designs
- Perform Parametric Performance Assessments
- Support Flight Test mission planning
- Complete integration of an autonomous THAAD system in the SIL HWIL facility
- Support pre-flight testing in the SIL HWIL facility
- Support Flight Test Program at White Sands Missile Range (WSMR)
- Begin validation of the end-to-end digital simulation using Flight Test data
- Support Flight Test data analysis
- Begin validation of the SIL HWIL facility using Flight Test data
- Initial SIL HWIL integration of Final Release of Missile Software Build 6.0, Launcher Software Build 3, C2BMC Software Build 4 and Radar Software Build 4.1 for integrated flight testing
- Provide Weapon System Engineering support for the Radar Software Build 4.2 and THAAD C2BMC Software Build 5 Missile Software Build 7.0 and Launcher Software Build 4 Design Readiness Reviews
- Continue participating in wargames, exercises and interoperability demonstrations
- Update assessment of Element capability using comprehensive, end-to-end digital simulation
- Continue program integration with BMDS System Engineering & Integration

FY 2006 Planned Program:

- Support Flight Test Program at WSMR and Pacific Missile Range Facility (PMRF)
- Continue supporting pre-flight testing in the SIL HWIL facility
- Continue supporting Flight Test data analysis
- Continue validation of the end-to-end digital simulation using Flight Test data
- Continue participating in wargames, exercises and interoperability demonstrations
- Perform System analysis in support of flight test scenarios
- Perform Parametric Performance Assessments
- Planning the integration and implementation of THAAD and its components in the BMDS System Engineering & Integration
- Support Flight Test mission planning
- Plan integration of THAAD into BMDS Test Bed
- Perform Systems Engineering support for Launch on Remote, Remoted Launchers, and expanding the system's capability to provide THAAD sensor data to the BMDS

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2007 Planned Program:

- Perform System Analysis in support of flight testing
- Perform System Engineering for Fire Unit
- Support pre-flight testing in the SIL HWIL facility
- Continue validation of the end-to-end digital simulation using Flight test data
- Initiate element characterization analysis
- Planning the integration and implementation of THAAD and its components in the BMDS System Engineering & Integration
- Conduct Element analysis and validation in support of Design Readiness Review
- Initiate SIL HWIL environments development
- Support Flight Test mission planning
- Initial SIL HWIL integration of Final Release of Missile Software Build 7.0, Launcher Software Build 4, C2BMC Software Build 5 and Radar Software Build 4.2 for integrated flight testing
- Integrate THAAD into the BMDS Test Bed
- Continue Systems Engineering support for Launch on Remote, Remoted Launchers, and expanding the system's capability to provide THAAD sensor data to the BMDS

	FY 2004	FY 2005	FY 2006	FY 2007
Test and Evaluation	37,826	79,644	146,866	168,539
RDT&E Articles (Quantity)	0	0	0	0

The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

FY 2004 Accomplishments:

- Completed Pacific Missile Range Facility (PMRF) THAAD Military Construction facilities
- Emplaced THAAD Radar for integration and testing at White Sands Missile Range (WSMR)
- Delivered Launch and Test Support Equipment (L&TSE) to WSMR for range integration
- Continued planning for flight testing
- Continued planning for Block Qualification Testing (BQT) and Missile drop test
- Continued planning for Live Fire Test & Evaluation (LFT&E), full-scale Sled test, and sub-scale Light Gas Gun (LGG) test planning
- Conducted Test Planning in preparation for flight testing

FY 2005 Planned Accomplishments:

- Continue PMRF Activation
- Conduct Flight Tests at WSMR

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

- Continue planning for BQT
- Continue Missile Drop Test Planning
- Continue planning for LFT&E program
- Initiate Transfer of L&TSE and range integration
- Initiate component integration planning to support flight tests at PMRF
- Initiate Target integration planning for flight testing
- Continue Test Planning and Range Operations for flight testing

FY 2006 Planned Program:

- Continue Flight Tests at WSMR and PMRF
- Perform Data Analysis on Flight Tests
- Complete PMRF range activation
- Continue planning for BQT
- Conduct LFT&E tests
- Complete L&TSE and range integration
- Continue target integration planning for flight testing
- Continue Test Planning and Range Operations for flight testing
- Continue planning Fire Unit #1 Operational Assessment
- Initiate planning for Element demonstrations

FY 2007 Planned Program:

- Conduct flight tests at PMRF
- Continue performing Data Analysis on Flight Tests
- Initiate component BQT efforts
- Continue LFT&E testing
- Continue target integration planning for flight testing
- Continue Test Planning and Range Operations for flight testing
- Continue target and range facility planning
- Continue planning Fire Unit 1 Operational Assessment
- Continue planning for Element demonstrations

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

	FY 2004	FY 2005	FY 2006	FY 2007
Sys Level Prog Mgmt	68,312	43,870	53,319	39,240
RDT&E Articles (Quantity)	0	0	0	0

The ramp up in FY06 restores work deferred to this timeframe due to the Pratt & Whitney explosions. These efforts include test missile hardware for flight and ground testing, targets and range operations to conduct 4 flight tests, Radar #2 fabrication/assembly/integration/test and component qualification testing. Also included is the associated accounting allocation of indirect costs against these efforts.

FY 2004 Accomplishments:

- Provided management, leadership, and planning for all Block 2008 activities
- Participated in Element Design Readiness Review
- Provided leadership and direction to program
- Provided salaries, travel, training, supplies, rental and project-wide support

FY 2005 Planned Accomplishments:

- Provide management, leadership, and planning for all Block 2008 activities
- Provide salaries, travel, training, supplies, rental and project-wide support
- Support Flight Test Program at White Sands Missile Range (WSMR)
- Continue to provide guidance and management to program

FY 2006 Planned Program:

- Provide management, leadership, and planning for all Block 2008 activities
- Provide salaries, travel, training, supplies, rental and project-wide support
- Support Flight Test Program at WSMR and Pacific Missile Range Facility (PMRF)
- Continue to provide guidance and management to program

FY 2007 Planned Program:

- Provide management, leadership, and planning for all Block 2008 activities
- Continue to support Flight Test Program at PMRF
- Continue to provide guidance and management to program
- Provide salaries, travel, training and project-wide support

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2004	FY 2005	FY 2006	FY 2007
Fire Unit #1	0	0	0	161,000
RDT&E Articles (Quantity)	0	0	0	0

FY 2007 Planned Program:

