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Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification	Date February 2008
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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	1,082,454	1,045,276	1,019,073	795,659	719,847	548,283	439,752
0907 Terminal High Altitude Area Defense (THAAD) Block 2008	913,109	0	0	0	0	0	0
0007 Terminal High Altitude Area Defense (THAAD) Block 2010	20,020	0	0	0	0	0	0
BX07 Terminal High Altitude Area Defense (THAAD) Block 2.0	0	865,916	843,103	306,918	82,813	7,761	0
EX07 Terminal High Altitude Area Defense (THAAD) Block 5.0	0	0	0	353,415	479,115	375,362	263,803
XX07 Terminal High Altitude Area Defense (THAAD) Sustainment	0	1,148	21,796	29,591	58,021	67,516	79,815
0401 Israeli Arrow Program	129,902	0	0	0	0	0	0
WX26 Israeli ARROW Program	0	117,942	74,342	77,607	78,920	81,318	82,617
WX34 Short Range Ballistic Missile Defense	0	36,541	44,895	0	0	0	0
0806 PAC-3 Block 2006	2,574	0	0	0	0	0	0
WX06 PAC-3	0	975	10,500	0	0	0	0
0602 Program-Wide Support	16,849	0	0	0	0	0	0
ZX40 Program-Wide Support	0	22,754	24,437	28,128	20,978	16,326	13,517
Amount Included in PE 0904903D				-158,996	-140,766	-334,547	-316,254
Total PE Cost	1,082,454	1,045,276	1,019,073	636,663	579,081	213,736	123,498

Note: In accordance with the implementation of the new Missile Defense Agency (MDA) Block Structure, funding in the following Projects for FY08-13 have transferred: Project 0907 to Projects BX07 and XX07; Project 0007 to Projects BX07 and XX07; Project R107 was deleted and transferred to Projects EX07 and XX07; Project 0401 to Project WX26 and WX34; and Project 0806 to Project WX06.

A. Mission Description and Budget Item Justification

A.1 System Element Description

As part of the total Ballistic Missile Defense System (BMDS), the Terminal Defense Segment (TDS) Program Element (PE) funds the terminal-related element portions of Block 2.0 (formerly Block 2008), Block 5.0 (formerly Block 2010), Sustainment, and other Terminal-related mission area investment activities. The TDS elements and activities include Terminal High Altitude Area Defense (THAAD), the Israeli Cooperative Programs and the PATRIOT Advanced Capability-3 (PAC-3). The BMDS elements in terminal defense pursue development and selective upgrades of interceptor defense capabilities that engage short to medium-range ballistic missiles in the late mid-course and terminal phase of their trajectory. As part of the integrated, layered BMDS, 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-course of trajectory. The THAAD element enhances the BMDS by providing rapidly

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<p>deployable ground-based interceptor defense components that deepen, complement, and extend the BMDS battlespace and capability to engage and negate ballistic missiles and asymmetric threats in both the late mid-course (outside the atmosphere) and terminal phase (inside the atmosphere) of their trajectory, making countermeasures difficult and significantly mitigates Weapons of Mass Destruction (WMD). This adds significant capability to the BMDS as the threat missiles transition from the mid-course to terminal phase.</p> <p>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.</p> <p>Five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars, THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) will be integrated into the THAAD element and BMDS. The THAAD interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. Its kill vehicle possesses a divert and attitude control system and an infrared seeker used in destroying its target through hit-to-kill technology. The THAAD Launcher consists of a U.S. Army M1120 Heavy Expanded Mobility Tactical Truck-Load Handling System variant that transports an integrated interceptor round pallet and supports and secures eight ready-to-launch interceptors. The AN/TPY-2 Radar is an X-Band, solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The AN/TPY-2 Radar uses fence, volume, and cued search modes and provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The AN/TPY-2 Radar hardware is a transportable system composed of the antenna equipment unit, electronics equipment unit, cooling equipment unit, and the prime power unit. The TFCC is composed of the Tactical Operations Station, the Launch Control Station, and the Station Support Group. These three components together are called the Tactical Station Group (TSG). A TFCC includes two TSGs. The TFCC provides the planning, control, coordination, execution, and communications necessary to fulfill the THAAD mission in a coherent and fully integrated fashion. It is interoperable with external air and interceptor defense and intelligence systems and agencies integrated into the BMDS.</p> <p>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.</p> <p>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, coproduction of the interceptor and the enhancement of Arrow's interoperability with U.S. ballistic missile defense systems (BMDS) via a</p>		

UNCLASSIFIED

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<p>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. Finally, a the next phase of developing the Arrow Weapon System is being studied to provide Israeli with an indigenous upper-tier system.</p> <p>A new joint cooperative program with Israel is the David's Sling Weapon System (DSWS) for Short Range Ballistic Missile Defense (SRBMD). This system is designed to counter short range rockets, cruise missiles and serve as a low-tier to the Arrow Weapon System. This system is being designed and developed as a Joint system to meet both Israeli and U.S. requirements.</p> <p><u>A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)</u></p> <p>The THAAD element contributes to the BMDS by providing the engagement sequence identified as THAAD Interceptor Engage on AN/TPY-2 (THAAD Mode) Mod 1 (Cobra Dane, UEWR, SBX). The THAAD Interceptor's capability engages a threat ballistic missile using the radar with the fire unit and a cue from other BMDS sensors, such as the Cobra Dane sensor, an Unimproved Early Warning Radar (UEWR), or the Sea Based X-band Radar. When integrated into the BMDS with the BMDS Command Control/Battle Management Communications (C2BMC), AEGIS BMD and PATRIOT Systems, the rapidly deployable THAAD element improves the BMDS overall effectiveness by engaging threat ballistic missiles in the late mid-course and terminal phase of their trajectory.</p> <p>Blocks 2008, 2.0 and Sustainment: THAAD spiral development began with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats inside and outside the atmosphere. Development efforts laid a foundation for THAAD Interceptor Engage on the AN/TPY-2 (THAAD Mode) Radar Engagement Sequence Group (ESG) capability. This initial phase also provided the capability for other BMDS Elements with Link 16 compatibility (AEGIS BMD, PATRIOT) to conduct engagement coordination with THAAD. Development evolves to achieve a more robust radar discrimination, advanced interceptor, fire control and launcher capabilities to facilitate communications to the BMDS and forward base engagement coordination with other BMDS elements. THAAD development adds additional capability for other BMDS elements such as the SM3 Launch on AN/TPY-2 (THAAD Mode) Radar. Blocks 2008 and 2.0 flight tests began in FY06 and continue into FY10. The THAAD element has the flexibility to evolve to the MDA objective of putting the BMDS on alert and conducting concurrent testing and operations. Blocks 2008 and 2.0 development is the foundation for the acquisition and delivery of two Block 2.0 THAAD Fire Units to support operational assessment and fielding of a BMDS capability useful to the combatant commanders. The delivery of Fire Unit #1 and #2 consists of a basic load of 48 Interceptors, 6 Launchers, 2 AN/TPY-2 Radars (one funded in the Sensors PE 0603884C), and 2</p>		

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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THAAD Fire Control and Communications (TFCCs). Sustainment provides for field support and contractor logistics support for the field Fire Unit assets.

Block 5.0 and Sustainment: Block 5.0 is the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This continues the concept of a rapidly deployable configuration to support the Terminal Defense Segment (TDS) mission as well as supporting the strategic surveillance missions. Continued development will include remotely placed launchers for an improved defended area and defense against Intermediate Range Ballistic Missiles (IRBMs), provide the capability to launch THAAD interceptors from other BMDS sensor elements, and expand the system's capability to provide THAAD sensor data to the BMDS. This adds the THAAD Interceptor Engage on AN/TPY-2 Radar using a cue from other BMDS sensors. Block 5.0 also provides continued manufacturing of the Fire Unit hardware. In Block 5.0 THAAD Fire Units #3 and #4 consisting of a basic load of 48 Interceptors, 6 Launchers, 2 AN/TPY-2 Radars, and 2 TFCCs will be delivered. Sustainment continues the field support and contractor logistic support for fielded Fire Unit hardware.

A.3 Major System Element Goals

THAAD has goals that are synchronized with the overall MDA goals to meet the BMDS objectives in Blocks 2008, 2010, 2.0, 5.0 and Sustainment in FY07-13.

- Develop, test, verify, field and manufacture THAAD capability
- Continue component development to enhance integrated BMDS capability and efficiency
- Test and verify enhanced integrated BMDS Component Capability in an increasingly complex BMDS test program
- In partnership with the Army, provide, field and sustain THAAD capability for Operational Testing and BMDS defense operations
- Integrate THAAD into the BMDS International Strategy
- Retain, recruit and develop a high-performing and accountable workforce
- Achieve world class business processes and battle rhythm using continuous improvement techniques

A.4 Major Events Schedule and Description

Major Event	Project	Timeframe	Description
Flight Test			
Testing Milestones			
Conduct FTT-06	0907	2Q FY 2007	• FTT-06 was successfully conducted 26 Jan 07
Conduct FTT-05	0907	3Q FY 2007	• FTT-05 was successfully conducted on 26 Jun 07
Conduct FTT-07	0907	3Q FY 2007	• FTT-07 was successfully conducted on 5 Apr 07
Conduct FTT-08	BX07	1Q FY 2008	• FTT-08 was successfully conducted on 27 Oct 07

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
Major Event	Project	Timeframe	Description
Conduct FTT-09	BX07	2Q FY 2008 - 3Q FY 2008	<ul style="list-style-type: none"> • Endo intercept of separating target
Conduct FTT-10	BX07	4Q FY 2008 - 1Q FY 2009	<ul style="list-style-type: none"> • Salvo exo intercept of separating target unconstrained (DT/OT mission)
Conduct FTT-11	BX07	2Q FY 2009 - 3Q FY 2009	<ul style="list-style-type: none"> • Exo atmospheric intercept of a lofted spin-stabilized reoriented separating target (slipped one quarter due to target availability)
Conduct FTT-12	BX07	4Q FY 2009 - 1Q FY 2010	<ul style="list-style-type: none"> • Dual endo intercept of two complex separating targets (slipped two quarters due to target availability)
Conduct FTT-13	BX07	2Q FY 2010 - 3Q FY 2010	<ul style="list-style-type: none"> • Exo intercept of long range separating high velocity MRBM target (slipped three quarters due to target availability)
Conduct FTT-14	BX07	3Q FY 2010 - 4Q FY 2010	<ul style="list-style-type: none"> • Exo intercept of long range separating high velocity MRBM target (slipped two quarters due to target availability)
Contract Activity			
Testing Milestones			
Conduct FTT-08	0907	1Q FY 2008	<ul style="list-style-type: none"> • FTT-08 was successfully conducted on 27 Oct 07
Contractual Activities & Events			
Fire Unit Fielding #1 and #2 Contract Award	0007	1Q FY 2007	<ul style="list-style-type: none"> • Manufacture 24 Interceptors; 2 Launchers; 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs); Refurbish 1 Launcher
Fire Unit #2 Radar Contract Award (long lead items)	0007	2Q FY 2007	<ul style="list-style-type: none"> • Manufacture 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar
Fire Unit #1 and #2 Contract Award	0907	1Q FY 2007	<ul style="list-style-type: none"> • Manufacture 24 Interceptors; 3 Launchers
Fire Unit Fielding #3 and #4 Contract Award	EX07	1Q FY 2010	<ul style="list-style-type: none"> • Manufacture 48 Interceptors; 6 Launchers; 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (slipped one year due to FY08/09 funding shortfall)
Field Support and CLS Contract Award	XX07	1Q FY 2009	<ul style="list-style-type: none"> • Maintenance and support to fire units that have been delivered to the field (slipped one year to incorporate a consolidated-contractor logistics support strategy)
Delivery			
Deliveries			
Fire Unit #1	BX07	2Q FY 2009 - 4Q FY 2010	<ul style="list-style-type: none"> • A basic load of 24 Interceptors; 3 Launchers (1 Launcher provided under development contract); 1 AN/TPY-2 Radar (provided by the Sensors Directorate); 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (2 TSGs provided under the development contract) (slipped one quarter due to FY08/09 funding shortfalls)
Fire Unit #2	BX07	3Q FY 2010 - 2Q FY 2011	<ul style="list-style-type: none"> • A basic load of 24 Interceptors; 3 Launchers; 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar (provided by the Sensors Directorate); 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (slipped two quarters due to FY08/09 funding shortfalls)

UNCLASSIFIED

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---	--	------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Major Event	Project	Timeframe	Description
Fire Unit #3	EX07	4Q FY 2012 - 4Q FY 2013	<ul style="list-style-type: none"> A basic load of 24 Interceptors; 3 Launchers; 1 AN/TPY-2 Radar (provided by the Sensors Directorate), 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (slipped five quarters due to FY08/09 funding shortfalls)

B. Program Change Summary	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008 PB)	1,092,076	962,585	1,004,282
Current President's Budget (FY 2009 PB)	1,082,454	1,045,276	1,019,073
Total Adjustments	-9,622	82,691	14,791
Congressional Specific Program Adjustments	0	89,900	0
Congressional Undistributed Adjustments	0	-7,209	0
Reprogrammings	7,270	0	0
SBIR/STTR Transfer	-16,892	0	0
Adjustments to Budget Years	0	0	14,791

FY07 decrease of \$9.622 million includes SBIR/STTR transfer and MDA reprogrammings.

