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Missile Defense Agency (MDA) Exhibit R-2 RDT&l	E Budget Item Jus	tification		Date Februar	y 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototy		R-1 NOME	NCLATURE Ballistic Mis		•	efense Segm	ent
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 terminalrelated 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

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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.

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.

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.

The Arrow system (developed jointly by the U.S. and Israel) is another one of the TDS' mission area investments and provides Israel an indigenous capability to defend against short and medium range ballistic missiles and helps ensure U.S. freedom of action in future contingencies. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region.

The Arrow program consists of the following major efforts: The Arrow System Improvement Program (ASIP) is a block upgrade of the Arrow Weapon System to enhance its capabilities against evolving regional threats. The program also includes the development of Arrow co-manufacturing capability, coproduction of the interceptor and the enhancement of Arrow's interoperability with U.S. ballistic missile defense systems (BMDS) via a

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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.

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.

A.2 System Element Budget Justification and Contribution to the Ballistic Missile Defense System (BMDS)

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.

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

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Missile Defense Agency (MDA) Exhibit R-2 RDT&F	E Budget Item Justifi	cation	February 2008
APPROPRIATION/BUDGET ACTIVITY			R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component l	Development and Prototy	vpes (ACD&P)	0603881C Ballistic Missil	e Defense Terminal Defense Segment
THAAD Fire Control and Communication assets.	ons (TFCCs). Sustainm	ent provides for fi	eld support and contracto	or logistics support for the field Fire Unit
Radar using a cue from other BMDS set Units #3 and #4 consisting of a basic loa continues the field support and contractor A.3 Major System Element Goals	a rapidly deployable con ssions. Continued develo listic Missiles (IRBMs), pility to provide THAAI nsors. Block 5.0 also pro- ad of 48 Interceptors, 6 I or logistic support for fie d with the overall MDA facture THAAD capabi p enhance integrated BM BMDS Component Cap de, field and sustain THA nternational Strategy erforming and accountal sses and battle rhythm us	figuration to supp opment will include provide the capab D sensor data to the ovides continued in Launchers, 2 AN/2 elded Fire Unit hat goals to meet the lity IDS capability and oability in an incre AAD capability for oble workforce	ort the Terminal Defense le remotely placed launch bility to launch THAAD e BMDS. This adds the 7 nanufacturing of the Fire TPY-2 Radars, and 2 TFO rdware. BMDS objectives in Blo d efficiency asingly complex BMDS r Operational Testing an	e Segment (TDS) mission as well as hers for an improved defended area and interceptors from other BMDS sensor THAAD Interceptor Engage on AN/TPY-2 e Unit hardware. In Block 5.0 THAAD Fire CCs will be delivered. Sustainment
A.4 Major Events Schedule and Desch Major Event	Project Timeframe		Description	
Flight Test	1 Toject Timeframe			
Testing Milestones				
Conduct FTT-06	0907 2Q FY 2007		• FTT-06 was successful	lly conducted 26 Jan 07
Conduct FTT-05	0907 3Q FY 2007			lly conducted on 26 Jun 07
Conduct FTT-07	0907 3Q FY 2007			lly conducted on 5 Apr 07
Conduct FTT-08	BX07 1Q FY 2008			lly conducted on 27 Oct 07
	•			

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APPROPRIATION/BUDGET ACTIVITY			R-1 NOMENCLATURE
RDT&E, DW/04 Advanced Componen			0603881C Ballistic Missile Defense Terminal Defense Segment
Major Event	Project	Timeframe	Description
Conduct FTT-09	BX07	2Q FY 2008 - 3Q FY 2008	Endo intercept of separating target
Conduct FTT-10	BX07	4Q FY 2008 - 1Q FY 2009	Salvo exo intercept of separating target unconstrained (DT/OT mission)
Conduct FTT-11	BX07	2Q FY 2009 - 3Q FY 2009	• Exo atmospheric intercept of a lofted spin-stabilized reoriented separating targe (slipped one quarter due to target availability)
Conduct FTT-12	BX07	4Q FY 2009 - 1Q FY 2010	• 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	• 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	• 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	• FTT-08 was successfully conducted on 27 Oct 07
Contractual Activities & Events			
Fire Unit Fielding #1 and #2 Contract Award	0007	1Q FY 2007	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	Manufacture 1 Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar
Fire Unit #1 and #2 Contract Award	0907	1Q FY 2007	Manufacture 24 Interceptors; 3 Launchers
Fire Unit Fielding #3 and #4 Contract Award	EX07	1Q FY 2010	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	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	• 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	 A basic load of 24 Interceptors; 3 Launchers; 1 Army Navy/Transportable Rada 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