- Initiate the fabrication and assembly of Missiles, Radar, Launchers, and THAAD C2BMC and initial spares for the Block 2008 Fire Unit
- Provide Interim Contractor Support (ICS) Contract
- Develop Materiel Fielding Plan
- Conduct Fielding Staging Site Preparation
- Develop Materiel Release Documents
- Update all training materials
- Procure Government Furnished Equipment (GFE) to support Fire Unit
- Procure Battery Support Center (BSC) and Integrated Contract Support System (ICSS)
- Develop and procure of Tactical Active Leak Sensor System (ALSS)
- Develop Objective Instructional Facility
- Plan for System Integration Check-Out (SICO)/New Equipment Training (NET)
- Develop Automated Information System (AIS) for Automated Identification Technology (AIT)
- Establish New Materiel Introductory Team (NMIT)/NET Team
- Initiate buy of 24 Missiles, 3 Launchers, 1 THAAD C2BMC, and 1 Radar for a total of 29 RDT&E Articles

C. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

D. Acquisition Strategy

THAAD follows the capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The THAAD Block 2006/2008 program is already on contract with Lockheed Martin Space Systems Company (LMSSC), Sunnyvale, CA. The 103-month Cost Plus Award Fee (CPAF) contract was awarded effective August 4, 2000, and is 62% complete. In FY 2006 a Sole Source, CPAF/Cost Plus Incentive Fee (CPIF) 48-month Contract will be awarded to LMSSC for development upgrades to add THAAD capability to Launch on Remote, Remote Launchers and report non-threatening ballistic missiles. The Fire Unit #1 contracts are targeted to be awarded in FY 2007 and will consist of the following: (1) Sole Source, Indefinite Delivery, Indefinite Quantity (ID/IQ) Delivery Order contract to Raytheon for Radar hardware and (2) Sole Source, ID/IQ Delivery Order contract to LMSSC as the element integrator and to procure missile, launcher, C2BMC and Peculiar Support Equipment hardware. In addition, there will be a sole source Delivery Order Contract to LMSSC for Contractor Logistics Support for the Fire Unit targeted to be awarded in FY08. Block 2006/2008 development activities, as well as the acquisition of the Fire Unit, will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Missile										
Prime Contract	SS/CPAF	LMSSC/ CA, TX, AL, MA, NH, IL, FL & MD	314,638	315,464	1/2Q	363,327	1/2Q	182,631	1/2Q	1,176,060
Radar										
Prime Contract	SS/CPAF	LMSSC and Raytheon/ Huntsville, AL; Bedford, MA, & Texas	142,630	131,768	1/2Q	165,594	1/2Q	101,957	1/2Q	541,949
Launcher										
Prime Contract	SS/CPAF	LMSSC/ Huntsville, AL & Lufkin, TX	24,389	19,793	1/2Q	15,947	1/2Q	14,323	1/2Q	74,452
C2BMC										
Prime Contract	SS/CPAF	LMSSC and Raytheon/ Huntsville, AL	49,407	54,573	1/2Q	73,555	1/2Q	33,623	1/2Q	211,158
Integrated Logistics Support (ILS)										
Prime Contract	SS/CPAF	LMSSC/ Huntsville, AL	10,092	11,843	1/2Q	29,676	1/2Q	30,080	1/2Q	81,691
Weapon Sys Engr & Integ Team										
Prime Contract	SS/CPAF	LMSSC/ Sunnyvale, CA & Huntsville, AL	34,941	32,415	1/2Q	60,000	1/2Q	39,139	1/2Q	166,495
Test and Evaluation										

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Prime Contract	SS/CPAF	LMSSC/ Sunnyvale, CA; Huntsville, AL; NM & HI	22,169	30,798	1/2Q	49,407	1/2Q	42,549	1/2Q	144,923
Sys Level Prog Mgmt										
Prime Contract	SS/CPAF	LMSSC/ Sunnyvale, CA	38,609	20,498	1/2Q	29,784	1/2Q	17,929	1/2Q	106,820
Fire Unit #1										
Prime Contract	SS	LMSSC & Raytheon/ CA, TX, AL, MA, NH, IL, FL & MD	0	0	N/A	0	N/A	161,000	1/2Q	161,000
Subtotal Product Development			636,875	617,152		787,290		623,231		2,664,548

Remarks

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Missile										
SETA	C	Multiple to include BAE, TSI & L3/ Huntsville, AL & Salt Lake City, UT	4,638	5,303	1/2Q	4,418	1/2Q	5,043	1/2Q	19,402
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	7,955	6,292	1/2Q	10,221	1/2Q	10,615	1/2Q	35,083
MDA Program Support	C	MDA/ Arlington, VA	0	7,760	1/2Q	32,301	1/2Q	42,365	1/2Q	82,426
Radar										
SETA	C	Multiple to include Dynetics & GA Tech/ Huntsville, AL and GA	1,406	2,347	1/2Q	3,118	1/2Q	4,143	1/2Q	11,014
OGA	MIPR	Multiple to include CECOM, RDEC & SMDC/ Ft. Monmouth NJ and Huntsville, AL	2,805	3,095	1/2Q	3,759	1/2Q	3,909	1/2Q	13,568
MDA Program Support	C	MDA/ Arlington, VA	0	3,175	1/2Q	14,469	1/2Q	21,616	1/2Q	39,260
Launcher										
SETA	C/FFP	Dynetics/ Huntsville, AL	670	816	1/2Q	853	1/2Q	871	1/2Q	3,210

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
OGA	MIPR	RDEC & SMDC/ Huntsville, AL	479	1,266	1/2Q	1,359	1/2Q	1,413	1/2Q	4,517
MDA Program Support	C	MDA/ Arlington, VA	0	477	1/2Q	1,279	1/2Q	2,278	1/2Q	4,034
C2BMC										
SETA	C	Multiple to include CSC & Dynetics/ Silver Spring, MD & Huntsville, AL	1,251	633	1/2Q	499	1/2Q	515	1/2Q	2,898
OGA	MIPR	Multiple to include NRDEC, RDEC & SMDC/ Natick MA & Huntsville, AL	1,591	4,142	1/2Q	4,532	1/2Q	4,671	1/2Q	14,936
MDA Program Support	C	MDA/ Arlington, VA	0	1,315	1/2Q	6,289	1/2Q	6,389	1/2Q	13,993
Integrated Logistics Support (ILS)										
SETA	C	Multiple to include Dynetics, TSA & BAE/ Huntsville, AL & Rockville, MD	3,653	1,100	1/2Q	3,200	1/2Q	3,200	1/2Q	11,153
OGA	MIPR	Multiple to include IMMC & USAADASCH/ Huntsville, AL & Ft. Bliss	5,194	8,076	1/2Q	11,916	1/2Q	7,345	1/2Q	32,531
MDA Program Support	C	MDA/ Arlington, VA	0	285	1/2Q	2,018	1/2Q	3,925	1/2Q	6,228