FY08 increase of \$82.691 million includes a Congressionally specific \$89.900 increase for Joint Capabilities OCONUS Exercise (JC-09) and a portion of the Congressional undistributed reduction.

FY09 increase of \$14.791 million reflects MDA programmatic changes to support program requirements.

UNCLASSIFIED

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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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0907 Terminal High Altitude Area Defense (THAAD) Block 2008	913,109	0	0	0	0	0	0
RDT&E Articles Qty	8	0	0	0	0	0	0
<p><i>Note: The content previously planned in Project 0907, Block 2008, for FY08-13 has been captured in Project BX07, Block 2.0, and XX07, Sustainment, in accordance with the MDA revised block structure.</i></p> <p><i>RDT&E Articles for Development Tests: FY07 - Delivered 4 Full-up Interceptors; 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar; 1 Launcher and 2 TFCC TSGs; Bought 1 Launcher.</i></p> <p><i>RDT&E Articles for Fire Unit: FY07 - Bought 24 Full-up Interceptors, 2 Full-up Interceptors for Test and 3 Launchers.</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>The Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The THAAD element provides the THAAD Interceptor Engage on Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode) Mod 1 (Cobra Dane, UEWR, SBX) engagement sequence of the BMDS. THAAD enhances the TDS by deepening, complementing, and extending the BMDS battle-space and capability to engage ballistic targets in the late mid-course and terminal phases of their trajectory. THAAD will also be a surveillance sensor, providing sensor data to cue other elements of the BMDS. THAAD, in conjunction with the fielded Patriot System, provides the TDS and supports the MDA objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 Radar, THAAD Fire Control and Communication (TFCC), and Peculiar Support Equipment) will be integrated into the THAAD element and the BMDS.</p> <p>Block 2008: THAAD spiral development began with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats inside and outside the atmosphere. This encompasses the following: (1) Test interceptor with inside and outside the atmosphere algorithms; (2) AN/TPY-2 Radar with Initial Discrimination Capability; and (3) TFCC with Limited Tactical Digital Information Link and Defense Design Planner. Development through FY06 laid a foundation for THAAD Interceptor Engage on AN/TPY-2 (THAAD Mode) Radar Engagement Sequence Groups (ESG) capability. This initial phase also provided the capability for other BMDS Elements (AEGIS BMD, PATRIOT) to conduct engagement sequences with THAAD data over Link-16.</p>							

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Development evolves to achieve a more robust AN/TPY-2 Radar discrimination, intercept capability inside and outside the atmosphere battlespace, salvo firing doctrine, and the ability to operate in a full spectrum of tactical interceptor environments and survivability. To facilitate tactical employment by soldiers, it also includes TFCC 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. THAAD development adds additional capability for other BMDS elements such as the Standard Missile 3 (SM3) Launch on AN/TPY-2 Radar. Block 2008 flight tests began in FY06 and continue into FY10. The THAAD element has the flexibility to evolve to the MDA objective of putting the BMDS on alert and conducting concurrent testing and operations. The THAAD Element will provide coordinated engagements with BMDS via the BMDS Command Control/Battle Management Communications (C2BMC). Block 2008 development culminates in demonstrated THAAD capabilities in both inside and outside the atmosphere battlespace against the full spectrum of adversarial capabilities. The Block 2008 development is the foundation for the acquisition and delivery of THAAD Fire Unit #1 to support operational assessment and fielding of a BMDS capability useful to the combatant commanders. The delivery of Fire Unit #1 consists of a basic load of 24 Interceptors, 3 Launchers, 1 AN/TPY-2 Radar “(provided by the Sensors Directorate) “ and 1 TFCC.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Integrated Logistics Support (ILS)	36,945	0	0
RDT&E Articles (Quantity)	0	0	0

Provides each THAAD component with all aspects of logistics support for all blocks of the program. Responsible for transportability of all THAAD system equipment and for ensuring the required Government Furnished Equipment (GFE) is available as required by contract. Additionally, works with the user in developing all aspects of training for the components and has a key role in the transition effort of the THAAD System to the Army.

FY07 Accomplishments:

- Completed flight testing at White Sands Missile Range (WSMR) and continued flight testing at Pacific Missile Range Facility (PMRF)
- Developed and updated Performance Based Logistics (PBL) Strategy and Draft Material Fielding Plan
- Continued to procure GFE to support program requirements
- Continued development of Battery Support Center (BSC) and Interim Contractor Support Systems (ICSS)
- Conducted Design Readiness Review (DRR) for BSC and ICSS
- Published the revised New Equipment Training Plan
- Continued development of Active Leak Sensor

UNCLASSIFIED

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<ul style="list-style-type: none"> Continued Supportability Strategy/Manpower Estimate Report (MER) and Emergency Activation Plan (EAP) Continued development of Interactive Electronics Training Manuals (IETMs) 			
	FY 2007	FY 2008	FY 2009
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)	79,683	0	0
RDT&E Articles (Quantity)	2	0	0
<p>The THAAD Fire Control and Communication (TFCC) is composed of the Tactical Operations Station, the Launch Control Station, and the Station Support Group. These three components together are called the Tactical Station Group (TSG). A TFCC includes two TSGs. The TFCC provides the planning, control, coordination, execution, and communications necessary to fulfill the THAAD mission in a coherent and fully integrated fashion. It is interoperable with external air and interceptor defense and intelligence systems and agencies integrated into the Ballistic Missile Defense System (BMDS).</p> <p>FY07 Accomplishments: RDT&E Articles: Delivered 2 TFCC TSGs</p> <ul style="list-style-type: none"> Conducted Soldier Tactical move of TFCC to Pacific Missile Range Facility (PMRF) Supported flight testing at PMRF Continued development of Software Build 5 Maintained Formal Release of Software Build 4 Initiated rehosting of Software Build 5 on upgraded processors Continued development upgrades to vehicles and shelters Conducted Design Readiness Review (DRR) of development upgrades to vehicles and shelters Participated in BMDS Integration with Aegis at PMRF Continued Link 16C Communication Enhancements Software Build 5 			

UNCLASSIFIED

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	FY 2007	FY 2008	FY 2009
Interceptor	265,637	0	0
RDT&E Articles (Quantity)	4	0	0
<p>The THAAD Interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. Its kill vehicle possesses a Divert and Attitude Control System (DACs) and an infrared seeker used to destroy its target through hit-to-kill technology.</p> <p>FY07 Accomplishments: RDT&E Articles: Delivered 4 Full-Up Interceptors</p> <ul style="list-style-type: none"> Continued System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) integration activities of hardware and software in preparation for flight testing Continued fabrication, assembly, and test of hardware for flight test and Block Qualification Test (BQT) Completed Interceptor Block Process Validation Completed Formal Release of interceptor software Completed flight tests at White Sands Missile Range (WSMR) and continued flight tests at Pacific Missile Range Facility (PMRF) Completed interceptor contractor Qualification Testing Continued obsolescence upgrade for interceptor hardware 			
	FY 2007	FY 2008	FY 2009
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar	109,956	0	0
RDT&E Articles (Quantity)	1	0	0
<p>The AN/TPY-2 Radar is a solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The AN/TPY-2 Radar uses fence, volume, and cued search modes, and provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The AN/TPY-2 Radar hardware is a transportable system composed of the antenna equipment unit, electronics equipment unit, cooling equipment unit, and the prime power unit.</p> <p>FY07 Accomplishments: RDT&E Articles: Delivered 1 AN/TPY-2 Radar</p> <ul style="list-style-type: none"> Delivered and completed integration of AN/TPY-2 Radar #2 at White Sands Missile Range (WSMR) Conducted Soldier Tactical move of AN/TPY-2 Radar #1 to Pacific Missile Range Facility (PMRF) 			

UNCLASSIFIED

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<ul style="list-style-type: none"> • Supported flight testing at PMRF • Continued development and conducted Design Readiness Review for Prime Power Unit (PPU) • Delivered Formal Release of Software Build 4.2 • Initiated manufacture of AN/TPY-2 Radar PPUs • Participated in Radar Data Collection (RDC) missions at PMRF • Maintained Formal Release of Software Build 4.1 			
	FY 2007	FY 2008	FY 2009
Launcher	12,321	0	0
RDT&E Articles (Quantity)	1	0	0
<p>The THAAD Launcher consists of a U.S. Army M1120 Heavy Expanded Mobility Tactical Truck-Load Handling System variant that transports an integrated missile round pallet and supports and secures eight ready-to-launch interceptors.</p> <p>FY07 Accomplishments: RDT&E Articles: Delivered 1 Launcher</p> <ul style="list-style-type: none"> • Completed flight testing at White Sands Missile Range (WSMR) and continued flight testing at Pacific Missile Range Facility (PMRF) • Completed Formal Release of Launcher Software Build 3 • Continued development and conducted Design Readiness Review for Software Build 4 • Continued System Integration Laboratory (SIL) Hardware-in-the Loop (HWIL) integration activities of hardware and software in preparation for flight test • Conducted Soldier Tactical move of Launcher to PMRF • Initiated buy of 1 Launcher 			

UNCLASSIFIED

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	FY 2007	FY 2008	FY 2009
System Test	177,099	0	0
RDT&E Articles (Quantity)	0	0	0
<p>The THAAD System Tests are responsible for developing and executing all aspects of the THAAD program flight test objectives, ballistic interceptor target solutions, Live Fire Test and Evaluation (LFT&E) program, system flight test execution, government ground testing, range facility preparations, documentation requirements, data analysis and reporting.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Continued test planning and range operations for flight testing • Completed flight testing at White Sands Missile Range (WSMR) and conducted flight testing at Pacific Missile Range Facility (PMRF) • Participated in Targets planning and Target requirements for flight test program • Conducted Ballistic Missile Defense System (BMDS) integrated tests at PMRF with Aegis • Initiated E3 interceptor and launcher Design Verification Test (DVT)/Block Qualification Test (BQT) • Initiated support of Target Launch Platform in support of flight tests • Initiated planning for element level Government BQT • Continued LFT&E program and conducted Sled tests at Holloman AFB, NM • Continued to conduct Radar Data Collection (RDC) missions at PMRF • Continued assembly and integration of Targets 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Weapon Sys Engr & Integ Team	68,789	0	0
RDT&E Articles (Quantity)	0	0	0
<p>Responsible for all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) capabilities and requirements into operationally suitable THAAD capability blocks. Coordinate and conduct requirements analysis, system integration and verification, software engineering to include independent verification and validation, configuration management, and BMDS integration for each THAAD component by working through the Integrated Process Team (IPT) process on a balanced contractor-government team. Additionally responsible for all aspects of risk management and security for the THAAD program.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Completed flight testing at White Sands Missile Range (WSMR) and continued flight testing at Pacific Missile Range Facility (PMRF) • Continued supporting pre-flight testing in the System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) facility • Continued System Analysis in support of flight testing • Continued validation of the end-to-end digital simulation using flight test data • Initiated element characterization analysis • Continued planning the integration and implementation of THAAD and its components in the BMDS Test Bed • Performed SIL HWIL integration of Formal Release of Interceptor Software Build 7, Launcher Software Build 4, Fire Control Software Build 5 and THAAD Radar Software Build 4 for integrated flight test • Continued participating in wargames, exercises and interoperability demonstrations 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Fire Unit #1	129,128	0	0
RDT&E Articles (Quantity)	0	0	0
<p>Fire Unit #1 will include a basic load of 24 Interceptors, 3 Launchers, 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar (provided by Sensors Directorate), 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (provided by development contract), the required Peculiar and Common Support Equipment, and 2 Interceptors for flight test (provided by development contract). The Fire Unit will be fielded in FY09 and, following operational testing, will be transitioned to the U.S. Army.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Initiated the fabrication and assembly of component hardware • Initiated redesign of assemblies with obsolescence or pure tin hardware • Initiated the procurement of Government Furnished Equipment (GFE) to support the Fire Unit • Initiated and completed the Integrated Baseline Review (IBR) • Initiated buy of 24 interceptors, and 3 launchers for Fire Unit #1 • Initiated buy of 2 interceptors for development tests 			
	FY 2007	FY 2008	FY 2009
Program Management	33,551	0	0
RDT&E Articles (Quantity)	0	0	0
<p>Program Management provides support functions across the 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 Defense Finance Accounting Service (DFAS), internal review and audit, earned-value management, and program assessments.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Completed support of flight test program at White Sands Missile Range (WSMR) and continued support of flight test program Pacific Missile Range Facility (PMRF) • Provided management, leadership, and planning for all Block 2008 activities • Provided salaries, travel, training, supplies, rental and project-wide support • Continued to provide project-wide programmatic support 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<p><u>D. Acquisition Strategy</u></p> <p>THAAD follows the capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of capability blocks. The THAAD Block 2008 development program is already on contract. The Cost Plus Award Fee (CPAF)/ Cost Plus Incentive Fee (CPIF) contract was awarded August 4, 2000. The Fire Unit #1 contract was awarded on December 22, 2006, and consists of a Sole Source, CPAF/CPIF contract to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware. Block 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.</p>		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Integrated Logistics Support (ILS)								
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL	75,463	0	N/A	0	N/A	75,463
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)								
Prime Contract	SS/CPIF	LMSSC and Raytheon/ Huntsville, AL	304,194	0	N/A	0	N/A	304,194
Interceptor								
Prime Contract	SS/CPIF	LMSSC/ CA, TX, AL, MA, NH, IL, FL & MD	1,618,742	0	N/A	0	N/A	1,618,742
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar								
Prime Contract	SS/CPIF	LMSSC and Raytheon/ Huntsville, AL, Bedford, MA, & Texas	667,794	0	N/A	0	N/A	667,794
Launcher								
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL & Lufkin, TX	85,239	0	N/A	0	N/A	85,239
System Test								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA; Huntsville, AL; NM & HI	188,792	0	N/A	0	N/A	188,792
Weapon Sys Engr & Integ Team								
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL	188,356	0	N/A	0	N/A	188,356
Fire Unit #1								
Prime Contract	SS/CPIF	LMSSC & CA, TX, AL, NH, IL, FL & MD	121,018	0	N/A	0	N/A	121,018
Subtotal Product Development			3,249,598	0		0		3249598
Remarks								
II. Support Costs Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Integrated Logistics Support (ILS)								
SETA	C	Multiple to include Dynetics, TSA & BAE/ Huntsville, AL & Rockville, MD	11,773	0	N/A	0	N/A	11,773