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				NOMENCLATURE 3881C Ballistic Missile Defense Terminal Defense Segment	
Major Event	Project	Timeframe			Description
Fire Unit #3	EX07	4Q FY 2012	- 4Q FY 2013		• 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	9
Previous President's Budget (FY 2008 PB)		1,092,076	962,585	1,004,2	282
Current President's Budget (FY 2009 PB)		1,082,454	1,045,276	1,019,0	073
Total Adjustments		-9,622	82,691	14,7	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	14,7	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.

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APPROPRIATION/BUDGET ACTIVITY		R-1 NOME	NCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes	s (ACD&P)	0603881C	Ballistic Mi	ssile Defense	e Terminal D	efense Segm	ent
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
Note: The content providuely planned in Project 0007 Plack 2008	for EV08 13	has been a	anturad in D	raigat RV07	Plack 20	and VV07	

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.

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.

RDT&E Articles for Fire Unit: FY07 - Bought 24 Full-up Interceptors, 2 Full-up Interceptors for Test and 3 Launchers.

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 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.

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.

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APPROPRIATION/BUDGET ACTIVITYR-1 NOMENCLATURERDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)R-1 NOMENCLATURE0603881C Ballistic Missile Defense Terminal Defense Segment
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 usef 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

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 Continued Supportability Strategy/Manpower Estimate Report (Continued development of Interactive Electronics Training Man 	uals (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) The THAAD Fire Control and Communication (TFCC) is composed		2	0	0
 is interoperable with external air and interceptor defense and intellig (BMDS). FY07 Accomplishments: RDT&E Articles: Delivered 2 TFCC TSGs Conducted Soldier Tactical move of TFCC to Pacific Missile Ra 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 up Participated in BMDS Integration with Aegis at PMRF Continued Link 16C Communication Enhancements Software B 	ange Facility ogrades to ve	(PMRF)		Aissile Defense System

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Missile Defense Agency (MDA) Exhibit R-2A RDT&	E Project Justi			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototype	$a_{\rm C}$ (A CD $\theta_{\rm C}$ D)	R-1 NOMENCLATU	: Missile Defense Termin	al Defense Segment
RD1 &E, Dw/04 Advanced Component Development and Prototype	es (ACD&P)	0003881C Ballisue	: Missue Defense Termin	al Defense Segment
	F	Y 2007	FY 2008	FY 2009
Interceptor		265,637	0	0
RDT&E Articles (Quantity)		4	0	0
The THAAD Interceptor is a certified round that is propelled by a	single-stage,	solid-propellant roc	ket booster. Its kill vehic	cle possesses a Divert and
Attitude Control System (DACS) and an infrared seeker used to d	0 0	1 1		
 flight testing Continued fabrication, assembly, and test of hardware for fligh Completed Interceptor Block Process Validation Completed Formal Release of interceptor software Completed flight tests at White Sands Missile Range (WSMR) Completed interceptor contractor Qualification Testing Continued obsolescence upgrade for interceptor hardware 		-		ty (PMRF)
	F	Y 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
 The AN/TPY-2 Radar is a solid state, phased array radar capable of AN/TPY-2 Radar uses fence, volume, and cued search modes, and communications, and hit assessment data collection for the fire co antenna equipment unit, electronics equipment unit, cooling equip FY07 Accomplishments: RDT&E Articles: Delivered 1 AN/TPY-2 Radar Delivered and completed integration of AN/TPY-2 Radar #2 a Conducted Soldier Tactical move of AN/TPY-2 Radar #1 to P 	d provides sur ontrol. The AN oment unit, and at White Sands	veillance, acquisitio //TPY-2 Radar hard d the prime power u s Missile Range (W	n, track, discrimination, ware is a transportable synit. SMR)	interceptor
Project: 0907 Terminal High Altitude Area Defense (THAAD) Block 2008			١	/IDA Exhibit R-2A (PE 0603881C)