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Weapon Sys Engr & Integ Team										
SETA	C	Multiple to include Dynetics, TSA and L3/ Huntsville, AL & Salt Lake City, UT	12,161	5,700	1/2Q	4,704	1/2Q	4,788	1/2Q	27,353
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	5,155	17,744	1/2Q	28,218	1/2Q	31,609	1/2Q	82,726
MDA Program Support	C	MDA/ Arlington, VA	0	781	1/2Q	4,645	1/2Q	5,773	1/2Q	11,199
Test and Evaluation										
OGA	MIPR	Multiple to include WSMR, PMRF, ATEC,RDEC & SMDC/ NM, HI, VA, & Huntsville, AL	3,893	26,273	1/2Q	47,524	1/2Q	62,382	1/2Q	140,072
MDA Program Support	C	MDA/ Arlington, VA	0	742	1/2Q	4,169	1/2Q	8,656	1/2Q	13,567
Sys Level Prog Mgmt										
SETA	C	Multiple to include Dynetics, BAE, & L3/ Huntsville, AL Rockville, MD & Salt Lake City, UT	13,654	4,197	1/2Q	3,627	1/2Q	3,948	1/2Q	25,426

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
MDA Program Support	C	MDA/ Arlington, VA	0	494	1/2Q	2,581	1/2Q	4,078	1/2Q	7,153
Subtotal Support Costs			64,505	102,013		195,699		239,532		601,749

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Test and Evaluation										
Government Test Planning/Targets	MIPR	Multiple such WSMR, PMRF & SMDC/ NM, HI & Huntsville, AL	12,409	21,831	1/2Q	45,766	1/2Q	54,952	1/2Q	134,958
Subtotal Test and Evaluation			12,409	21,831		45,766		54,952		134,958

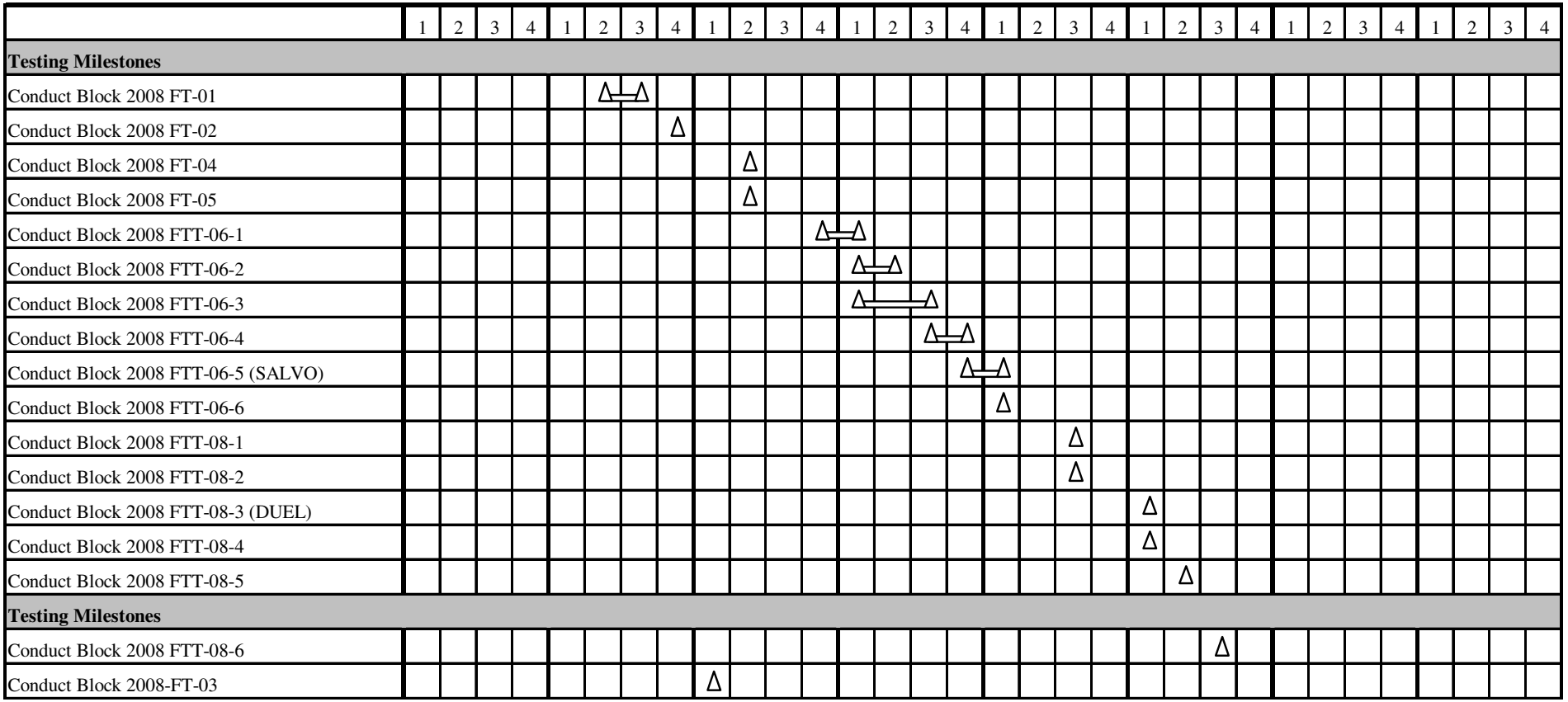
Remarks

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Sys Level Prog Mgmt										
Internal Operating Budget	MIPR	THAAD/ Huntsville, AL	4,100	18,681	1/2Q	17,327	1/2Q	13,285	1/2Q	53,393
Subtotal Management Services			4,100	18,681		17,327		13,285		53,393
Remarks										
Project Total Cost			717,889	759,677		1,046,082		931,000		3,454,648
Remarks										