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
OGA	MIPR	Multiple to include IMMC & USAADASCH/ Huntsville, AL & Ft. Bliss	54,258	0	N/A	0	N/A	54,258
MDA Program Support	C	MDA/ Arlington, VA	3,249	0	N/A	0	N/A	3,249
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)								
SETA	C	Multiple to include Dynetics, DCD, & Davidson Tech/ Silver Spring, MD & Huntsville, AL	4,945	0	N/A	0	N/A	4,945
OGA	MIPR	Multiple to include NRDEC, RDEC & SMDC/ Natick MA & Huntsville, AL	12,941	0	N/A	0	N/A	12,941
MDA Program Support	C	MDA/ Arlington, VA	1,507	0	N/A	0	N/A	1,507
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	11,072	0	N/A	0	N/A	11,072
Interceptor								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
SETA	C	Multiple to include BAE, TSI & L3/ Huntsville, AL & Salt Lake City, UT	35,772	0	N/A	0	N/A	35,772
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	34,807	0	N/A	0	N/A	34,807
MDA Program Support	C	MDA/ Arlington, VA	9,301	0	N/A	0	N/A	9,301
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar								
SETA	C	Multiple to include Dynetics & GA Tech/ Huntsville, AL and GA	11,108	0	N/A	0	N/A	11,108
OGA	MIPR	Multiple to include CECOM, RDEC & SMDC/ Ft Monmouth NJ and Huntsville, AL	13,793	0	N/A	0	N/A	13,793
MDA Program Support	C	MDA/ Arlington, VA	3,816	0	N/A	0	N/A	3,816
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	636	0	N/A	0	N/A	636
Launcher								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
SETA	C	Teledyne Solutions/ Huntsville, AL	3,811	0	N/A	0	N/A	3,811
OGA	MIPR	RDEC & SMDC/ Huntsville, AL	4,435	0	N/A	0	N/A	4,435
MDA Program Support	C	MDA/ Arlington, VA	697	0	N/A	0	N/A	697
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	4,122	0	N/A	0	N/A	4,122
System Test								
SETA	C	Multiple to include Dynetics, L3 & TSI/ Huntsville, AL	21,804	0	N/A	0	N/A	21,804
OGA	MIPR	Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC/ NM, HI, VA, & Huntsville, AL	102,029	0	N/A	0	N/A	102,029
MDA Program Support	C	MDA/ Arlington, VA	10,852	0	N/A	0	N/A	10,852
Weapon Sys Engr & Integ Team								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
SETA	C	Multiple to include Dynetics, TSA and L3/ Huntsville, AL & Salt Lake City, UT	67,565	0	N/A	0	N/A	67,565
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	58,854	0	N/A	0	N/A	58,854
MDA Program Support	C	MDA/ Arlington, VA	5,172	0	N/A	0	N/A	5,172
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	2,504	0	N/A	0	N/A	2,504
Fire Unit #1								
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	8,110	0	N/A	0	N/A	8,110
CSE	MIPR	Multiple to include CECOM, TACOM, & GSA/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	0	N/A	0	N/A	
Program Management								

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA/ Huntsville, AL	126,221	0	N/A	0	N/A	126,221
Subtotal Support Costs			625,154	0		0		625,154

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
System Test								
Targets			22,299	0	N/A	0	N/A	22,299
Subtotal Test and Evaluation			22,299	0		0		22,299

Remarks

IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks











Project Total Cost			3,897,051	0		0		3,897,051
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Testing Milestones																												
Conduct FTT-06		▲																										
Conduct FTT-05			▲																									
Conduct FTT-07			▲																									
Conduct FTT-08					▲																							
BLOCK 2008																												
FTT-06 Interceptor Delivered	▲																											
AN/TPY-2 Radar #2 Integration Complete at WSMR		▲																										
FTT-07 Interceptor Delivered		▲																										
FTT-05 Interceptor Delivered			▲																									
FTT-08 Interceptor Delivered				▲																								
Interceptor S/W Build 7.0 Formal Rel Integ at SIL				▲																								
Insensitive Munitions/Hazards Testing						▲																						
FTT-09 Interceptor Delivered						▲																						
Legend																												
 Significant Event (complete)  Milestone Decision (complete)  Element Test (complete)  System Level Test (complete)  Complete Activity														 Significant Event (planned)  Milestone Decision (planned)  Element Test (planned)  System Level Test (planned)  Planned Activity														

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile																			Date February 2008										
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	2007				2008				2009				2010				2011				2012				2013				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Contractual Activities & Events																													
Fire Unit #1 and #2 Contract Award	▲																												

Legend

	Significant Event (complete)		Significant Event (planned)
	Milestone Decision (complete)		Milestone Decision (planned)
	Element Test (complete)		Element Test (planned)
	System Level Test (complete)		System Level Test (planned)
	Complete Activity		Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Testing Milestones							
Conduct FTT-06	2Q						
Conduct FTT-05	3Q						
Conduct FTT-07	3Q						
Conduct FTT-08		1Q					
BLOCK 2008							
FTT-06 Interceptor Delivered	1Q						
Interceptor Block Qualification Test	1Q-4Q						
AN/TPY-2 Radar #2 Integration Complete at WSMR	2Q						
FTT-07 Interceptor Delivered	2Q						
FTT-05 Interceptor Delivered	3Q						
Interceptor S/W B7.0 Engr Rel Integ at SIL	2Q						
FTT-08 Interceptor Delivered	4Q						
Interceptor S/W Build 7.0 Formal Rel Integ at SIL	4Q						
AN/TPY-2 Radar B4.2.1 S/W Engr Rel Integ at SIL	4Q						
Insensitive Munitions/Hazards Testing		2Q					
FTT-09 Interceptor Delivered		2Q					
Contractual Activities & Events							
Fire Unit #1 and #2 Contract Award	1Q						

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0007 Terminal High Altitude Area Defense (THAAD) Block 2010	20,020	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0
<p><i>Note: The content previously planned in Project 0007, Block 2010, for FY08-13 has been captured in Project BX07, Block 2.0, and XX07, Sustainment, in accordance with the MDA revised block structure.</i></p> <p><i>RDT&E Articles for Fire Unit: FY07 - Bought 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar.</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>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 Block 2010 THAAD highly mobile capability provides BMDS the ability to defend against all ranges of ballistic missiles and asymmetric threats; 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. Five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar, THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) will be integrated into the THAAD element and BMDS.</p> <p>Block 2010: Block 2010 provides continued manufacturing of Fire Unit hardware.</p>							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Fire Unit #2	20,020	0	0
RDT&E Articles (Quantity)	0	0	0

Fire Unit #2 will include a basic load of 24 Interceptors, 2 Launchers, 1 Refurbished Launcher, 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar (provided by the Sensors Directorate), 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs), and the required Peculiar and Common Support Equipment. The Fire Unit will be fielded in FY10 and, following operational testing, will be transitioned to the U.S. Army.

FY07 Accomplishments:

- Initiated buy of long lead items for 1 AN/TPY-2 Radar

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

THAAD follows the Missile Defense Agency (MDA) capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition in accordance with the approved MDA block structure. The acquisition strategy consists of the following: (1) Sole Source, CPAF/Cost Plus Incentive Fee (CPIF) contract, which awarded December 22, 2006, as the element integrator and to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware and (2) Sole Source contract, awarded February 22, 2007, to procure one Army Navy/Transportable Radar Surveillance - Model 2 Radar. The Block 2010 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.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Fire Unit #2								
Prime Contract	SS	Raytheon/ MA, AL	20,000	0	N/A	0	N/A	20,000
Subtotal Product Development			20,000	0		0		20000

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs								

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis					Date February 2008	
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment			
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IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			20,000	0		0		20,000
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDTE&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contractual Activities & Events																												
Fire Unit Fielding #1 and #2 Contract Award	▲																											
Fire Unit #2 Radar Contract Award (long lead items)		▲																										

Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲▼	Complete Activity
▲	Significant Event (planned)
★	Milestone Decision (planned)
◆	Element Test (planned)
▼	System Level Test (planned)
▲▼	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Contractual Activities & Events							
Fire Unit Fielding #1 and #2 Contract Award	1Q						
Fire Unit #2 Radar Contract Award (long lead items)	2Q						

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
BX07 Terminal High Altitude Area Defense (THAAD) Block 2.0	0	865,916	843,103	306,918	82,813	7,761	0
RDT&E Articles Qty	0	13	15	28	14	0	0
<p><i>Note: The content in Project BX07, Block 2.0, is a continuation of the efforts reported in Project 0907, Block 2008, and Project 0007, Block 2010. Beginning in FY09, the cost associated with the AN/TPY-2 Radars is represented under the Sensors Program Element 0603884C.</i></p> <p><i>RDT&E Articles for Development Tests: FY08 - Deliver 8 Full-up Interceptors; 3 TFCC TSGs, 2 Launchers.</i></p> <p><i>RDT&E Articles for Fire Unit: FY08 - Buy 24 Full-up Interceptors, 2 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) and 2 Launchers; FY09 - Deliver 6 Full-up Interceptors, 2 Full-up Interceptors for Test, 2 TFCC TSGs and 5 Launchers. FY10 - Deliver 28 Full-up Interceptors. FY-11 - Deliver 14 Full-up Interceptors</i></p> <p><u>A. Mission Description and Budget Item Justification</u></p> <p>The Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). The THAAD element provides the THAAD Interceptor Engage on Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) (THAAD Mode) engagement sequence of the BMDS. THAAD enhances the TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage ballistic targets in the late mid-course and terminal phases of their trajectory. THAAD will also be a surveillance sensor, providing sensor data to cue other elements of the BMDS. THAAD, in conjunction with the fielded Patriot System, provides the TDS and supports the MDA objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 Radar, THAAD Fire Control and Communication (TFCC), and Peculiar Support Equipment) will be integrated into the THAAD element and the BMDS.</p> <p>Block 2.0: THAAD spiral development began with the design and development of a significant, fundamental capability against short to medium-range Ballistic Missiles (BMs) and asymmetric threats inside and outside the atmosphere. This encompasses the following: (1) Test interceptor with inside and outside the atmosphere algorithms; (2) AN/TPY-2 Radar with Initial Discrimination Capability; and (3) TFCC with Limited Tactical Digital Information Link and Defense Design Planner. The initial phase of development laid a foundation for THAAD Interceptor Engage on AN/TPY-2 (THAAD Mode) Radar Engagement Sequence Groups (ESG) capability and provided the capability for other BMDS Elements (AEGIS BMD, PATRIOT) to conduct engagement sequences with THAAD data over Link-16.</p>							

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Development evolves to achieve a more robust AN/TPY-2 Radar discrimination, intercept capability inside and outside the atmosphere battlespace, salvo firing doctrine, and the ability to operate in a full spectrum of tactical interceptor environments and survivability. To facilitate tactical employment by soldiers, it also includes TFCC 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. THAAD development adds additional capability for other BMDS elements such as the Standard Missile 3 (SM3) Launch on AN/TPY-2 Radar. Block 2.0 flight tests began in FY06 and continue into FY10. The THAAD element has the flexibility to evolve to the MDA objective of putting the BMDS on alert and conducting concurrent testing and operations. The THAAD Element will provide coordinated engagements with BMDS via the BMDS Command Control/Battle Management Communications (C2BMC). Block 2.0 development culminates in demonstrated THAAD capabilities in both inside and outside the atmosphere battlespace against the full spectrum of adversarial capabilities. The Block 2.0 development is the foundation for the acquisition and delivery of Block 2.0 THAAD Fire Unit #1 and #2 to support operational assessment and fielding of a BMDS capability useful to the combatant commanders. The delivery of Fire Unit #1 and #2 consists of a basic load of 48 Interceptors, 6 Launchers, 2 AN/TPY-2 Radar (provided by the Sensors Directorate) and 2 TFCCs.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Program Management	0	17,223	24,014
RDT&E Articles (Quantity)	0	0	0

Program Management provides support functions across the 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 Defense Finance Accounting Service (DFAS), internal review and audit, earned-value management, and program assessments.