Missile Defense Agency (MDA) Exhibit R-2A RDT&E				
Missila Dafansa Aganay (MDA) Exhibit D 2A DDT&E 1			Date	
	Project Justifi		February 2008	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLATU		
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603881C Ballistic	Missile Defense Terminal	Defense Segment
• Supported flight testing at PMRF				
• Continued development and conducted Design Readiness Review	w 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 				
• Waintained Formar Release of Software Dund 4.1				
	FY	2007	FY 2008	FY 2009
Launcher		12,321	0	
RDT&E Articles (Quantity)		1	0	
 RDT&E Articles: Delivered 1 Launcher Completed flight testing at White Sands Missile Range (WSMR) Completed Formal Release of Launcher Software Build 3 Continued development and conducted Design Readiness Review 		ed flight testing at l	Pacific Missile Range Fac	ility (PMRF)
 Continued development and conducted Design Readiness Review Continued System Integration Laboratory (SIL) Hardware-in-the flight test Conducted Soldier Tactical move of Launcher to PMRF Initiated buy of 1 Launcher 	e Loop (HW)		ities of hardware and soft	ware in preparation fo

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (<u>v</u>	R-1 NOMENCLATU	, i i i i i i i i i i i i i i i i i i i	al Defense Segment
	FY	7 2007	FY 2008	FY 2009
System Test		177,099	0	
RDT&E Articles (Quantity)		0	0	
 preparations, documentation requirements, data analysis and reportin FY07 Accomplishments: Continued test planning and range operations for flight testing Completed flight testing at White Sands Missile Range (WSMR) Participated in Targets planning and Target requirements for flight Conducted Ballistic Missile Defense System (BMDS) integrated Initiated E3 interceptor and launcher Design Verification Test (D Initiated support of Target Launch Platform in support of flight test Initiated planning for element level Government BQT Continued LFT&E program and conducted Sled tests at Holloma Continued to conduct Radar Data Collection (RDC) missions at F 	and condu- ht test prog- tests at PM VT)/Block ests n AFB, NM	ram RF with Aegis Qualification Test (C	Facility (PMRF)

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APPROPRIATION/BUDGET ACTIVITY	110jeer sustri	R-1 NOMENCLATU		
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)		c Missile Defense Terminal I	Defense Segment
	FY	¥ 2007	FY 2008	FY 2009
Weapon Sys Engr & Integ Team		68,789	0	
RDT&E Articles (Quantity) Responsible for all engineering efforts required to translate approve		0	0	
 engineering to include independent verification and validation, conf working through the Integrated Process Team (IPT) process on a ba isk management and security for the THAAD program. FY07 Accomplishments: Completed flight testing at White Sands Missile Range (WSMR Continued supporting pre-flight testing in the System Integration Continued System Analysis in support of flight testing Continued validation of the end-to-end digital simulation using in Initiated element characterization analysis Continued planning the integration and implementation of THA Performed SIL HWIL integration of Formal Release of Intercep and THAAD Radar Software Build 4 for integrated flight test Continued participating in wargames, exercises and interoperable 	and control and contin n Laboratory flight test da AD and its cotor Software	ued flight testing at (SIL) Hardware-in ta components in the B Build 7, Launcher	eam. Additionally responsib Pacific Missile Range Faci the-Loop (HWIL) facility	ble for all aspects of lity (PMRF)