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**



Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BLOCK 2008																																
Element Design Readiness Review (DRR)	▲																															
Radar #1 Delivered to WSMR		▲																														
FT-01 Missile S/W Final Release Integrated at SIL				▲																												
Soldier-in-the-Loop Training Course 1				▲																												
Active Leak Sensor Prototype Delivered to Troy, AL				▲																												
FT-01 Missile Delivered to WSMR						△																										
C2BMC Tactical Station Grp (TSG) Delivered to WSMR						△																										
Launcher S/W B3 Final Release Integrated at SIL						△																										
Launcher Delivered to WSMR						△																										
Radar #1 Integration and Test Complete						△																										
Radar B4.2 S/W Design Readiness Review (DRR)						△																										
FT-02 Missile S/W Final Release Integrated at SIL						△																										
Radar S/W B4.1V Final Release Integrated at SIL						△																										
C2BMC S/W B4 Final Release Integrated at SIL							△																									
FT-02 Missile Delivered to WSMR							△																									
C2BMC B5 S/W Design Readiness Review (DRR)								△																								
Radar S/W B4.1 Final Release Integrated at SIL								△																								

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BLOCK 2008																																
FT-03 Missile Delivered to WSMR								Δ																								
Soldier-in-the-Loop Training Course 2								Δ																								
FT-04 Missile Delivered to WSMR									Δ																							
Pacific Missile Range Facility Activation										Δ																						
FT-05 Missile Delivered to Range										Δ																						
FTT-06-1 Missile Delivered to Range											Δ																					
FTT-06-2 Missile Delivered to Range												Δ																				
FTT-06-3 Missile Delivered to Range													Δ																			
Radar B4.2 S/W Final Release Integrated at SIL														Δ																		
FTT-06-4 Missile Delivered to Range														Δ																		
Radar #2 Delivered To WSMR for Integration															Δ																	
FTT-06-5 Missiles (2) Delivered to range															Δ																	
Insensitive Munitions/Hazards Testing																Δ	Δ															
Missile S/W B7.0 Final Release Integrated at SIL																Δ																
Launcher B4 S/W Final Release Integrated at SIL																Δ																
Radar #2 Integration Complete at WSMR																Δ																
C2BMC B5 S/W Final Release Integrated at SIL																Δ																
FTT-06-6 Missile Delivered to Range																Δ																
FTT-08-1 Missile Delivered																	Δ															

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BLOCK 2008																																
Radar #2 E3 Testing Complete																	Δ															
Deliver Prime Power Unit (PPU) #1																	Δ															
FTT-08-2 Missile Delivered																		Δ														
FTT-08-3 Missiles (2) Delivered to Range																		Δ														
Radar Data Collection Mission #2																		Δ														
Radar #2 Available for Block Qualification Test																		Δ														
FTT-08-4 Missile Delivered																			Δ													
FTT-08-5 Missile Delivered																			Δ													
FTT-08-6 Missile Delivered																			Δ													
Radar Prime Power Unit #2 Delivered																				Δ												
Radar B4.2 Final Maintenance Release																					Δ											
Element Demonstrations																						Δ	—	Δ								
Element Weapon System Characterization																							Δ									

Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Testing Milestones								
Conduct Block 2008 FT-01		2Q-3Q						
Conduct Block 2008 FT-02		4Q						
Conduct Block 2008 FT-04			2Q					
Conduct Block 2008 FT-05			2Q					
Conduct Block 2008 FTT-06-1			4Q	1Q				
Conduct Block 2008 FTT-06-2				1Q-2Q				
Conduct Block 2008 FTT-06-3				1Q-3Q				
Conduct Block 2008 FTT-06-4				3Q-4Q				
Conduct Block 2008 FTT-06-5 (SALVO)				4Q	1Q			
Conduct Block 2008 FTT-06-6					1Q			
Conduct Block 2008 FTT-08-1					3Q			
Conduct Block 2008 FTT-08-2					3Q			
Conduct Block 2008 FTT-08-3 (DUEL)						1Q		
Conduct Block 2008 FTT-08-4						1Q		
Conduct Block 2008 FTT-08-5						2Q		
Conduct Block 2008 FTT-08-6						3Q		
Conduct Block 2008-FT-03			1Q					
BLOCK 2008								
Element Design Readiness Review (DRR)	1Q							
Radar #1 Delivered to WSMR	2Q							
WSMR Activation Complete	2Q							
L&TSE #1 Integrated at SIL	3Q							
Range Safety Qual Test Complete	3Q							
FT-01 Missile S/W Engr Release Integrated at SIL	3Q							
FT-01 Missile S/W Final Release Integrated at SIL	4Q							
Radar S/W B4.1 Engr Release Integrated at SIL	4Q							
C2BMC S/W B4 Engr Release Integrated at SIL	4Q							
Soldier-in-the-Loop Training Course 1	4Q							
Active Leak Sensor Prototype Delivered to Troy, AL	4Q							
Launcher S/W B3 Eng Release Integrated at SIL		1Q						

Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FT-01 Missile Delivered to WSMR		2Q						
Kill Vehicle (KV) Flight Qual Tests		2Q						
Missile Environments Phase I		2Q						
C2BMC Tactical Station Grp (TSG) Delivered to WSMR		2Q						
Launcher S/W B3 Final Release Integrated at SIL		2Q						
FT-02 Missile S/W Engr Release Integrated at SIL		1Q						
Launcher Delivered to WSMR		2Q						
Radar #1 Integration and Test Complete		2Q						
Radar B4.2 S/W Design Readiness Review (DRR)		2Q						
FT-02 Missile S/W Final Release Integrated at SIL		2Q						
Radar S/W B4.1V Final Release Integrated at SIL		2Q						
C2BMC S/W B4 Final Release Integrated at SIL		3Q						
FT-02 Missile Delivered to WSMR		3Q						
C2BMC B5 S/W Design Readiness Review (DRR)		4Q						
Radar S/W B4.1 Final Release Integrated at SIL		4Q						
FT-03 Missile Delivered to WSMR		4Q						
Soldier-in-the-Loop Training Course 2		4Q						
FT-04 Missile Delivered to WSMR			1Q					
Pacific Missile Range Facility Activation			2Q					
FT-05 Missile Delivered to Range			2Q					
FTT-06-1 Missile Delivered to Range			3Q					
FTT-06-2 Missile Delivered to Range			4Q					
FTT-06-3 Missile Delivered to Range				1Q				
Radar B4.2 S/W Engr Release Integrated at SIL				1Q				
Radar B4.2 S/W Final Release Integrated at SIL				2Q				
FTT-06-4 Missile Delivered to Range				2Q				
C2BMC B5 S/W Engr Release Integrated at SIL				2Q				
C2BMC Block Qualification Test (BQT)				2Q-4Q	1Q-4Q	1Q		
Launcher Block Qualification Test (BQT)				2Q-4Q	1Q-4Q	1Q		
Radar #2 Delivered To WSMR for Integration				3Q				

Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Missile S/W B7.0 Engr Release Integrated at SIL				3Q				
Launcher B4 S/W Engr Release Integrated at SIL				3Q				
FTT-06-5 Missiles (2) Delivered to range				3Q				
Insensitive Munitions/Hazards Testing				4Q	1Q-2Q			
Missile S/W B7.0 Final Release Integrated at SIL				4Q				
Launcher B4 S/W Final Release Integrated at SIL				4Q				
Radar #2 Integration Complete at WSMR				4Q				
C2BMC B5 S/W Final Release Integrated at SIL				4Q				
FTT-06-6 Missile Delivered to Range				4Q				
Missile Block Qualification Test				4Q	1Q-2Q			
FTT-08-1 Missile Delivered					1Q			
Radar #2 E3 Testing Complete					1Q			
Deliver Prime Power Unit (PPU) #1					1Q			
FTT-08-2 Missile Delivered					2Q			
FTT-08-3 Missiles (2) Delivered to Range					2Q			
Radar Data Collection Mission #2					2Q			
Radar #2 Available for Block Qualification Test					2Q			
Radar Block Qualification Test					2Q-4Q	1Q-3Q		
FTT-08-4 Missile Delivered					3Q			
FTT-08-5 Missile Delivered					3Q			
FTT-08-6 Missile Delivered					3Q			
Radar Prime Power Unit #2 Delivered					4Q			
Radar B4.2 Final Maintenance Release						1Q		
Element Demonstrations						2Q-4Q		
Element Weapon System Characterization						3Q		

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

COST ($ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0007 Terminal High Altitude Area Defense (THAAD) Block 2010	0	0	0	0	0	168,000	635,068	394,998
RDT&E Articles Qty	0	0	0	0	0	0	7	22

Note:
Implementation of the new BMDS baseline approach directed the reallocation of funding among Blocks. Project 0807 (FY09 - FY10) was realigned and collapsed into Project 0007.

A. Mission Description and Budget Item Justification

The Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The Terminal Defense Elements provide the final opportunity to engage all ranges of ballistic missiles not engaged or destroyed in the boost or mid-course phase of trajectory. Block 2010 THAAD further enhances the MDA TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course and terminal phases of their trajectory. The Block 2010 THAAD highly mobile capability provides BMDS the ability to defend against all ranges of ballistic missiles and asymmetric threat; and protects U.S. and allied armed forces, broadly dispersed assets and population centers and selected U.S. sites (Homeland Defense) against ballistic missile attacks. The Block 2010 THAAD Element provides coordinated engagements with BMDS via the BMDS Command and Control Battle Management Communications (C2BMC) network. THAAD, in conjunction with the fielded Patriot System, provides the Terminal Defense layer. Five major components (missiles, launchers, radars, THAAD Command C2BMC, and THAAD-specific support equipment) will be integrated into the THAAD element and BMDS. THAAD follows the MDA's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The program addresses MDA System Engineering and Integration gap analysis of Engagement Sequence Groups (ESGs), identifying and documenting both element and component capabilities.

Block 2010: Block 2010 is the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This block continues the concept of a rapidly deployable configuration to support the TDS mission as well as supporting the strategic surveillance, tracking and fire control missions through Block 2010 enhanced sensor and interceptor capability. Block 2010 leverages Block 2008 functionality by initiating development of kill vehicle and booster improvements that significantly increase performance of the endo and exo intercept against long range threats. In short, Block 2010 provides the initiation of the next generation THAAD capability that provides rapidly mobile components to extend and deepen BMDS capability against all ballistic missile threats. Block 2010 adds the THAAD Interceptor engage on remote sensor ESG. THAAD Fire Unit #2 consists of 24 missiles, 3 launchers, 1 C2BMC and 1 radar.

RDT&E Articles for Fire Unit #2:

FY 2009 (Fire Unit Buy Schedule): 24 Missiles; 3 Launchers; 1 C2BMC (2 TSGs); 1 Radar for a total of 29 RDT&E Articles
FY 2010 (Fire Unit Delivery Schedule): 3 Missiles; 3 Launchers and 1 C2BMC (2 TSGs) for a total of 7 articles
FY 2011 (Fire Unit Delivery Schedule): 21 Missiles and 1 Radar for a total of 22 articles

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Funding in this Project is not programmed until FY 2009.	0	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

C. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

D. Acquisition Strategy

THAAD follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. Block 2010 development activities could be used to provide a significant capability to protect deployed U.S. and allied forces, dispersed assets, specified population centers, or wide areas of the U.S. The Block 2010 Acquisition Strategy is still being developed. The Fire Unit #2 contracts are targeted to be awarded in FY 2009 and will consist of the following: (1) Sole Source, Indefinite Delivery/Indefinite Quantity (ID/IQ) Delivery Order contract to Raytheon for Radar hardware and (2) Sole Source, ID/IQ Delivery Order contract to LMSSC as the element integrator and to procure missile, launcher, C2BMC and Peculiar Support Equipment hardware. In addition, there will be a sole source Delivery Order Contract to LMSSC for Contractor Logistics Support for the Fire Unit Targeted to be awarded in FY08. Block 2010 development activities, as well as the acquisition of the Fire Unit, will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Program Milestones																																
Block 10/12 Authority to Proceed (ATP)																									Δ							

Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Program Milestones								
Block 10/12 Authority to Proceed (ATP)							1Q	
Component PDRs Complete							2Q	
Element Preliminary Design Review (PDR)							3Q	

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0401 Israeli Arrow Program	135,644	152,048	77,616	79,494	77,539	77,723	79,340	80,987
RDT&E Articles Qty	45	44	8	8	7	0	0	0

A. Mission Description and Budget Item Justification

This project provides funding for the Arrow system development, to include the Arrow System Improvement Program (ASIP), testing of the Arrow Weapon System in the U.S., enhancement of Arrow interoperability with U.S. ballistic missile defense systems, Israeli Systems Architecture and Integration (ISA&I) studies to assess Arrow's effectiveness against emerging threats, and Israeli Test Bed (ITB) experiments to evaluate human-in-the-loop battle management and command, control, and communications. The United States derives considerable benefits from its participation in these projects. The presence of a ballistic missile defense system in Israel developed under this project helps ensure U.S. freedom of action in future contingencies and provides protection against ballistic missile attacks to U.S. forces deployed to the region. The cooperative effort also provides risk reduction and alternative technologies for U.S. ballistic missile defense programs as well as phenomenology and kill assessment data. The ASIP effort will enhance the performance of the Arrow Weapon System (AWS) to defeat longer-range and more robust Tactical Ballistic Missile (TBM) threats expected to be introduced in the Middle East in the near future. The ASIP also includes baseline testing of the AWS at a U.S. test range against today's existing TBM threats as well as testing of the enhanced AWS against longer range threats. The ITB and ISA&I efforts will continue to support AWS and ASIP development as well as to define future missile defense architectures to maintain pace with emerging threats.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Arrow System Improvement Program (ASIP)	49,617	56,632	56,213	58,021
RDT&E Articles (Quantity)	7	1	1	1

FY 2004 Accomplishments:

RDT&E Articles: (Seven Missiles Total) Three Block 3 Arrow test missiles for intercept testing, and two liquid fuel test missile targets and two air-launched short-range target missiles for U.S. Arrow testing.