FY08 Planned Program:

- Continue support of flight test program at Pacific Missile Range Facility (PMRF)
- Provide management, leadership, and planning for all Block 2.0 activities
- Provide salaries, travel, training, supplies, and project-wide support
- Continue to provide project-wide programmatic support
- Support dedicated Information Technology services for mission specific research and test efforts to include classified and unclassified networks, software licenses, sustainment and information assurance certification.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Continue support of flight test program at PMRF • Provide management, leadership, and planning for all Block 2.0 activities • Provide salaries, travel, training, supplies, rental and project-wide support • Continue to provide project-wide programmatic support • Continue to support dedicated Information Technology services for mission specific research and test efforts to include classified and unclassified networks, software licenses, sustainment and information assurance certification. 			
	FY 2007	FY 2008	FY 2009
Integrated Logistics Support (ILS)	0	37,824	30,437
RDT&E Articles (Quantity)	0	0	0
<p>Provides each THAAD component with all aspects of logistics support for all blocks of the program. Responsible for transportability of all THAAD system equipment and for ensuring the required Government Furnished Equipment (GFE) is available as required by contract. Additionally, works with the user in developing all aspects of training for the components and has a key role in the transition effort of the THAAD System to the Army.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Continue to support flight testing at Pacific Missile Range Facility (PMRF) • Support Government Block Qualification Test (BQT) • Continue to update Performance Based Logistics (PBL) strategy • Initiate Business Case Analysis (BCA) • Publish Modified Table of Organization and Equipment • Deliver Tactical Active Leak Sensor • Deliver Battery Support Center (BSC) and Interim Contractor Support System (ICSS) • Complete Interactive Electronic Training Manuals (IETMs) • Continue updating the Supportability Strategy, Manpower Estimate Report (MER) and Emergency Activation Plan (EAP) • Continue to procure GFE to support program requirements • Continue development of Single Missile Round Transfer Container (SMRTC) • Initiate planning for the Juniper Cobra 09 Exercise (JC-09) • Support Insensitive Munitions/Final Hazard Classification (IM/FHC) design and testing 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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FY09 Planned Program:

- Support flight tests at PMRF
- Complete support of Government BQT
- Continue update of PBL strategy
- Continue BCA
- Conduct Logistics and Supply Support Demonstrations
- Publish Demilitarization/Disposal Plan
- Continue to procure GFE for program requirements
- Continue updating THAAD Supportability Strategy/MER/EAP
- Continue development of SMRTC
- Continue planning and execute JC-09
- Continue to support IM/FHC design and testing

	FY 2007	FY 2008	FY 2009
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)	0	24,794	16,509
RDT&E Articles (Quantity)	0	3	0

The THAAD Fire Control and Communication (TFCC) is composed of the Tactical Operations Station, the Launch Control Station, and the Station Support Group. These three components together are called the Tactical Station Group (TSG). A TFCC includes two TSGs. The TFCC provides the planning, control, coordination, execution, and communications necessary to fulfill the THAAD mission in a coherent and fully integrated fashion. It is interoperable with external air and interceptor defense and intelligence systems and agencies integrated into the Ballistic Missile Defense System (BMDS).

FY08 Planned Program:

RDT&E Articles: Deliver 3 TFCC TSGs

- Continue System Integration Laboratory (SIL) Hardware-in-the Loop (HWIL) integration activities of hardware and software in preparation for flight testing
- Support flight testing at Pacific Missile Range Facility (PMRF)
- Deliver Formal Release of Software Build 5
- Complete rehosting of Software Build 5 on upgraded processors to address obsolescence

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<ul style="list-style-type: none">• Complete Link 16C Communication Enhancements for Software Build 5• Initiate and complete Solaris 10 Operating System Upgrade• Initiate information assurance security requirements for Software Build 5• Refurbish 1 TSG• Initiate Government Block Qualification Test (BQT)• Continue participating in wargames, exercises and interoperability demonstrations• Conduct Army Service Level Certification Testing• Conduct Intra Army Interoperability Certification Testing• Support planning for the Juniper Cobra 09 Exercise (JC-09) <p>FY09 Planned Program:</p> <ul style="list-style-type: none">• Continue SIL HWIL integration activities of hardware and software in preparation for flight test• Support flight testing at PMRF• Support Development Verification Testing and Operational Testing• Maintain Formal Release of Software Build 5• Complete information assurance security requirements for Software Build 5• Continue Government BQT• Continue participating in wargames, exercises and interoperability demonstrations• Conduct Joint Interoperability Certification Testing• Conduct acceptance testing of 2 TFCC TSGs• Continue to support planning and execution of JC-09		

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Interceptor	0	86,363	131,141
RDT&E Articles (Quantity)	0	8	0
<p>The THAAD Interceptor is a certified round that is propelled by a single-stage, solid-propellant rocket booster. Its kill vehicle possesses a Divert and Attitude Control System (DACs) and an infrared seeker used to destroy its target through hit-to-kill technology.</p> <p>FY08 Planned Program: RDT&E Articles: Deliver 8 Full-Up Interceptors</p> <ul style="list-style-type: none"> • Complete fabrication, assembly, and test of hardware • Complete fabrication, assembly, and testing of hardware in preparation for interceptor Government Block Qualification Test (BQT) • Initiate interceptor Government BQT • Complete obsolescence upgrade for interceptor hardware • Continue System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) integration activities of hardware and software in preparation for flight test and Government BQT • Maintain Formal Release of interceptor software • Support flight testing at Pacific Missile Range Facility (PMRF) • Support Insensitive Munitions/Final Hazard Classification (IM/FHC) design and testing <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Support flight testing at PMRF • Continue to maintain Formal Release of interceptor software • Continue SIL HWIL integration activities of hardware and software in preparation for flight testing • Complete interceptor Government BQT • Continue to support IM/FHC design and testing 			

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar	0	142,235	155,624
RDT&E Articles (Quantity)	0	0	0
<p>The AN/TPY-2 Radar is a solid state, phased array radar capable of tracking multiple threats and multiple interceptors during engagements. The AN/TPY-2 Radar uses fence, volume, and cued search modes, and provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The AN/TPY-2 Radar hardware is a transportable system composed of the antenna equipment unit, electronics equipment unit, cooling equipment unit, and the prime power unit.</p> <p>Beginning in FY09, the cost associated with the AN/TPY-2 Radars is represented under the Sensors Program Element 0603884C.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Integrate Formal Release of Software Build 4.2 in the System Integration Laboratory (SIL) • Deliver first PPU for Government Block Qualification Test (BQT) • Initiate Government BQT • Support flight testing • Continue to maintain Formal Release of Software Build 4.2 • Support planning for the Joint Capability OCONUS Exercise (JC-09) <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Continue Government BQT • Continue to support flight testing • Continue to maintain Formal Release of Software Build 4.2 • Continue planning and execute JC-09 			

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Launcher	0	4,385	7,869
RDT&E Articles (Quantity)	0	2	0
<p>The THAAD Launcher consists of a U.S. Army M1120 Heavy Expanded Mobility Tactical Truck-Load Handling System variant that transports an integrated missile round pallet and supports and secures eight ready-to-launch interceptors.</p> <p>FY08 Planned Program: RDT&E Articles: Deliver 2 Launcher</p> <ul style="list-style-type: none"> • Support flight testing at Pacific Missile Range Facility (PMRF) • Continue System Integration Laboratory (SIL) Hardware-in-the Loop (HWIL) integration activities of hardware and software in preparation for flight test • Complete Launcher Block Process Validation • Initiate Launcher Government Block Qualification Test (BQT) • Complete Formal Release of Software Build 4 and deliver to the SIL for flight test • Initiate planning for the Juniper Cobra 09 Exercise (JC-09) <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Continue SIL HWIL integration activities of hardware and software in preparation for flight test • Support flight testing at PMRF • Continue to maintain Formal Release of Software Build 4 • Continue Government BQT • Support planning and execution of JC-09 			

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
System Test	0	231,079	217,447
RDT&E Articles (Quantity)	0	0	0
<p>The THAAD System Tests are responsible for developing and executing all aspects of the THAAD program flight test objectives, ballistic interceptor target solutions, Live Fire Test and Evaluation (LFT&E) program, system flight test execution, government ground testing, range facility preparations, documentation requirements, data analysis and reporting.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Continue test planning and range operations for flight testing • Continue to conduct flight testing at Pacific Missile Range Facility (PMRF) • Continue support of Target Launch Platform in support of flight testing • Participate in Targets planning and Target requirements for flight test program • Conduct Government Block Qualification Test (BQT) • Continue LFT&E Program and Light Gas Gun tests • Continue assembly, integration and launch of Targets in support of flight testing • Initiate detailed operational test planning for Force Development Experiment (FDE) and Limited User Test (LUT) (includes Juniper Cobra 09 Exercise (JC-09)) • Implement Insensitive Munitions/Final Hazard Classification (IM/FHC) design and testing <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Continue test planning and range operations for flight testing • Conduct flight testing at PMRF • Complete Government BQT • Participate in Targets planning and Target requirements for flight test program • Continue LFT&E program and conduct Light Gas Gun test • Conduct System Logistics Demonstrations • Integrate Sim-Over-Live System Driver (SOLD) into flight test program • Conduct Developmental Test/Operational Test (DT/OT) flight test 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<ul style="list-style-type: none"> • Conduct FDE and begin conducting LUT (includes JC-09) • Continue assembly, integration and launch of Targets in support of flight testing • Continue IM/FHC design and testing 			
	FY 2007	FY 2008	FY 2009
Weapon Sys Engr & Integ Team	0	56,863	56,838
RDT&E Articles (Quantity)	0	0	0
<p>Responsible for all engineering efforts required to translate approved Ballistic Missile Defense System (BMDS) capabilities and requirements into operationally suitable THAAD capability blocks. Coordinate and conduct requirements analysis, system integration and verification, software engineering to include independent verification and validation, configuration management, and BMDS integration for each THAAD component by working through the Integrated Process Team (IPT) process on a balanced contractor-government team. Additionally responsible for all aspects of risk management and security for the THAAD program.</p> <p>FY 08 Planned Program:</p> <ul style="list-style-type: none"> • Support flight testing at Pacific Missile Range Facility (PMRF) • Continue supporting pre-flight testing in the Software Integration Laboratory (SIL) Hardware-in-the Loop (HWIL) facility • Continue System Analysis in support of flight tests • Complete validation of the end-to-end digital simulation using flight test data • Initiate Element Verification analysis • Continue planning the integration and implementation of THAAD and its components in the BMDS Test Bed • Continue participating in wargames, exercises and interoperability demonstrations • Support planning for the Juniper Cobra 09 Exercise (JC-09) • Support Insensitive Munitions/Final Hazard Classification (IM/FHC) design and testing <p>FY 09 Planned Program:</p> <ul style="list-style-type: none"> • Support flight testing at PMRF • Continue supporting pre-flight testing in the SIL HWIL facility • Complete System Analysis in support of flight testing 			

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<ul style="list-style-type: none"> • Complete validation of the end-to-end digital simulation using flight test data • Complete Element Verification analysis • Complete integration and implementation of THAAD and its components in the BMDS Test Bed • Continued participating in wargames, exercises and interoperability demonstrations • Continue to support planning and execution of JC-09 • Continue to support IM/FHC design and testing 			
	FY 2007	FY 2008	FY 2009
Fire Units #1 and #2	0	265,150	203,224
RDT&E Articles (Quantity)	0	0	15
<p>Fire Units #1 and #2 will include a basic load of 48 Interceptors, 5 Launchers, 1 Refurbished Launcher, 2 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars (provided by Sensors Directorate), 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) (2 provided by development contract), the required Peculiar and Common Support Equipment, and 2 Interceptors for flight test (provided to development contract). The Fire Units will be fielded in FY09 and FY10 and, following operational testing, will be transitioned to the U.S. Army.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Initiate and continue the fabrication and assembly of Interceptor components • Initiate the fabrication and assembly of Launcher and TFCC TSG components • Initiate the fabrication and assembly of Missile Round Trainers • Continue the procurement of Government Furnished Equipment (GFE) to support Fire Unit • Initiate the procurement of Interim Common Support Equipment (ICSE) • Complete the procurement of Initial Spares • Initiate preparation for Ground Test Element Integration and Checkout (EICO) • Convert System Integration Laboratory (SIL) to Fire Unit configuration • Complete redesign of assemblies with obsolescence or pure tin hardware • Initiate requalification testing of redesign hardware • Initiate the refurbishment of 1 launcher (provided under development contract) • Receive 2 TFCC TSGs (provided under development contract) 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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- Initiate the buy of a basic load of 24 interceptors, 2 TFCC TSGs, 2 launchers

FY09 Planned Program:

RDT&E Articles for Fire Units: Deliver 2 Interceptors for Development Tests, 6 Interceptors, 2 TFCC TSGs and 5 Launchers for Fire Units

- Complete the final assembly of Launchers and TFCC TSGs
- Complete the final assembly of Interceptors for development test
- Complete the fabrication and assembly of component hardware
- Continue the fabrication and assembly of initial spares
- Continue the fabrication and assembly of Missile Round Trainers
- Continue the procurement, fabrication and assembly of GFE
- Continue the procurement of Common Support Equipment (CSE)
- Initiate the fabrication and assembly of Battery Support Equipment(BSE)
- Initiate the fabrication and assembly of Interim Contractor Support System (ICSS)
- Initiate SIL Testing
- Begin Limited User Testing (LUT)
- Continue requalification testing of redesign hardware
- Conduct Ground Test Element Integration and Checkout (EICO)