Missila Dofonsa Aganay (MDA) Fyhihit D 24 DDT&E	Drajaat Justif	instian	Date February 2008	
Missile Defense Agency (MDA) Exhibit R-2A RDT&E APPROPRIATION/BUDGET ACTIVITY	² Project Justii	R-1 NOMENCLAT	l l	
RDT&E , DW/04 Advanced Component Development and Prototypes			URE ic Missile Defense Termina	al Dofonso Sogmont
KD1 &E, DW/04 Advanced Component Development and Frototypes	(ACD&I)	0003001C Damst	ic missue Defense Termina	ar Derense Segment
	F	2007	FY 2008	FY 2009
Fire Unit #1		129,128	0	0
RDT&E Articles (Quantity)		0	0	(
 contract), the required Peculiar and Common Support Equipment, a will be fielded in FY09 and, following operational testing, will be t FY07 Accomplishments: Initiated the fabrication and assembly of component hardware Initiated redesign of assemblies with obsolescence or pure tin h Initiated the procurement of Government Furnished Equipment Initiated and completed the Integrated Baseline Review (IBR) Initiated buy of 24 interceptors, and 3 launchers for Fire Unit # 	ransitioned to ardware (GFE) to suj	o the U.S. Army.		
• Initiated buy of 2 interceptors for development tests	E	2007	FY 2008	FY 2009
Program Management	1.1	33,551	0	0
RDT&E Articles (Quantity)		0	0	0
 Program Management provides support functions across the progra and financial management to include preparation of financial statem Accounting Service (DFAS), internal review and audit, earned-valu FY07 Accomplishments: Completed support of flight test program at White Sands Missil Range Facility (PMRF) Provided management, leadership, and planning for all Block 20 Provided salaries, travel, training, supplies, rental and project-w Continued to provide project-wide programmatic support 	nents, reimbu ue manageme le Range (WS 008 activities	SMR) and continue	al services provided by D sessments.	Defense Finance
Project: 0907 Terminal High Altitude Area Defense (THAAD) Block 2008			N	IDA Exhibit R-2A (PE 0603881C)

Miggila Dafanga Aganay (MDA)	E	DT & F Droico	t Instificatio	-	Date	ruary 2008		
Missile Defense Agency (MDA) I APPROPRIATION/BUDGET ACTIVITY	EXHIDIL K-ZA K	DI &E Projec		NOMENCLAT		Tuary 2000		
RDT&E, DW/04 Advanced Component Developm	nent and Prot	totypes (ACD		3881C Ballisti		ence Termina	l Defense Sea	ment
C. Other Program Funding Summary		otypes (102		JUUIC Dumou			I Derense sve	Incirc
C. Other I rogram Funding Summary	r	t		1		i		Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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	2 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	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	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	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

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

D. Acquisition Strategy

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.

APPROPRIATION/BUDGET A		y (MDA) Exhibit R-3	RD I GL I I Ofte	t 005t 111		OMENCLATUR	Februar	<i>j</i> 2 000		
RDT&E, DW/04 Advanced		Development and Pi	rototypes (AC]							
I. Product Development	-	*			00000					
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 20 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	55/011		504,194		0	1.171	0	14/24	504,174	
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 System Test	SS/CPIF	LMSSC/ Huntsville, AL & Lufkin, TX	85,239		0	N/A	0	N/A	85,239	

Missile D	efense Agenc	ey (MDA) Exhibit R-3	RDT&E Projec	t Cost Analy	ais	Date Februa r	rv 2008			
APPROPRIATION/BUDGET A		(1,12,12)	10		1 NOMENCLATU		<u> </u>			
RDT&E, DW/04 Advanced (Development and F	rototypes (AC		0603881C Ballistic Missile Defense Terminal Defense Segment					
	1				FY 2008		FY 2009			
	Contract	Performing	Total		Award/		Award/			
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost		
		LMSSC/		-						
	1	Sunnyvale, CA;								
Prime Contract	SS/CPIF	Huntsville, AL; NM & HI	199 702		0 N/A	0	N/A	199 702		
	55/CPIF	NM & HI	188,792	0	/ IN/A		N/A	188,792		
Weapon Sys Engr & Integ Team	 	LMSSC/								
	1									
Prime Contract	SS/CPIF	Sunnyvale, CA & Huntsville, AL	188,356	C	0 N/A	0	N/A	188,356		
Fire Unit #1	55/011				/			100,550		
	1	LMSSC &/			++					
	1	CA, TX, AL, NH,								
Prime Contract	SS/CPIF	IL, FL & MD	121,018	C	0 N/A	0	N/A	121,018		
Subtotal Product Development	1		3,249,598		0	0		3249598		
Remarks	·	<u> </u>	<u>.</u>		<u> </u>	.	ł			
Numur No										
II. Support Costs Cost (\$	¢ in Thouse	ande)								
n. Support Costs Cost (4			T		FY 2008		FY 2009			
	Contract	Performing	Total		Award/		Award/			
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost		
Integrated Logistics Support (ILS)										
		Multiple to include Dynetics, TSA & BAE/								
	1	Huntsville, AL &								
SETA	С	Rockville, MD	11,773	C	0 N/A	0	N/A	11,773		