- Conducted Arrow developmental flight test in Israel in preparation for intercept testing in the U.S. against representative regional Tactical Ballistic Missile (TBM) threats.
- Conducted developmental flight test in Israel. Continue ASIP Phase II to develop and test technologies to improve Arrow Weapon System performance to defend Israel from emerging TBM threats.
- Continued enhancing Arrow interoperability.
- Obtained Joint Interoperability Test Command certification of the IMDA interoperability enhancements.

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2005 Planned Accomplishments:

RDT&E Articles: (One Missiles Total) One Block 3 Arrow test missile for intercept testing.

- Continue ASIP Phase II to develop and test technologies to improve Arrow Weapon System performance to defend Israel for emerging TBM threats.
- Conduct Arrow flight test in Israel.
- Continue enhancing Arrow interoperability development and validation to include engagement coordination.

FY 2006 Planned Program:

RDT&E Articles: (One Missile Total) One Block 3 Arrow test missile for intercept testing.

- Complete ASIP Phase II to develop activities to improve Arrow Weapon System performance to defend Israel for emerging TBM threats.
- Conduct Arrow flight test in Israel.
- Continue enhancing Arrow interoperability development and validation to include engagement coordination.

FY 2007 Planned Program:

RDT&E Articles: (One Missile Total) One Block 3.5 Arrow II test missile for intercept testing.

- Begin Verification and validation, Phase III of the ASIP program.
- Conduct Block 3.5 Arrow flight tests in Israel.

	FY 2004	FY 2005	FY 2006	FY 2007
Arrow Enhanced Component Production	4,680	0	0	0
RDT&E Articles (Quantity)	1	0	0	0

FY 2004 Accomplishments:

RDT&E Articles: One proof of concept co-produced Arrow II missile.

- Complete the development of Arrow production capability to produce Arrow components in the U.S. to accelerate Israeli acquisition of Arrow interceptor missiles.
- Provide components to Israel for final interceptor integration.
- Produce sufficient component quantities in the U.S. to qualify production processes and transition Arrow co-production of the Arrow Missile Production Program (AMPP).

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

	FY 2004	FY 2005	FY 2006	FY 2007
Israeli Test Bed (ITB)	3,535	3,535	3,535	3,535
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- Conduct ITB experiments to support development of centralized battle management. Assess Arrow interoperability between Israeli and U.S. missile defense systems.
- Provide support to U.S. European Command and Israeli Air Force (EUCOM/IAF) to conduct ITB experiments.
- Support the addition of the operational AWS and block upgrades into the combined Operations Plan (OPLAN)
- Combined Standard Operating Procedures (CSOP).
- Conduct experiments of planned Arrow block upgrades to the AWS and assess their impacts on EUCOM/IAF combined operations.

FY 2005 Planned Accomplishments:

- Conduct ITB experiments to support development of centralized battle management.
- Evaluate ASIP performance specifications against future threats and assess Arrow enhanced interoperability between Israeli and U.S. missile defense systems.
- Support EUCOM/IAF revisions to the combined OPLAN and CSOP.
- Conduct experiments of planned Arrow block upgrades to the AWS and assess their impacts on EUCOM/IAF combined operations.

FY 2006 Planned Program:

- Conduct ITB experiments to support development of centralized battle management.
- Evaluate ASIP performance specifications against future threats and assess Arrow enhanced interoperability between Israeli and U.S. missile defense systems.
- Support EUCOM/IAF revisions to the combined OPLAN and CSOP.
- Conduct experiments of planned Arrow block upgrades to the AWS and assess their impacts on EUCOM/IAF combined operations.

FY 2007 Planned Program:

- Conduct ITB experiments to support development of centralized battle management.
- Evaluate ASIP performance specifications against future threats and assess Arrow enhanced interoperability between Israeli and U.S. missile defense systems.
- Support EUCOM/IAF revisions to the combined OPLAN and CSOP.
- Conduct experiments of planned Arrow block upgrades to the AWS and assess their impacts on EUCOM/IAF combined operations.

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2004	FY 2005	FY 2006	FY 2007
Israeli Systems Architecture and Integration (ISA&I)	2,010	2,041	2,080	2,147
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- Develop initial Israeli Missile Defense System (IMDS) architecture and system level design.

FY 2005 Planned Accomplishments:

- Assess IMDS performance against emerging regional TBM threats.
- Refine growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel.
- Evaluate Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on contributing to future Israeli missile defense architectures.

FY 2006 Planned Program:

- Assess IMDS performance against emerging regional TBM threats.
- Refine growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel.
- Evaluate Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on contributing to future Israeli missile defense architectures.

FY 2007 Planned Program:

- Assess IMDS performance against emerging regional TBM threats.
- Refine growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel.
- Evaluate Israeli architecture studies to assess near-term U.S. missile defense systems and their impact on contributing to future Israeli missile defense architectures.

	FY 2004	FY 2005	FY 2006	FY 2007
Program Support	862	840	788	791
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- Develop and maintain ASIP and co-production security plans and classification guides. Support interoperability assessment and risk reduction testing.
- Manage and support ITB modifications and experiments.
- Complete documentation of background/foreground data rights for ASIP, Arrow co-production, and update the ITB Master Technology List.
- Maintain security plans and classification guides.

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2005 Planned Accomplishments:

- Continue documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB.
- Maintain security plans and classification guides.
- Manage and support ITB modifications and experiments. Support Israeli and U.S. Missile Defense System integration and related test activities.

FY 2006 Planned Program:

- Continue documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB.
- Maintain security plans and classification guides.
- Manage and support ITB modifications and experiments. Support Israeli and U.S. Missile Defense System integration and related test activities. FY 2007:
- Continue documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB.
- Maintain security plans and classification guides.
- Manage and support ITB modifications and experiments. Support Israeli and U.S. Missile Defense System integration and related test activities.