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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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	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

THAAD follows the Missile Defense Agency (MDA) capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition in accordance with the MDA approved block structure. The acquisition strategy consists of the following: (1) The THAAD Block 2.0 development program already on contract. This Cost Plus Award Fee (CPAF)/ Cost Plus Incentive Fee (CPIF) contract was awarded August 4, 2000. (2) The Fire Unit #1 and #2 contract was awarded on December 22, 2006, and consists of a Sole Source, CPAF/CPIF contract to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware. (3) The Sole Source contract was awarded on February 12, 2007, to procure the Army Navy/Transportable Radar Surveillance, - Model 2 Radar. The Block 2.0 Sole Source contractual activities, as well as the acquisition of the Fire Units, will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Program Management								
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL	0	11,784	1/2Q	16,673	1/2Q	28,457
Integrated Logistics Support (ILS)								
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL	0	29,311	1/2Q	21,458	1/2Q	50,769
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)								
Prime Contract	SS/CPIF	LMSSC and Raytheon/ Huntsville, AL	0	23,661	1/2Q	13,854	1/2Q	37,515
Interceptor								
Prime Contract	SS/CPIF	LMSSC/ CA, TX, AL, MA, NH, IL, FL & MD	0	75,950	1/2Q	107,830	1/2Q	183,780
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar								
Prime Contract	SS/CPIF	Raytheon// Bedford, MA	0	136,850	1/2Q	138,835	1/2Q	275,685
Launcher								
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL, Camden, AK, Dallas & Lufkin, TX	0	3,504	1/2Q	6,239	1/2Q	9,743
System Test								

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA; Huntsville, AL; NM & HI	0	96,774	1/2Q	90,205	1/2Q	186,979
Weapon Sys Engr & Integ Team								
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL	0	29,259	1/2Q	26,835	1/2Q	56,094
Fire Units #1 and #2								
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL; NM & HI	0	193,820	1/2Q	193,594	1/2Q	387,414
Prime Contract	SS/CPIF	Raytheon/ Wolburn, MA; Huntsville, AL	0	56,000	1/2Q	0	N/A	56,000
			0	0	N/A	0	N/A	
Subtotal Product Development			0	656,913		615,523		1272436
Remarks								

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Program Management								
SETA	C	Multiple to include Dynetics, BAE, & L3/ Huntsville, AL Rockville, MD & Salt Lake City, UT	0	3,206	1/2Q	4,005	1/2Q	7,211
MDA Support	C	MDA/ Arlington, VA	0	122	1/2Q	1,998	1/2Q	2,120
			0	0	N/A	0	N/A	
Integrated Logistics Support (ILS)								
SETA	C	Multiple to include Dynetics, TSA & BAE/ Huntsville, AL & Rockville, MD	0	2,568	1/2Q	4,229	1/2Q	6,797
OGA	MIPR	Multiple to include IMMC & USAADASCH/ Huntsville, AL & Ft. Bliss	0	3,794	1/2Q	2,178	1/2Q	5,972
MDA Program Support	C	MDA/ Arlington, VA	0	304	N/A	2,572	1/2Q	2,876
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	1,847	1/2Q	0	N/A	1,847

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)								
SETA	C	Multiple to include Dynetics, DCD, & Davidson Tech/ Silver Spring, MD & Huntsville, AL	0	303	1/2Q	601	1/2Q	904
OGA	MIPR	Multiple to include NRDEC, RDEC & SMDC/ Natick MA & Huntsville, AL	0	584	1/2Q	393	1/2Q	977
MDA Program Support	C	MDA/ Arlington, VA	0	246	N/A	1,661	1/4Q	1,907
			0	0	N/A	0	N/A	
Interceptor								
SETA	C	Multiple to include BAE, TSI & L3/ Huntsville, AL & Salt Lake City, UT	0	5,147	1/2Q	7,097	1/2Q	12,244
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	0	4,478	1/2Q	3,289	1/2Q	7,767
MDA Program Support	C	MDA/ Arlington, VA	0	788	1/2Q	12,925	1/2Q	13,713
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar								

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
SETA	C	Multiple to include Dynetics & GA Tech/ Huntsville, AL and GA	0	2,367	1/2Q	0	N/A	2,367
OGA	MIPR	Multiple to include CECOM, RDEC & SMDC/ Ft Monmouth NJ and Huntsville, AL	0	1,598	1/2Q	0	N/A	1,598
MDA Program Support	C	MDA/ Arlington, VA	0	1,420	1/2Q	16,789	N/A	18,209
Launcher								
SETA	C	Teledyne Solutions/ Huntsville, AL	0	748	1/2Q	700	1/2Q	1,448
OGA	MIPR	RDEC & SMDC/ Huntsville, AL	0	97	1/2Q	182	1/2Q	279
MDA Program Support	C	MDA/ Arlington, VA	0	36	1/2Q	748	1/2Q	784
			0	0	N/A	0	N/A	
System Test								
SETA	C	Multiple to include Dynetics, L3 & TSI/ Huntsville, AL	0	13,065	1/2Q	16,523	1/2Q	29,588

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
OGA	MIPR	Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC/ NM, HI, VA, & Huntsville, AL	0	64,074	1/2Q	55,848	1/2Q	119,922
MDA Program Support	C	MDA/ Arlington, VA	0	14,149	1/2Q	10,812	1/2Q	24,961
Weapon Sys Engr & Integ Team								
SETA	C	Multiple to include Dynetics, TSA and L3/ Huntsville, AL & Salt Lake City, UT	0	12,582	1/2Q	13,763	1/2Q	26,345
OGA	MIPR	Multiple to include RDEC & SMDC/ Huntsville, AL	0	14,718	1/2Q	13,023	1/2Q	27,741
MDA Program Support	C	MDA/ Arlington, VA	0	304	1/2Q	3,217	1/2Q	3,521
Fire Units #1 and #2								
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	11,630	1/2Q	0	N/A	11,630











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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis						Date February 2008		
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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
CSE	MIPR	Multiple to include CECOM, TACOM, & GSA/ Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	3,700	4Q	9,630	1/2Q	13,330
Subtotal Support Costs			0	163,875		182,183		346058
Remarks								
III. Test and Evaluation Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
System Test								
Targets			0	43,017	1/2Q	44,059	1/2Q	87,076
Subtotal Test and Evaluation			0	43,017		44,059		87076
Remarks								
IV. Management Services Cost (\$ in Thousands)								
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Program Management								
Internal Operating Budget	MIPR	THAAD/ Huntsville, AL	0	2,111	1/2Q	1,338	1/2Q	3,449
Subtotal Management Services			0	2,111		1,338		3449
Remarks								
Project Total Cost			0	865,916		843,103		1,709,019

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Testing Milestones																																
Conduct FTT-08					▲																											
Conduct FTT-09						▲	▲																									
Conduct FTT-10										▲	▲																					
Conduct FTT-11											▲	▲																				
Conduct FTT-12														▲	▲																	
Conduct FTT-13															▲	▲																
Conduct FTT-14																															▲	▲
Block 2.0																																
AN/TPY-2 Radar B4.2 S/W Formal Rel Integ at SIL						▲																										
AN/TPY-2 Radar #2 E3 Testing Complete						▲																										
Launcher Build 4 S/W Formal Release Integ at SIL						▲	▲	▲																								
Insensitive Munitions/Hazards Testing						▲	▲	▲																								
Fire Control and Comm B5 S/W Formal Rel at SIL							▲																									
Legend																																
 Significant Event (complete)  Milestone Decision (complete)  Element Test (complete)  System Level Test (complete)  Complete Activity														 Significant Event (planned)  Milestone Decision (planned)  Element Test (planned)  System Level Test (planned)  Planned Activity																		

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	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 2.0																																
Integrated Baseline Review Complete					▲																											
AN/TPY-2 Radar #2 Avail for Block Qual Test						▲																										
Fire Control & Comm B5 S/W Formal Rel of Link 16C						▲																										
Deliver Prime Power Unit (PPU) #1								▲																								
FTT-12 Interceptor (1 of 2) Delivered								▲																								
FTT-11 Interceptor Delivered								▲																								
FTT-10 Interceptors (2) Delivered								▲																								
AN/TPY-2 Radar B4.2 Formal Update Rel								▲	—	—	—	▲																				
FTT-12 Interceptor (2 of 2) Delivered								▲																								
AN/TPY-2 Radar Prime Power Unit #2 Delivered								▲																								
Fire Unit #1 Element Integ & Checkout Complete										▲																						
Element Logistics Demonstrations										▲	—	▲																				
FTT-13 Interceptor Delivered											▲																					
Legend																																
▲	Significant Event (complete)	▲	Significant Event (planned)																													
★	Milestone Decision (complete)	☆	Milestone Decision (planned)																													
◆	Element Test (complete)	◇	Element Test (planned)																													
▼	System Level Test (complete)	▽	System Level Test (planned)																													
▲—▲	Complete Activity	▲—▲	Planned Activity																													

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013								
	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 2.0																																	
FTT-14 Interceptor Delivered											▲																						
Element Weapon System Verification											▲																						
Fire Unit #2 Element Integ & Checkout Complete												▲																					
Deliveries																																	
Fire Unit #1											▲	—————	▲																				
8th Fire Unit Interceptor Delivered															▲																		
Fire Unit #2																			▲	—————	▲												

Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲—————▲	Complete Activity
▲	Significant Event (planned)
☆	Milestone Decision (planned)
◇	Element Test (planned)
▼	System Level Test (planned)
▲—————▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Testing Milestones							
Conduct FTT-08		1Q					
Conduct FTT-09		2Q-3Q					
Conduct FTT-10		4Q	1Q				
Conduct FTT-11			2Q-3Q				
Conduct FTT-12			4Q	1Q			
Conduct FTT-13				2Q-3Q			
Conduct FTT-14				3Q-4Q			
Block 2.0							
AN/TPY-2 Radar B4.2 S/W Formal Rel Integ at SIL		1Q					
AN/TPY-2 Radar #2 E3 Testing Complete		1Q					
Launcher Build 4 S/W Formal Release Integ at SIL		1Q-4Q					
Interceptor Block Qualification Test		1Q-4Q					
Insensitive Munitions/Hazards Testing		1Q-4Q	1Q				
Fire Control and Comm B5 S/W Formal Rel at SIL		2Q					
Integrated Baseline Review Complete		2Q					
AN/TPY-2 Radar #2 Avail for Block Qual Test		3Q					
AN/TPY-2 Block Qualification Test (BQT)		2Q-4Q	1Q-4Q				
Fire Control and Comm Block Qual Test (BQT)		2Q-4Q	1Q-4Q	1Q-2Q			
Fire Control & Comm B5 S/W Formal Rel of Link 16C		3Q					
Deliver Prime Power Unit (PPU) #1		4Q					
Launcher Block Qualification Test (BQT)		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q	
FTT-12 Interceptor (1 of 2) Delivered		4Q					
FTT-11 Interceptor Delivered		4Q					
FTT-10 Interceptors (2) Delivered		4Q					
AN/TPY-2 Radar B4.2 Formal Update Rel		4Q	1Q-3Q				
FTT-12 Interceptor (2 of 2) Delivered			1Q				
AN/TPY-2 Radar Prime Power Unit #2 Delivered			1Q				
Fire Unit #1 Element Integ & Checkout Complete			2Q				
Element Logistics Demonstrations			2Q-4Q				

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FTT-13 Interceptor Delivered			3Q				
FTT-14 Interceptor Delivered			3Q				
Element Weapon System Verification			3Q				
Fire Unit #2 Element Integ & Checkout Complete			4Q				
Deliveries							
Fire Unit #1			2Q-4Q	1Q-4Q			
8th Fire Unit Interceptor Delivered				2Q			
Fire Unit #2				3Q-4Q	1Q-2Q		

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment			
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
EX07 Terminal High Altitude Area Defense (THAAD) Block 5.0	0	0	0	353,415	479,115	375,362	263,803
RDT&E Articles Qty	0	0	0	0	14	2	29

Note: The content in Project EX07, Block 5.0, is a continuation of the efforts reported in Project R107, Block 2012. RDT&E Articles for Fire Units: FY10 - Buy a basic load of 48 Full-up Interceptors, 2 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars (provided by the Sensors Directorate) for Fire Units #3 and #4. FY12 - Buy 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) and 6 Launchers; Deliver 1 Full-up Interceptor for Fire Unit #3 and 1 AN/TPY-2 Radar. FY13 - Deliver 23 Full-up Interceptors for Fire Unit #3, 2 TFCC TSGs, 3 Launchers, and 1 AN/TPY-2 Radar.

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 5.0 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. In Block 5.0, THAAD's highly mobile capability provides BMDS the ability to defend against all ranges of ballistic missiles and asymmetric threats 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. Five major components (Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Model (AN/TPY-2) Radar (provided by the Sensors Directorate), THAAD Fire Control and Communication (TFCC), and THAAD-Peculiar Support Equipment) will be integrated into the THAAD element and BMDS.