	<u> </u>	y (MDA) Exhibit R-3	KDI &E Projec	ci Cost Ai			Februar	y 2008		
APPROPRIATION/BUDGET AC				R-1 NOMENCLATURE ACD&P) 0603881C Ballistic Missile Defense Terminal Defense Segment						
RDT&E, DW/04 Advanced C	component	Development and P	rototypes (AC	D&P)	06038		Vlissile Defense		ense Segment	
	Contract Method	Performing Activity &	Total PYs	FY 20	סר	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total	
Cost Categories:	& Type	Location				Date	Cost	Date	Cost	
OGA OGA	MIPR	Multiple to include IMMC & USAADASCH/ Huntsville, AL & Ft. Bliss	54,258	Cost Cost 54,258		N/A	0	N/A	54,258	
MDA Program Support	С	MDA/ Arlington, VA	3,249		0	N/A	0	N/A	3,249	
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)		Allington, VA	3,247		0				3,249	
		Multiple to include Dynetics, DCD, & Davidson Tech/								
SETA	С	Silver Spring, MD & Huntsville, AL	4,945		0	N/A	0	N/A	4,945	
		Multiple to include NRDEC, RDEC & SMDC/ Natick MA &								
OGA	MIPR	Huntsville, AL	12,941		0	N/A	0	N/A	12,941	
MDA Program Support	С	MDA/ Arlington, VA	1,507		0	N/A	0	N/A	1,507	
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/								
GFE	MIPR	Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	11,072		0	N/A	0	N/A	11,072	
Interceptor		,	, .				-		,	

	a b						Date	2000			
Missile D		y (MDA) Exhibit R-3	RDT&E Projec	et Cost Ar			Februar	ry 2008			
RDT&E, DW/04 Advanced (Development and H	Prototypes (AC	D&P)	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment						
			iototypes (iie	Dui)	0005	FY 2008		FY 2009	tense segment	1	
	Contract	Performing	Total			Award/		Award/			
	Method	Activity &	PYs	FY 20	08	Oblg	FY 2009	Oblg	Total		
Cost Categories:	& Type	Location	Cost	Cost	:	Date	Cost	Date	Cost		
		Multiple to include BAE, TSI & L3/									
SETA	С	Huntsville, AL & Salt Lake City, UT	35,772		0	N/A	0	N/A	35,772		
		Multiple to include RDEC & SMDC/								1	
OGA	MIPR	Huntsville, AL	34,807		0	N/A	0	N/A	34,807		
		MDA/								1	
MDA Program Support	С	Arlington, VA	9,301		0	N/A	0	N/A	9,301		
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar											
		Multiple to include Dynetics & GA Tech/									
SETA	С	Huntsville, AL and GA	11,108		0	N/A	0	N/A	11,108		
		Multiple to include CECOM, RDEC & SMDC/									
OGA	MIPR	Ft Monmouth NJ and Huntsville, AL	13,793		0	N/A	0	N/A	13,793		
		MDA/									
MDA Program Support	С	Arlington, VA	3,816		0	N/A	0	N/A	3,816		
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/									
CEE	MIDD	Ft Monmouth, NJ, Warren, MI, &				NT/A		NT/4	(2)		
GFE	MIPR	Huntsville, AL	636		0	N/A	0	N/A	636	-	
Launcher]	

APPROPRIATION/BUDGET A						IOMENCLATUR		T 1 1 D 4	a i
RDT&E, DW/04 Advanced	Component	Development and H	Prototypes (AC	(D&P)	0603		Missile Defense	e Terminal Defe	ense Segment
	Contract Method	Performing Activity &	Total PYs	FY 2008		FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost
SETA	С	Teledyne Solutions/ Huntsville, AL	3,811	Cost		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	С	MDA/ Arlington, VA	697		0	N/A	0	N/A	697
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, &	4 100		0	N/4		N/4	4.122
GFE	MIPR	Huntsville, AL	4,122		0	N/A	0	N/A	4,122
System Test		Multiple to include Dynetics, L3 & TSI/							
SETA	C	Huntsville, AL Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC/	21,804		0	N/A	0	N/A	21,804
OGA	MIPR	NM, HI, VA, & Huntsville, AL	102,029		0	N/A	0	N/A	102,029
MDA Program Support	С	MDA/ Arlington, VA	10,852		0	N/A	0	N/A	10,852