FY 2007 Planned Program:

- Continue documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB.
- Maintain security plans and classification guides.
- Manage and support ITB modifications and experiments. Support Israeli and U.S. Missile Defense System integration and related test activities.

	FY 2004	FY 2005	FY 2006	FY 2007
Arrow Missile Production	74,940	89,000	15,000	15,000
RDT&E Articles (Quantity)	37	43	7	7

FY 2004 Accomplishments:

RDT&E Articles: Thirty seven (37) Arrow II missiles.

- Cooperatively produce Arrow missiles to meet Israel's defense requirements.
- The cooperative production program will consist of the manufacture of certain Arrow components in the U.S. with other components manufactured in Israel.
- Missile final assembly will take place in Israel.

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

FY 2005 Planned Accomplishments:

RDT&E Articles: Forty three Arrow II missiles.

- Cooperatively produce Arrow missiles to meet Israel's defense requirements.
- The cooperative production program will consist of the manufacture of certain Arrow components in the U.S. with other components manufactured in Israel.
- Missile final assembly will take place in Israel.

FY 2006 Planned Program:

RDT&E Articles: Seven Arrow II missiles.

- Cooperatively produce Arrow missiles to meet Israel's defense requirements.
- The cooperative production program will consist of the manufacture of certain Arrow components in the U.S. with other components manufactured in Israel.
- Missile final assembly will take place in Israel.

FY 2007 Planned Program:

RDT&E Articles: Seven Arrow II missiles.

- Cooperatively produce Arrow missiles to meet Israel's defense requirements.
- The cooperative production program will consist of the manufacture of certain Arrow components in the U.S. with other components manufactured in Israel.
- Missile final assembly will take place in Israel.

C. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754

D. Acquisition Strategy

ASIP - Israel Ministry of Defense (IMoD) contracts on behalf of U.S. government to IAI and other ASIP contractors. MDA Targets Office contracts for production and instrumentation of targets for U.S. flight testing.

Arrow Enhanced Components Production - IMoD contracts on behalf of U.S. government to IAI. IAI subcontracts to Boeing for development of U.S. production capability.
Arrow Missile Production - IMoD contracts on behalf of U.S. government to IAI. IAI subcontracts to Boeing for manufacture of U.S. components. IAI manufactures Israeli components and performs final assembly.

Israeli Test Bed - SMDC contracts to Tadiran.

Israeli System Architecture and Integration - MDA contracts to WALES, Ltd.

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

I. Product Development Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Arrow System Improvement Program (ASIP)										
Arrow System Improvement Program (ASIP)	FFP	IAI/ Israel	151,617	56,632	1Q	56,213	1Q	58,021	1Q	322,483
Arrow Enhanced Component Production										
Arrow Enhanced Component Production	FFP	Boeing/IAI/ Ala/Israel	43,335	0	N/A	0	N/A	0	N/A	43,335
Israeli Test Bed (ITB)										
Israeli Test Bed (ITB)	FFP	Tadiran/ Israel	9,135	3,535	1Q	3,535	1Q	3,535	1Q	19,740
Israeli Systems Architecture and Integration (ISA&I)										
Israeli Systems Architecture and Integration (ISA&I)	FFP	Wales, Ltd/ Israel	5,421	2,041	1Q	2,080	1Q	2,147	1Q	11,689
Arrow Missile Production										
Arrow Missile Production	FFP	Boeing/IAI/ Ala/Israel	0	89,000	2Q	15,000	2Q	15,000	2Q	119,000
Subtotal Product Development			209,508	151,208		76,828		78,703		516,247

Remarks

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

II. Support Costs Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Program Support										
Program Support	FFP	Various/ Ala/Va	5,862	840	1Q	788	1Q	791	1Q	8,281
Subtotal Support Costs			5,862	840		788		791		8,281

Remarks

III. Test and Evaluation Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation										

Remarks

IV. Management Services Cost ($ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award/ Oblg Date	FY 2006 Cost	FY 2006 Award/ Oblg Date	FY 2007 Cost	FY 2007 Award/ Oblg Date	Total Cost
Subtotal Management Services										