Block 5.0:

Block 5.0 is the next incremental capability delivered as part of THAAD's evolutionary acquisition/development strategy. This continues the concept of a rapidly deployable configuration to support the TDS mission as well as supporting the strategic surveillance missions. Continued development will include remotely placed launchers for an improved defended area and defense against Short to Intermediate Range Ballistic Missile (IRBMs) threats, provide the capability to launch THAAD interceptors using data from other BMDS sensor elements, and expand the THAAD element's capability to provide THAAD sensor data to the BMDS. Block 5.0 also provides continued manufacturing of the Fire Unit hardware. In Block 5.0, THAAD Fire Units #3 and #4 consisting a basic load of 48 Interceptors, 6 Launchers, 2 AN/TPY-2 Radars (provided by Sensors Directorate) and 2 TFCC TSGs will be delivered.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
FIRE UNIT #3 and #4	0	0	0
RDT&E Articles (Quantity)	0	0	0

Fire Unit #3 and #4 will include a basic load of 48 Interceptors, 6 Launchers, 2 Army Navy/Transportable Radar Surveillance - Model 2s (AN/TPY-2) Radar (provided by Sensors Directorate), 4 THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs), and the required Peculiar and Common Support Equipment. The Fire Units will be fielded in FY13 and FY14 and, following operational testing, will be transitioned to the U.S. Army.

Award of the Fire Unit #3 and #4 contract has been deferred to 2010 based on FY08/09 funding shortfalls.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

THAAD follows the Missile Defense Agency (MDA) capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition in accordance with the approved MDA block structure. The acquisition strategy for Block 5.0 Fire Unit #3 and #4 will consist of a Sole Source, Fixed Price Incentive (FPI) contract targeted for award in FY10 to procure Interceptors, Launchers, THAAD Fire Control and Communication and Peculiar Support Equipment hardware. The Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radars (2) will be provided by Sensors Directorate. Block 5.0 development activities, as well as the acquisition of the Fire Units, will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
FIRE UNIT #3 and #4								
Prime Contract	SS/FPI	LMSSC/ CA, AL, AR, TX, AL, NH, IL, FL, MD	0	0	N/A	0	N/A	
Subtotal Product Development			0	0		0		0

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs								

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			0	0		0		0
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contractual Activities & Events																												
Fire Unit Fielding #3 and #4 Contract Award															▲													
Block 5.0 Development Contract Award																	▲											
Deliveries																												
Fire Unit #3																												▲
																												▲

Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲	Complete Activity
▲	Significant Event (planned)
☆	Milestone Decision (planned)
◇	Element Test (planned)
▼	System Level Test (planned)
▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Contractual Activities & Events							
Fire Unit Fielding #3 and #4 Contract Award				1Q			
Block 5.0 Development Contract Award					1Q		
Deliveries							
Fire Unit #3						4Q	1Q-4Q

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
XX07 Terminal High Altitude Area Defense (THAAD) Sustainment	0	1,148	21,796	29,591	58,021	67,516	79,815
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content in FY08-13 Project XX07 is a combination of the efforts previously reported in the Field Support and Contract Logistics Support (CLS) portions of Projects 0907, 0007 and R107.

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. Sustainment of THAAD fire units will provide logistical support of resources to operate, maintain, repair and replenish the THAAD weapon system as it transitions to an asset of the U.S. Army.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Field Support and Contract Logistics Support (CLS)	0	1,148	21,796
RDT&E Articles (Quantity)	0	0	0

Will provide the THAAD Fire Units with the logistics support resources required to field, operate and maintain the THAAD weapon system. The contractor technicians will be responsible for field and sustainment maintenance including the repair and supply chain management of the required spares and repair parts. Also, will provide engineering support services, software maintenance support, and facilitate transition of the THAAD system to the U.S. Army.

FY08 Planned Program:

- Provide THAAD Field Support/Contractor Logistics Support (CLS) to the Fire Units
- Conduct training, update training material, and develop and maintain training devices
- Provide Interactive Electronic Technical Manuals (IETMs) and Technical Data Updates
- Provide Interim Automated Information System (AIS) System for Maintenance and Supply Chain Management
- Perform Logistic and Reliability, Availability, and Maintainability (RAM)
- Perform Systems Engineering
- Begin procurement of Replenishment Spares

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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FY09 Planned Program:

- Continue to provide THAAD Field Support/CLS support to the Fire Units
- Continue to conduct training, update training material, and develop and maintain training devices
- Continue to provide IETMs and technical data updates
- Continue to provide interim AIS System for Maintenance and Supply Chain Management
- Continue to perform Logistics and RAM Analysis
- Continue to perform Systems Engineering
- Continue procurement of Replenishment Spares
- Award Field Support/CLS Contract

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

THAAD follows the Missile Defense Agency (MDA) capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition in accordance with the approved MDA block structure. There will be a Sole Source Indefinite Delivery, Indefinite Quantity (ID/IQ) Delivery Order Contract for Contractor Logistics Support for the Field Support/Contractor Logistics Support. The fielded fire units will provide a significant capability to protect deployed U.S. and allied forces, specified civilian population centers, or selected sites within the U.S.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Field Support and Contract Logistics Support (CLS)								
Prime Contract	SS/Various	LMSSC & Raytheon/ CA, TX, AL, MA, NH, IL, FL & MD	0	1,148	3/4Q	21,372	1/2Q	22,520
Subtotal Product Development			0	1,148		21,372		22520

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Field Support and Contract Logistics Support (CLS)								
GFE	MIPR	Multiple to include CECOM, TACOM, GSA, RDEC & SMDC	0	0	N/A	424	1Q	424
			0	0	N/A	0	N/A	
			0	0	N/A	0	N/A	
Subtotal Support Costs			0	0		424		424

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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III. Test and Evaluation Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			0	1,148		21,796		22,944
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Contractual Activities & Events																																
Field Support and CLS Contract Award								▲																								

Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲▼	Complete Activity
▲	Significant Event (planned)
☆	Milestone Decision (planned)
◇	Element Test (planned)
▼	System Level Test (planned)
▲▼	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Contractual Activities & Events							
Field Support and CLS Contract Award			1Q				

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY				R-1 NOMENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				0603881C Ballistic Missile Defense Terminal Defense Segment			
COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0401 Israeli Arrow Program	129,902	0	0	0	0	0	0
RDT&E Articles Qty	32	0	0	0	0	0	0

Note: In accordance with the implementation of the new Missile Defense Agency (MDA) Block Structure, funding in the following Projects for FY08-13 have transferred: Project 0401 to Project WX26 and WX34

A. Mission Description and Budget Item Justification

This project provides funding for the Arrow Weapon System (AWS) development, to include the Arrow System Improvement Program (ASIP), Co-production of Arrow Intercept Missiles, 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 Arrow Weapon System provides Israel an indigenous capability to defend against short and medium range ballistic missiles. However, the current threats for which Arrow is designed are limited in range, maneuver, and deception. ASIP is improving the AWS to counter the more advanced, emerging threats which are longer in range, much faster, have more destructive warheads that require lower defense system leakage, and are intentionally deceptive in their deployment and targeting methods during flight. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region allowing U.S. freedom of action in future contingencies. In addition to the geo-strategic goals of the Arrow cooperative effort, the United States derives considerable technical benefit from its participation in these projects. Technologies cooperatively developed under these projects provide risk reduction and alternative technologies for U.S. ballistic missile defense programs such as phenomenology and kill assessment data. Additionally, the U.S. gains from the knowledge and experience of the Israeli Defense Forces operation of a multi-layered defense architecture. U.S. participation in the Arrow development effort also ensures interoperability of the Arrow and the Israeli Missile Defense System with deployed U.S. missile defense assets. The ASIP effort will enhance the performance of the AWS to defeat longer-range and more robust ballistic missile threats expected to be introduced in the Middle East in the near future. Testing of the enhanced AWS in the U.S. against longer range threats is planned for FY09 to verify Arrow's performance and capability. 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. Co-production will continue to increase the industrial production capacity of the Arrow II interceptor.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<u>B. Accomplishments/Planned Program</u>			
	FY 2007	FY 2008	FY 2009
Arrow System Improvement Program (ASIP)	58,390	0	0
Israeli Arrow Program	2	0	0
<p>The Arrow System Improvement Program (ASIP) is a cooperative effort conducted under the ASIP International Agreement between the United States and the State of Israel. The Arrow System Improvement Program commenced on March 13, 2001 and will run through September 2009. ASIP is a follow-on effort to the Arrow Deployment Program (ADP) to assure that Arrow retains system effectiveness against evolving longer-range, more robust regional Theater Ballistic Missile (TBM) threats.</p> <p>FY07 Accomplishments: RDT&E Articles: (Two Missile Total) One Block 3.5 Arrow test missile for intercept testing and One Block 4.0 Arrow II test missile for Flyout testing.</p> <ul style="list-style-type: none"> • Conducted AST - 11 (Block 3.5 intercept of the Black Sparrow Target) and AST -12 (Block 4.0 flyout) • Conducted Joint Interoperability Exercise Juniper Cobra with Israel and U.S. forces. • Continued enhancing Arrow interoperability development and validation to include engagement coordination. • Initiated verification and validation, Phase III of the ASIP program. 			
	FY 2007	FY 2008	FY 2009
Israeli Test Bed (ITB)	3,535	0	0
RDT&E Articles (Quantity)	0	0	0
<p>The Israeli Test Bed (ITB) is a cooperative effort conducted under the Theater Ballistic Missile Defense Test Bed Memorandum of Agreement between the U.S. and Israel. The ITB program commenced on 30 March 1989. The ITB is a large scale human-in-the-loop (HIL) modeling and simulation facility for the purpose of developing, analyzing, and evaluating candidate architectures, battle management concepts, and engagement algorithms. The principal ITB facility resides at in Holon, Israel. A second ITB capability is operational at the U.S. Army's Space and Missile Defense Command in Huntsville, Alabama.</p> <p>FY07 Accomplishment:</p> <ul style="list-style-type: none"> • Designed, Coded, and Integrated software enhancements in ITB for experiments conducted in FY07 and for those planned in FY08 • Designed, Conducted and Provided analysis on ITB experiments in FY07 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<ul style="list-style-type: none"> • Used expanded models of new concepts and systems for SRBM and regional defense during combined Live exercise, and support revised Operation Plans (OPLANs) as necessary • Developed tools, interfaces and tactics for SRBMD systems · Evaluated of regional defense concepts and impacts on interoperability • Provided for a joint experiment to analyze regional defense concepts • Proceeded on plan to further modularize ITB to bring greater capability and flexibility to US/Israeli users 			
	FY 2007	FY 2008	FY 2009
Israeli Systems Architecture and Integration (ISA&I)	2,246	0	0
RDT&E Articles (Quantity)	0	0	0
<p>The Israeli Systems Architecture and Integration (ISA&I) program is a cooperative, jointly funded effort by MDA and the Israeli Ministry of Defense (IMOD) that provides analyses and options for the Arrow Weapon System (AWS) and Israeli National Missile Defense architecture. Program objectives are to assess the ballistic missile threats, provide analyses and architecture options, assess missile defense system robustness and issues, and assess Israeli and U.S. missile defense interoperability issues. The ISA&I began in FY 00 to analyze enhancements to the AWS that would be necessary for the system to maintain a robust capability against evolving regional threats. The ISA&I effort is contracted by MDA to an Israeli consulting firm.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> • Assessed IMDS performance against emerging regional ballistic missile threats. • Refined growth path options necessary for the Arrow missile defense system to remain an effective ballistic missile defense for the State of Israel. • Evaluated 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	FY 2008	FY 2009
Program Support	465	0	0
RDT&E Articles (Quantity)	0	0	0
<p>The program support task encompasses activities that support, but are not part of, the U.S./Israeli cooperative programs. These activities include the documentation of foreground and background data rights for ASIP, ITB, ADP, and legacy programs; security support to include development and maintenance of security plans and classification guides; and analysis and engineering support of the ISA&I and ITB programs. It also provides for contractor support and expertise in support of the Program Element Monitor.</p>			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> Continued documentation of background/foreground data rights for ASIP, Arrow co-production, and ITB. Maintained security plans and classification guides. Managed and supported ITB modifications and experiments. Supported Israeli and U.S. Missile Defense System integration and related test activities. 			
	FY 2007	FY 2008	FY 2009
Arrow Missile Production Program (AMPP)	46,090	0	0
RDT&E Articles (Quantity)	30	0	0
<p>The co-manufacturing project will further enhance the Arrow Weapon System by establishing a capability in the United States and the State of Israel to co-produce additional Arrow missiles or components of such missiles. The goals of the Co-production effort are to create the ability to accelerate production of Arrow missiles to meet Israel's defense requirements and advance the U.S. industrial and technology base in defensive ballistic missile producibility. The prime contractor is Israeli Aircraft Industries (IAI). Boeing is a subcontractor with ~30% work share for producing components of the Arrow II Intercept Missile.</p> <p>Note: The FY07 Defense Appropriations Act, added \$40M to Arrow Co-production which with Israeli's share of funding increases Arrow II interceptor production by ~20 additional missiles.</p> <p>FY07 Accomplishments:</p> <ul style="list-style-type: none"> Completed Option I production quantities Initiated Option II with IAI and Boeing for additional production interceptor quantities Executed production Contract Option III 			
	FY 2007	FY 2008	FY 2009
Short Range Ballistic Missile Defense (SRBMD)	19,176	0	0
RDT&E Articles (Quantity)	0	0	0
<p>Israel has a need for a wide area active defense system against the current and growing threat to Israeli civilians from short-range, relatively low tech and inexpensive ballistic missiles. The current Israeli Missile Defense Architecture (PATRIOT and Arrow) have capability against some of these short range missile threats but does not provide a cost effective defense. Israeli's recent conflict underscored the strategic effort of short range rockets and ballistic missiles.</p>			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Israel has completed its joint 18 month definition/risk reduction phase for developing a low cost SRBMD capability as an enhancement to the Arrow Weapon System. In May 2006, the Israeli Missile Defense Organization (IMDO) downselected to the David's Sling Weapon System (DSWS) proposed by Rafael/Raytheon.