					_		Date	2 000			
		y (MDA) Exhibit R-3	RDT&E Projec	ct Cost An			Februar	ry 2008			
APPROPRIATION/BUDGE RDT&E, DW/04 Advance		Development and I	Prototynes (AC	'D&P)	R-1 NOMENCLATUREP) 0603881C Ballistic Missile Defense Terminal Defense Segment						
RD I CL, D WIGH MUVAIL			Tototypes (me	Dar)	0005	FY 2008		FY 2009	inse beginene		
	Contract	Performing	Total			Award/		Award/			
	Method	Activity &	PYs	FY 200	08	Oblg	FY 2009	Oblg	Total		
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost		
cost categories.	a type	Multiple to include	0000	0000		2	0000	2			
		Dynetics, TSA and L3/									
		Huntsville, AL &									
SETA	С	Salt Lake City, UT	67,565		0	N/A	0	N/A	67,565		
		Multiple to include RDEC & SMDC/									
OGA	MIPR	Huntsville, AL	58,854		0	N/A	0	N/A	58,854		
		MDA/									
MDA Program Support	С	Arlington, VA	5,172		0	N/A	0	N/A	5,172		
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/									
GFE	MIPR	Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	2,504		0	N/A	0	N/A	2,504		
Fire Unit #1		,			-				y		
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/									
GFE	MIPR	Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	8,110		0	N/A	0	N/A	8,110		
		Multiple to include CECOM, TACOM, & GSA/									
CSE	MIPR	Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0		0	N/A	0	N/A			
	MIPK	nuinsvine, AL	0		U	IN/A	0	IN/A			
Program Management											

Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost Analysis February 2008 APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) Provention of the state of	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603881C Ballistic Missile Defense Terminal Defense Contract Performing Total Prive FY 2008 Award/ Award/ Cost Categories: & Type Location Cost Cost Date Cost Date Oblg FY 2008 Award/ Date Date <th></th>	
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Contract Method & TypePerforming Activity & PYsTotal PYsPY 2008 FY 2008 OhlgAward/ OhlgAward/ OhlgCost Categories:& TypeLMSSC/ Sumnyvale, CA/ Sumnyvale, CA/ Subotal Support CostsLMSSC/ Image CostDateDatePrime Contract Subotal Support CostsSS/CPIF Huntsville, AL126,2210N/A0N/ARemarksIII. Test and Evaluation Cost (\$ in Thousands)Contract ContractPerforming MethodTotal Activity & PYsFY 2008 Award/ PYsFY 2008 Award/ OhlgFY 2009 Award/ Award/ OhlgCost Categories: System TestPerforming MethodTotal Activity & PYsFY 2008 PYsPY 2009 OhlgOhlg PY 2009 OhlgStotal PrisPerforming MethodActivity & System TestPrisTotal PYsFY 2008 PYsPY 2009 OblgOhlgTargets Subrotal Test and Evaluation000Image Cost (\$ in Thousands)Interforming Activity & Subrotal Test and EvaluationPerforming Activity & PYsFY 2008 PY 2009PY 2009 Award/ Award/ Award/ Award/ Award/ DotContract Performing & Cost Categories: & K TypePerforming LocationFY 2008 CostPY 2009 Award/ Award/ Award/ Award/ Award/ 	ise beginent
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Cost Categories:& TypeLocationCostCostDateCostDatePrime ContractSS/CPIFHuntsville, AL126,2210N/A0N/ASubtotal Support Costs0625,1540000RemarksContractSS/CPIFHuntsville, AL126,2210N/A0N/ARemarksContractPerforming MethodTotal Activity & PYsFY 2008 FY 2008Oblg OblgFY 2009 OblgOblgSystem TestTargets0N/A0N/ASubtotal SequenceContract MethodPerforming Activity & PYsFY 2008 FY 2008Oblg OblgFY 2009 OblgOblotal Test and Evaluation0N/AOtalFY 2009 CostContract RemarksPerforming TotalTotal Performing PysFY 2008 FY 2008 OblgFY 2008 Pys OblgFY 2009 Award/ Award/ OblgOtal Contract WethodPerforming Activity & PysFY 2008 Pys Stotal Test and EvaluationFY 2009 Award/ OblgOtal Contract Wethod Activity & CostPry 2008 CostPy 2008 OblgPy 2009 Award/ OblgOtal Performing Activity & DotalPy 208 CostPy 208 OblgPy 209 OblgOtal Cont	Total
O D LMSSC/ Sumyvale, CA/ Huntsville, AL 126.221 0 N/A 0 N/A Subtotal Support Costs 5X/CPIF Huntsville, AL 126.221 0 N/A 0 N/A Remarks 625,154 0 0 0 0 0 0 Remarks Contract Performing Method Activity & FY 2008 FY 2008 FY 2009 Award/ Method Activity & Type Location Cost Cost Date Cost System Test Targets 22,299 0 N/A 0 N/A Subtotal Test and Evaluation 22,299 0 N/A 0 N/A State Cost (\$ in Thousands) Cost Categories: & Type Location Cost Cost Date Cost Subtotal Test and Evaluation 22,299 0 N/A 0 N/A State Evaluation Contract Performing Method Activity & PY's FY 2008 Award/ Cost Categories: & Type Location Cost Cost Date Cost Cost Cost (\$ in Thousands) Cost Categories: & Type Location </td <td>Cost</td>	Cost
Prime Contract SS/CPIF Sunnyvale, CA/ Huntsville, AL 126,221 0 N/A 0 N/A Subtotal Support Costs 0 0 0 0 0 0 0 Remarks III. Test and Evaluation Cost (\$ in Thousands) Contract Performing Method Total Activity & FY 2008 PYs FY 2008 Oblg FY 2009 Award/ Award/ Award/ System Test 0 0 0 0 0 Targets 0 0 0 0 0 Subtotal Test and Evaluation 0 0 0 0 System Test 0 0 0 0 0 Targets 0 0 0 0 0 Subtotal Test and Evaluation 0 0 0 0 Remarks 0 0 0 0 0	031
Prime ContractSS/CPIFHuntsville, AL126,2210N/A0N/ASubtotal Support Costs000000RemarksIII. Test and Evaluation Cost (\$ in Thousands)FY 2008FY 2008FY 2009Award/ContractPerformingTotalPYsFY 2008OblgFY 2009OblgActivity &PYsFY 2008OblgFY 2009OblgCost Categories:& TypeLocationCostCostCostDateSubtotal Test and Evaluation122,2990N/AN/ASubtotal Test and Evaluation22,2990N/A0N/ASubtotal Test and Evaluation22,2990N/A0N/ASubtotal Test and Evaluation22,2990000RemarksContractPerforming Method Activity & EvaluationTotal PYsFY 2008 PYsFY 2009 Award/ 	