Remarks

Project Total Cost			215,370	152,048		77,616		79,494		524,528

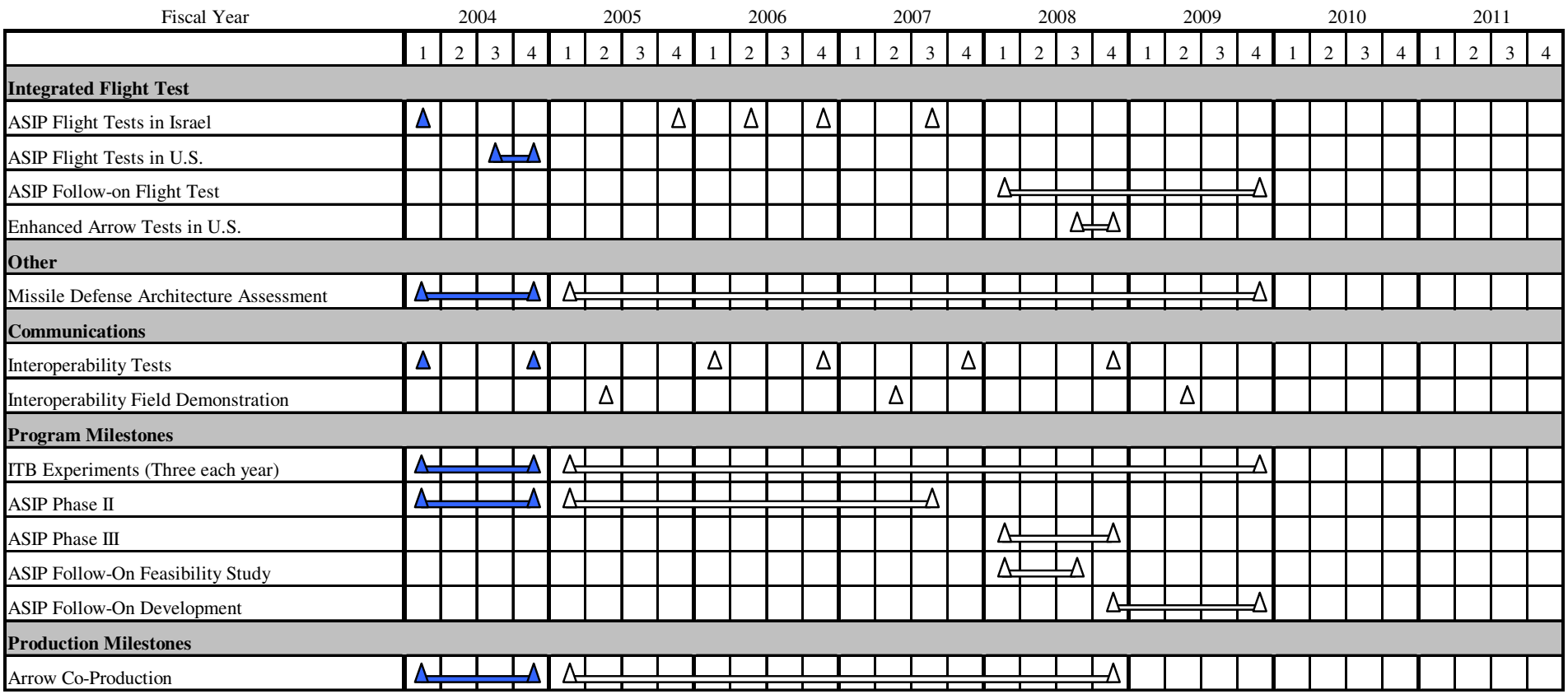
Remarks

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile

Date
February 2005

APPROPRIATION/BUDGET ACTIVITY
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)

R-1 NOMENCLATURE
0603881C Ballistic Missile Defense Terminal Defense Segment



Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Integrated Flight Test								
ASIP Flight Tests in Israel	1Q	4Q	2Q,4Q	3Q				
ASIP Flight Tests in U.S.	3Q-4Q							
ASIP Follow-on Flight Test					1Q-4Q	1Q-4Q		
Enhanced Arrow Tests in U.S.					3Q-4Q			
Other								
Missile Defense Architecture Assessment	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Communications								
Interoperability Tests	1Q,4Q		1Q,4Q	4Q	4Q			
Interoperability Field Demonstration		2Q		2Q		2Q		
Program Milestones								
ITB Experiments (Three each year)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
ASIP Phase II	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q				
ASIP Phase III					1Q-4Q			
ASIP Follow-On Feasibility Study					1Q-3Q			
ASIP Follow-On Development					4Q	1Q-4Q		
Production Milestones								
Arrow Co-Production	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: **RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)**	R-1 NOMENCLATURE: **0603881C Ballistic Missile Defense Terminal Defense Segment**

COST ($ in Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0602 Program-Wide Support	7,261	16,663	19,912	24,182	22,728	18,620	16,874	9,527
RDT&E Articles Qty	0	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common support functions across the entire program such as strategic planning, program integration, cost estimating, contracting, and financial management to include preparation of financial statements, reimbursement of financial services provided by DFAS, internal review and audit, earned-value management, and program assessment. Includes costs for both government civilians performing these functions as well as support contractors providing government staff augmentation in these areas. Applies to costs at the MDA HQ as well as its Executing Agents in the Services: Army Space and Missile Defense Command, Army PEO Space and Missile Defense, Office of Naval Research, and various Air Force laboratory and acquisition activities. Other costs include physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses at the various MDA Executing Agent locations, which at the MDA HQ are generally funded from the Management Headquarters Program Element (0901598C). Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuation on a limited number of foreign contracts.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Civilian Salaries and Support	7,261	16,663	19,912	24,182
RDT&E Articles (Quantity)	0	0	0	0

See Section A: Mission Description and Budget Item Justification

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date: February 2005
APPROPRIATION/BUDGET ACTIVITY: RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE: 0603881C Ballistic Missile Defense Terminal Defense Segment

C. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Cost
PE 0603175C Ballistic Missile Defense Technology	226,765	231,145	136,241	184,877	197,229	205,191	212,435	218,763	1,612,646
PE 0603879C Advanced Concepts, Evaluations and Systems	132,701	159,878	0	0	0	0	0	0	292,579
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	860,794	928,388	1,143,610	1,034,676	879,674	617,319	731,282	485,512	6,681,255
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	3,731,708	4,521,019	3,266,196	3,945,991	3,650,848	3,315,513	3,183,622	2,545,882	28,160,779
PE 0603883C Ballistic Missile Defense Boost Defense Segment	475,911	476,179	483,863	648,728	620,793	690,807	811,430	1,183,182	5,390,893
PE 0603884C Ballistic Missile Defense Sensors	417,814	577,297	529,829	995,711	1,214,008	1,186,134	1,069,208	1,018,614	7,008,615
PE 0603886C Ballistic Missile Defense System Interceptors	114,669	279,815	229,658	444,900	677,243	1,137,337	1,468,827	1,717,507	6,069,956
PE 0603888C Ballistic Missile Defense Test and Targets	616,773	720,818	622,357	684,170	608,282	643,119	661,362	670,092	5,226,973
PE 0603889C Ballistic Missile Defense Products	309,949	383,830	455,152	509,982	509,161	516,599	516,017	515,729	3,716,419
PE 0603890C Ballistic Missile Defense System Core	449,747	399,829	447,006	538,442	532,412	530,934	520,679	531,832	3,950,881
PE 0603891C Special Programs - MDA	0	0	349,522	482,903	826,173	1,097,252	1,015,198	1,244,072	5,015,120
PE 0605502C Small Business Innovative Research - MDA	146,030	0	0	0	0	0	0	0	146,030
PE 0901585C Pentagon Reservation	16,251	13,761	17,386	15,586	6,058	6,376	4,490	4,725	84,633
PE 0901598C Management Headquarters - MDA	92,100	113,777	99,327	95,443	98,984	98,728	81,492	81,760	761,611
Air Force – Other Procurement	0	0	2,400	1,453	11,279	386	17,710	25,709	58,937
Air Force – Operations and Maintenance	0	17,600	7,964	11,712	33,830	33,080	34,119	35,398	173,703
Air Force – Military Personnel	0	0	3,628	7,640	8,332	8,535	8,826	9,129	46,090
Army – Operations and Maintenance	37,600	49,597	66,974	68,246	69,809	71,472	73,325	75,230	512,253
Army National Guard – Operations and Maintenance	0	0	155	151	150	154	164	167	941
Army National Guard – Military Personnel	21,000	21,000	17,648	24,432	24,952	25,591	25,591	25,591	185,805
Navy – Operations and Maintenance	0	11,300	12,900	24,100	24,400	24,600	23,300	23,700	144,300
PAC-3/MEADS – RDT&E	433,728	344,978	304,973	336,959	465,395	521,791	522,418	502,961	3,433,203
PAC-3/MEADS – Missile Procurement	841,964	574,972	581,924	578,579	660,584	616,020	509,032	738,679	5,101,754