The FY07 Appropriations Act, specified \$20.4M for the SRBMD joint feasibility study. Note: with the completion of the study, Israel is beginning the first phase of Full Scale Development for the David's Sling system. The \$2M in the FY07 President's Budget was used by MDA to study the military list of the David's Sling and how it could/should be integrated into the U.S. BMDS. This will be a true joint international co-development program. Unlike the historical management of the Arrow Weapon System, MDA will ensure U.S. acquisition practices are utilized during the program. While there are currently no U.S. requirements for this system, MDA will ensure system development doesn't preclude future U.S. benefits for using this system against the asymmetric threat.

FY07 Accomplishments:

- Held System Requirements Review in February
- Conducted propulsion control test with booster fly out
- Make Full Scale Development decision and begun international agreement negotiations

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Arrow acquisition strategy doesn't fall under any normal DoD Acquisition Strategy. The program is managed by an Israeli Co-Program Manager and, equal in responsibility, an U.S. Co-Program Manager. All Arrow contracts are on a cost-share basis with Israel, normally 50/50. Note that half of the Israeli share is from non-financial contributions like background information, facilities and personnel. With 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. Additionally with Arrow Missile Production, IMoD contracts on behalf of U.S. government to IAI. IAI then subcontracts to Boeing for manufacture of U.S. components. IAI manufactures Israeli components and performs final assembly. For the Israeli Test Bed, Space and Missiles Defense Command (SMDC) Huntsville contracts directly with Tadiran while IMoD provides additional funds to SMDC. Finally, MDA contracts directly with WALES, Ltd for the Israeli System Architecture and Integration.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis					Date February 2008			
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment			
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Arrow System Improvement Program (ASIP)								
Arrow System Improvement Program (ASIP)	FFP	IAI/ Israel	379,079	0	4Q	0	4Q	379,079
Israeli Test Bed (ITB)								
Israeli Test Bed (ITB)	FFP	Tadiran/ Israel	19,740	0	4Q	0	4Q	19,740
Israeli Systems Architecture and Integration (ISA&I)								
Israeli Systems Architecture and Integration (ISA&I)	FFP	Wales, Ltd/ Israel	11,689	0	4Q	0	4Q	11,689
Arrow Missile Production Program (AMPP)								
Arrow Missile Production	FFP	IAI&Boeing/ Israel&AL	273,482	0	4Q	0	4Q	273,482
Short Range Ballistic Missile Defense (SRBMD)								
Short Range Ballistic Missile Defense Study	FFP	IMDO/ Israel	30,400	0	N/A	0	N/A	30,400
Subtotal Product Development			714,390	0		0		714390

Remarks

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Program Support								
Program Support	FFP	Various/ Ala/Va	7,931	0	4Q	0	4Q	7,931
Subtotal Support Costs			7,931	0		0		7931

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 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 2008 Cost	FY 2008 Award/Oblg Date	FY 2009 Cost	FY 2009 Award/Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			722,321	0		0		722,321
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013								
	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					
Integrated Flight Test																																	
ASIP Flight Tests in Israel		▲																															
Communications																																	
Interoperability Tests				▲																													
Interoperability Field Demonstration		▲																															
Program Milestones																																	
ITB Experiments (Three each year)		▲	—	▲																													
ASIP Phase II		▲	—	▲																													
ASIP Phase III			▲	—	▲																												
ASIP Follow-On Feasibility Study			▲	—	▲																												
Production Milestones																																	
Arrow Co-Production		▲	—	▲																													
Development Milestones																																	









Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲—▲	Complete Activity
▲	Significant Event (planned)
☆	Milestone Decision (planned)
◇	Element Test (planned)
▼	System Level Test (planned)
▲—▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Development Milestones																																
Short Range Ballistic Missile Defense																																

Legend	
	Significant Event (complete)
	Milestone Decision (complete)
	Element Test (complete)
	System Level Test (complete)
	Complete Activity
	Significant Event (planned)
	Milestone Decision (planned)
	Element Test (planned)
	System Level Test (planned)
	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Integrated Flight Test							
ASIP Flight Tests in Israel	2Q		1Q				
Communications							
Interoperability Tests	4Q						
Interoperability Field Demonstration	2Q						
Program Milestones							
ITB Experiments (Three each year)	1Q-4Q						
ASIP Phase II	1Q-3Q						
ASIP Phase III	2Q-4Q						
ASIP Follow-On Feasibility Study	2Q-4Q						
Production Milestones							
Arrow Co-Production	1Q-4Q						
Development Milestones							
Short Range Ballistic Missile Defense	1Q-4Q						

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment			
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
WX26 Israeli ARROW Program	0	117,942	74,342	77,607	78,920	81,318	82,617
RDT&E Articles Qty	0	8	9	0	0	0	0

Note: In accordance with the implementation of the new Missile Defense Agency (MDA) Block Structure, funding in the following Projects for FY08-13 have transferred: Project 0401 to Project WX26 and WX34

A. Mission Description and Budget Item Justification

This project provides funding for the Arrow Weapon System (AWS) development, to include the Arrow System Improvement Program (ASIP), Co-production of Arrow Intercept Missiles, 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 Arrow Weapon System provides Israel an indigenous capability to defend against short and medium range ballistic missiles. However, the current threats for which Arrow is designed are limited in range, maneuver, and deception. ASIP is improving the AWS to counter the more advanced, emerging threats which are longer in range, much faster, have more destructive warheads that require lower defense system leakage, and are intentionally deceptive in their deployment and targeting methods during flight. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region allowing U.S. freedom of action in future contingencies. In addition to the geo-strategic goals of the Arrow cooperative effort, the United States derives considerable technical benefit from its participation in these projects. Technologies cooperatively developed under these projects provide risk reduction and alternative technologies for U.S. ballistic missile defense programs such as phenomenology and kill assessment data. Additionally, the U.S. gains from the knowledge and experience of the Israeli Defense Forces operation of a multi-layered defense architecture. U.S. participation in the Arrow development effort also ensures interoperability of the Arrow and the Israeli Missile Defense System with deployed U.S. missile defense assets. The ASIP effort will enhance the performance of the AWS to defeat longer-range and more robust ballistic missile threats expected to be introduced in the Middle East in the near future. Testing of the enhanced AWS in the U.S. against longer range threats is planned for FY09 to verify Arrow's performance and capability. 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. Co-production will continue to increase the industrial production capacity of the Arrow II interceptor.

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<u>B. Accomplishments/Planned Program</u>			
	FY 2007	FY 2008	FY 2009
Arrow System Improvement Program	0	55,000	55,000
RDT&E Articles (Quantity)	0	2	3
<p>The Arrow System Improvement Program (ASIP) is a cooperative effort conducted under the ASIP International Agreement between the United States and the State of Israel. The Arrow System Improvement Program commenced on March 13, 2001 and will run through September 2009. ASIP is a follow-on effort to the Arrow Deployment Program (ADP) to assure that Arrow retains system effectiveness against evolving longer-range, more robust regional Theater Ballistic Missile (TBM) threats.</p> <p>FY08 Planned Program: RDT&E Articles: (Two Missile Total) Two Block 4.0 Arrow test missiles for intercept testing.</p> <ul style="list-style-type: none"> • Conduct Blue Sparrow Target Flyout flight tests in Israel. • Finalize Block 4.0 configuration through Critical Design Process. • Conduct AST -13 and AST -14 (Block 4.0 intercept of Blue Sparrow Target) flight tests in Israel. • Continue enhancing Arrow interoperability development and validation to include engagement coordination. • Initiate verification and validation, Phase III of the ASIP program. <p>FY09 Planned Program: RDT&E Articles: (Three Missile Total) Three Block 4.0 Arrow test missiles for intercept testing.</p> <ul style="list-style-type: none"> • Conduct Caravan II flight tests at U.S. test range. Test will include one flight test intercepting a Long Range Air Launched Target and a second flight test of two Arrow missiles simultaneously intercepting a Short Range Air Launched target and a Liquid Fuel System Target. • Continue enhancing Arrow interoperability development and validation to include engagement coordination. • Initial Operational Capability of the Block 4.0 Arrow Weapon System • Conduct Joint Interoperability Exercise Juniper Cobra with Israel and U.S. forces. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Arrow Post-ASIP	0	20,000	0
RDT&E Articles (Quantity)	0	0	0
<p>The Arrow System Improvement Program (ASIP) is the 4th program since 1988 working with Israel to develop and improve the Arrow Weapon System. The current ASIP program will finish in 2009 with the initial operational capability of Block 4.0. MDA has planned for a subsequent development program originally designated Arrow Block 5.0. With emerging threats of WMD from regional enemy's, the Israeli Missile Defense Organization has determined a need for an upper-tier BMD system to complement the current Arrow Weapon System. They are working with Israeli industry to design an Arrow III. Meanwhile, MDA is analyzing alternatives including U.S. BMDS elements to meet the Israel defense requirements.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Risk mitigation and preliminary design activities for an upper-tier component to the Israeli Missile Defense Architecture • Joint Study on preferred upper-tier solution for Israel defense requirements (Analysis of Alternatives: U.S. BMDS element or new Arrow III) 			
	FY 2007	FY 2008	FY 2009
Arrow Missile Production Program (AMPP)	0	36,753	13,076
RDT&E Articles (Quantity)	0	6	6
<p>The co-manufacturing project will further enhance the Arrow Weapon System by establishing a capability in the United States and the State of Israel to co-produce additional Arrow missiles or components of such missiles. The goals of the Co-production effort are to create the ability to accelerate production of Arrow missiles to meet Israel`s defense requirements and advance the U.S. industrial and technology base in defensive ballistic missile producibility. While the prime contractor is an Israeli company, there is a ~30% work share with a U.S. partner for producing components of the Arrow II Intercept Missile.</p> <p>FY08 Planned Program:</p> <p>Complete Option II production quantities Initiate Option III with IAI and Boeing for final interceptor quantities production</p> <p>FY09 Planned Program:</p> <p>Complete planned production quantities</p>			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
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	FY 2008	FY 2009
Israeli Test Bed (ITB)	0	3,535	3,535
RDT&E Articles (Quantity)	0	0	0
<p>The Israeli Test Bed (ITB) is a cooperative effort conducted under the Theater Ballistic Missile Defense Test Bed Memorandum of Agreement between the U.S. and Israel. The ITB program commenced on 30 March 1989. The ITB is a large scale human-in-the-loop (HIL) modeling and simulation facility for the purpose of developing, analyzing, and evaluating candidate architectures, battle management concepts, and engagement algorithms. The principal ITB facility resides at in Holon, Israel. A second ITB capability is operational at the U.S. Army's Space and Missile Defense Command in Huntsville, Alabama.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Design, Code, and Integrate software enhancements in ITB for experiments to be conducted in FY08 and for those planned in FY09 • Design, Conduct and Provide analysis on ITB experiments in FY08 • Development of tools, interfaces and tactics for SRBMD systems • Evaluation of regional defense concepts and impacts on interoperability • Proceed on plan to further modularize ITB to bring greater capability and flexibility to US/Israeli users <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Design, Code, and Integrate software enhancements in ITB for experiments to be conducted in FY09 and for those planned in FY10 • Design, Conduct and Provide analysis on ITB experiments in FY09 • Evaluation of regional defense concepts and impacts on interoperability • Proceed on plan to further modularize ITB to bring greater capability and flexibility to US/Israeli users 			
	FY 2007	FY 2008	FY 2009
Israeli Systems Architecture and Integration (ISA&I)	0	2,215	2,286
RDT&E Articles (Quantity)	0	0	0
<p>The Israeli Systems Architecture and Integration (ISA&I) program is a cooperative, jointly funded effort by MDA and the Israeli Ministry of Defense (IMOD) that provides analyses and options for the Arrow Weapon System (AWS) and Israeli National Missile Defense architecture. Program objectives are to assess the ballistic missile threats, provide analyses and architecture options, assess missile defense system robustness and issues, and assess Israeli and U.S. missile defense interoperability issues. The ISA&I began in FY 00 to analyze enhancements to the AWS that would be</p>			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<p>necessary for the system to maintain a robust capability against evolving regional threats. The ISA&I effort is contracted by MDA to an Israeli consulting firm.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Assess IMDS performance against emerging regional ballistic missile 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. <p>FY09 Planned Program:</p> <ul style="list-style-type: none"> • Assess IMDS performance against emerging regional ballistic missile 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	FY 2008	FY 2009
Program Support	0	439	445
RDT&E Articles (Quantity)	0	0	0
<p>The program support task encompasses activities that support, but are not part of, the U.S./Israeli cooperative programs. These activities include the documentation of foreground and background data rights for ASIP, ITB, ADP, and legacy programs; security support to include development and maintenance of security plans and classification guides; and analysis and engineering support of the ISA&I and ITB programs. It also provides for contractor support and expertise in support of the Program Element Monitor.</p> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • 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. 			

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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- FY09 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.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008	
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment			
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Arrow acquisition strategy doesn't fall under any normal DoD Acquisition Strategy. The program is managed by an Israeli Co-Program Manager and, equal in responsibility, an U.S. Co-Program Manager. All Arrow contracts are on a cost-share basis with Israel, normally 50/50. Note that half of the Israeli share is from non-financial contributions like background information, facilities and personnel. With 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. Additionally with Arrow Missile Production, IMoD contracts on behalf of U.S. government to IAI. IAI then subcontracts to Boeing for manufacture of U.S. components. IAI manufactures Israeli components and performs final assembly. For the Israeli Test Bed, Space and Missiles Defense Command (SMDC) Huntsville contracts directly with Tadiran while IMoD provides additional funds to SMDC. Finally, MDA contracts directly with WALES, Ltd for the Israeli System Architecture and Integration.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Arrow System Improvement Program								
ASIP	FFP	IAI/ Israel	0	55,000	N/A	55,000	N/A	110,000
Arrow Post-ASIP								
Arrow MSE	FFP		0	20,000	N/A	0	4Q	20,000
Arrow Missile Production Program (AMPP)								
Arrow Missile Production	FFP	IAI & Boeing/ Israel&AL	0	36,753	N/A	13,076	N/A	49,829
Israeli Test Bed (ITB)								
Israeli Test Bed	FFP	Tadiran/ Israel	0	3,535	N/A	3,535	N/A	7,070
Israeli Systems Architecture and Integration (ISA&I)								
ISA&I	FFP	Wales, LTD/ Israel	0	2,215	4Q	2,286	N/A	4,501
Program Support								
Program Support	FFP	Various/ Various	0	439	N/A	445	N/A	884
Subtotal Product Development			0	117,942		74,342		192284

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs								

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 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 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			0	117,942		74,342		192,284
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDTE&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Flight Tests																																
ASIP Flight Tests in Israel					▲				▲																							
Enhanced Arrow Tests in U.S.																																
Integration and Test																																
Interoperability Tests																																
Interoperability Field Demonstration																																
Program Milestones																																
ITB Experiments (Three each year)					▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ASIP Phase III					▲	—	—	—	—	—	—	—	▲																			
ASIP Follow-On Feasibility Study					▲	—	▲																									
Arrow Missile Segment Enhancement													▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲—▲	Complete Activity
▲	Significant Event (planned)
☆	Milestone Decision (planned)
◇	Element Test (planned)
▼	System Level Test (planned)
▲—▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Flight Tests							
ASIP Flight Tests in Israel		1Q,4Q					
Enhanced Arrow Tests in U.S.			4Q				
Integration and Test							
Interoperability Tests		4Q					
Interoperability Field Demonstration			2Q				
Program Milestones							
ITB Experiments (Three each year)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
ASIP Phase III		1Q-4Q	1Q-4Q				
ASIP Follow-On Feasibility Study		1Q-2Q					
Arrow Missile Segment Enhancement			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
WX34 Short Range Ballistic Missile Defense	0	36,541	44,895	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: In accordance with the implementation of the new Missile Defense Agency (MDA) Block Structure, funding in the following Projects for FY08-13 have transferred: Project 0401 to Project WX26 and WX34

A. Mission Description and Budget Item Justification

The summer conflict between Israel and Hezbollah underscored the strategic effect of short range, inexpensive ballistic missiles attacks on civilian populations. The current Israeli Missile Defense Architecture (comprised of PATRIOT and Arrow) has capability against some of these short-range missile threats but does not provide a cost-effective defense. The goal of DSWS is to provide a lower cost (\$350K per missile) defense capability (as compared to the \$2-3M per Arrow or Patriot missile). In March 2005, Israel and the U.S. initiated a joint 18-month feasibility study of a low-cost SRBMD capability as a compliment to the Arrow Weapon System (AWS). This was followed in May 2006 by Israeli's selection of the David's Sling Weapon System for their SRBMD solution. While currently there is no U.S. requirement for a SRBMD system, MDA's mission is to defend against all ranges and all phases and does not have any programs in development to address this short-range asymmetric threat. While currently there is no intent for U.S. purchase of the DSWS, MDA plans to influence specifications and development decisions to ensure the system could be interoperable with the U.S. Ballistic Missile Defense System (BMDS) and potentially suitable for U.S. needs.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
David's Sling Weapon System	0	36,541	44,895
RDT&E Articles (Quantity)	0	0	0

The FY06 tasks were completed under the Arrow System Improvement Program Memorandum of Agreement (MOA). With the start of Full Scale Development in FY07, the David's Sling Weapon System Cooperative Program will be accomplished under a new MOA. Starting in FY08, this project is funded through this new task.

FY08 Planned Program:

- Finalize international agreement between U.S. and Israel
- Complete System and Sub-System Preliminary Design Reviews
- Continue block 1.0 design

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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- Begin RF Seeker Design work
- Conduct two interceptor flyout and configuration tests

FY09 Planned Program:

- Complete Critical Design Review of the entire David's Sling system's Detailed Design requirements Hold interception flight tests
- Deliver test launcher
- Acquire first Multi Mission Radar
- Start up Low Rate Initial Production
- Continue Block 1.0 and RF Seeker design work
- Accomplish first interception flight test

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

Negotiations are ongoing between U.S. and State of Israel on the specific agreements for this cooperative program.

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
David's Sling Weapon System								
SRBMD Program	FFP	Rafael/ Israel	0	36,541	3Q	44,895	3Q	81,436
Subtotal Product Development			0	36,541		44,895		81436

Remarks

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs								

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			0	36,541		44,895		81,436
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Remarks

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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	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
Development Milestones																																
Preliminary Design Review					▲		▲																									
Critical Design Review											▲																					
Flight Tests																																
System Demonstration							▲	▲			▲																					
System Engineering																																
Develop Initial Design					▲	—————						▲																				

Legend	
▲	Significant Event (complete)
★	Milestone Decision (complete)
◆	Element Test (complete)
▼	System Level Test (complete)
▲—▲	Complete Activity
▲	Significant Event (planned)
☆	Milestone Decision (planned)
◇	Element Test (planned)
▼	System Level Test (planned)
▲—▲	Planned Activity

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Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Development Milestones							
Preliminary Design Review		1Q,3Q					
Critical Design Review			3Q				
Flight Tests							
System Demonstration		3Q,4Q	3Q				
System Engineering							
Develop Initial Design		1Q-4Q	1Q-4Q				

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0806 PAC-3 Block 2006	2,574	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: The content previously planned in Project 0806 for FY08-13 has been captured in WX06.

A. Mission Description and Budget Item Justification

Upper Tier BM intercepts produce multiple debris tracks that increase radar loading for Lower Tier Missile Defense systems and may potentially lead to missile wastage if debris tracks are engaged. Currently fielded systems must mitigate Upper Tier Intercept Debris effects.

This effort will enable the PAC-3 element of the BMDS to manage radar resources effectively as well as preventing missile wastage on debris created by BMDS Upper Tier elements engagements, enabling a more effective management of BMDS battlespace.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
PAC-3 Debris Mitigation	2,574	0	0
RDT&E Articles (Quantity)	0	0	0

FY07 Planned Program:

- Primary SW Design, Coding and Testing of the ECP Algorithm
- Developmental and Operational Testing
- Leveraged participation in FT for ECP checkout

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2008	
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,888
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	
<u>D. Acquisition Strategy</u> The design objective of the Patriot system is to provide an element of the Ballistic Missile Defense System capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. As a result of the 17 March 2005 MDA CCB approval of ECP-0024 Upper Tier Debris Mitigation, LTPO plans to implement ECP-0024 over a 4 FY period with a projected completion date of 1QTR FY08. The implementation of ECP-0024 will be demonstrated through a series of Flight Tests. Additionally, ECP-0024 is planned for implementation in the normal LTPO Post Deployment Build cycle.		

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Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
PAC-3 Debris Mitigation								
			2,574	0	N/A	0	N/A	2,574
Subtotal Product Development			2,574	0		0		2574

Remarks
WORK IN PROGRESS

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs								

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			2,574	0		0		2,574
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Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008														
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013												
WX06 PAC-3	0	975	10,500	0	0	0	0												
RDT&E Articles Qty	0	0	0	0	0	0	0												
<p><i>Note: The content in Project WX06 is a continuation of the efforts reported in Project 0806.</i></p> <p><u>A. Mission Description and Budget Item Justification</u> PATRIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the Ballistic Missile Defense System and is now operational with the U.S. Army. It is a land-based element built upon the proven PATRIOT air and missile defense infrastructure.</p> <p>The PATRIOT Advanced Capability-3 System was deployed to the Middle East as part of Operation Iraqi Freedom where it successfully engaged several ballistic missiles.</p> <p>The Army is responsible for production and further development of Advanced Capability-3 System; the Missile Defense Agency remains responsible for the Ballistic Missile Defense System interoperability and integration efforts.</p> <p><u>B. Accomplishments/Planned Program</u></p> <table border="1"> <tr> <td></td> <td align="center">FY 2007</td> <td align="center">FY 2008</td> <td align="center">FY 2009</td> </tr> <tr> <td>PAC-3 Debris Mitigation</td> <td align="right">0</td> <td align="right">975</td> <td align="right">0</td> </tr> <tr> <td>RDT&E Articles (Quantity)</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> </tr> </table> <p>FY08 Planned Program:</p> <ul style="list-style-type: none"> • Primary SW Design, Coding and Testing of the ECP Algorithm • Developmental and Operational Testing • Leveraged participation in FT for ECP checkout 									FY 2007	FY 2008	FY 2009	PAC-3 Debris Mitigation	0	975	0	RDT&E Articles (Quantity)	0	0	0
	FY 2007	FY 2008	FY 2009																
PAC-3 Debris Mitigation	0	975	0																
RDT&E Articles (Quantity)	0	0	0																

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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	FY 2007	FY 2008	FY 2009
Evolutionary Development Program (EDP)	0	0	10,500
RDT&E Articles (Quantity)	0	0	0

FY08 Planned Program:

Efforts associated with Evolutionary Development Program (EDP) were funded in other Program Elements in FY08.

FY09 Planned Program:

The Evolutionary Development Program (EDP) has developed a capability against stressing TBM targets. Additional improvements are needed. These improvements leverage upon the incorporation of the Modernized Adjunct Processor (MAP) into the PATRIOT ECS, and is not dependent on any radar hardware improvements. This will provide increased Lower Tier Element Performance against the Evolving Aerodynamic Threats. These improvements will increase the overall effectiveness of the BMDS system. The solutions developed under this effort can potentially be applied to other BMDS systems, including US-MEADS.

C. Other Program Funding Summary

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
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PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

D. Acquisition Strategy

The design objective of the Patriot system is to provide an element of the Ballistic Missile Defense System capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems.

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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I. Product Development Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
PAC-3 Debris Mitigation			0	975	N/A	0	N/A	975
Evolutionary Development Program (EDP)								
Evolutionary Development Program	Various	Multiple	0	0	N/A	10,500	1Q	10,500
Subtotal Product Development			0	975		10,500		11475

Remarks
WORK IN PROGRESS

II. Support Costs Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Support Costs								

Remarks

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

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Test and Evaluation								

Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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IV. Management Services Cost (\$ in Thousands)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services								

Remarks

Project Total Cost			0	975		10,500		11,475
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Remarks

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification					Date February 2008		
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment			
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0602 Program-Wide Support	16,849	0	0	0	0	0	0
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: Efforts within this project continue in FY2008 and out under project ZX40

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program such as strategic planning, program integration, business management, 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 outside services and support contractors that augment government staff in these areas. Many of these costs reside within the Missile Defense Agency 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, although some functions and costs within this program element are performed by MDA employees assigned within the National Capital Region (NCR). Other costs included herein provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. 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 2007	FY 2008	FY 2009
Civilian Salaries and Support	16,849	0	0
RDT&E Articles (Quantity)	0	0	0

See Section A: Mission Description and Budget Item Justification

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification						Date February 2008		
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 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
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PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,397
PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,620
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,281
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,696
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,353
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,783	1,234,220	1,078,539	1,066,712	1,102,542	7,891,559
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,928
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PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
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PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
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UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification	Date February 2008
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment
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COST (\$ in Thousands)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
ZX40 Program-Wide Support	0	22,754	24,437	28,128	20,978	16,326	13,517
RDT&E Articles Qty	0	0	0	0	0	0	0

Note: In accordance with the Missile Defense Agency revised block structure, the content previously planned in Project 0602 for FY08-FY13 is now captured in Project ZX40.

A. Mission Description and Budget Item Justification

Program-Wide Support provides funding for common non-headquarters support functions across the entire program such as strategic planning, program integration, business management, 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 outside services and support contractors that augment government staff in these areas. Many of these costs reside within the Missile Defense Agency 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, although some functions and costs within this program element are performed by MDA employees assigned within the National Capital Region (NCR). Other costs included herein provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. 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 2007	FY 2008	FY 2009
Civilian Salaries and Support	0	22,754	24,437
RDT&E Articles (Quantity)	0	0	0

See Section A: Mission Description and Budget Item Justification

UNCLASSIFIED

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
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PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,505
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,870
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	0	0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,453	70,355	69,855	69,855	69,855	540,115

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		Date February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment	

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