Subtotal Support Costs O O O Remarks III. Test and Evaluation Cost (\$ in Thousands) Contract Performing Total FY 2008 Award/ FY 2009 Award/ Cost Categories: & Type Location Cost Cost Cost Date Cost Date Date Subtotal Support Test 22,299 0 N/A 0 N/A Subtotal Test and Evaluation Cost (\$ in Thousands) Z2,299 0 N/A 0 N/A Subtotal Test and Evaluation Cost (\$ in Thousands) Z2,299 0 N/A 0 N/A Remarks Evaluation Z2,299 0 N/A 0 N/A Remarks Evaluation Z2,299 0 N/A 0 N/A Subtotal Test and Evaluation Cost (\$ in Thousands) Evaluation Z2,299 0 N/A 0 Pry 2009 Award/ Pry 2009 Award/ Oblg FY 2009 Award/ Oblg Pry 2009 Oblg Date Date Date	126,221
Remarks III. Test and Evaluation Cost (\$ in Thousands) Contract Performing Total FY 2008 Award/ Award/ Method Activity & PYs FY 2008 Oblg FY 2009 Oblg Cost Categories: & Type Location Cost Cost Date Cost Date System Test Targets 22,299 0 N/A 0 N/A Subtotal Test and Evaluation Cost Categories: Cost (\$ in Thousands) 0 0 0 Remarks IV. Management Services Cost (\$ in Thousands) Cost Categories: Contract Performing Total FY 2008 FY 2009 Award/ Award/ Award/ Award/ Award/ Detect Evaluation Evaluation Evaluation Detect FY 2009 Detect Evaluation Evaluation Evaluation Detect FY 2009 Oblg FY 2009 Award/ Oblg FY 2009 Oblg Evaluation Evaluation Evaluation Evaluation Eval	625154
III. Test and Evaluation Cost (\$ in Thousands) III. Test and Evaluation Cost (\$ in Thousands) Total Performing Pris Total Pris FY 2008 Award/ Award/ Award/ Oblg FY 2009 Oblg Award/ Award/ Award/ Award/ Activity & Pris FY 2008 Cost Cost Date Cost Date Date <thdate< th=""></thdate<>	
Contract MethodPerforming Activity & Bysen TestTotal PYsFY 2008 FY 2008FY 2009 Award/ OblgFY 2009 Award/ OblgSystem Test </th <th></th>	
Contract MethodPerforming Activity & Activity & ByseTotal PYsAward/ FY 2008 CostAward/ OblgAward/ OblgCost Categories:& TypeLocationCostCostOblgFY 2009 DateOblgDateSystem TestImage CostImage Cost	
Method & TypeActivity & LocationPYs CostFY 2008 CostOblg DateFY 2009 CostOblg DateSystem Test<	
Cost Categories:& TypeLocationCostCostDateCostDateSystem Test <t< td=""><td>Total</td></t<>	Total
System TestImage: Construct of the system Test of the system Tes	Cost
Targets122,2990N/A0N/ASubtotal Test and Evaluation22,2990000RemarksIV. Management ServicesCost (\$ in Thousands)ContractPerformingTotalFY 2008FY 2009Award/ MethodActivity & Activity & PYsFY 2008OblgFY 2009Cost Categories:& TypeLocationCostCostDateSubtotal Management ServicesImage: Cost CostImage: Cost CostImage: Cost CostImage: Cost CostProject Total CostImage: Cost CostImage: Cost Cost CostImage: Cost Cost CostImage: Cost Cost Cost Cost CostImage: Cost Cost Cost Cost Cost Cost Cost Cost	Cost
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Remarks IV. Management Services Cost (\$ in Thousands) IV. Management Services Contract Performing Contract Performing Total Method Activity & PYs FY 2008 Oblg FY 2009 Oblg Oblg FY 2009 Oblg Oblg Oblg Subtotal Management Services Location Cost Remarks 3,897,051 0 0	22,299
IV. Management Services Cost (\$ in Thousands) Contract Performing Total FY 2008 FY 2009 Method Activity & PYs FY 2008 Oblg FY 2009 Cost Categories: & Type Location Cost Cost Date Cost Subtotal Management Services Image: Cost Cost Cost Image: Cost Cost Cost Cost Cost Cost Cost Image: Cost Cost Cost Cost Cost Cost Cost Cost	
Contract MethodPerforming Activity & & TypeTotal PYsAward/ FY 2008Award/ OblgAward/ OblgCost Categories:& TypeLocationCostCostDateCostDateOblgSubtotal Management ServicesImage: Cost Categories in the service in the servi	
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Remarks	

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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D											R		ОМЕ 8 81 С							v			l De	fens	e Se	gme	ent	
Fiscal Year		-)07)08	(09				010)11)12			U)13	
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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		▲																										\square
FTT-07 Interceptor Delivered																												
FTT-05 Interceptor Delivered																												
FTT-08 Interceptor Delivered																												
Interceptor S/W Build 7.0 Formal Rel Integ at SIL				▲																								Π
Insensitive Munitions/Hazards Testing						Δ																						
FTT-09 Interceptor Delivered						Δ																						
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D	evelo	opm	ent :	and	Pro	toty	pes	(AC	D&	P)		-1 N(5 038						le D	efen	se T	ern	nina	l Def	fens	e Se	gme	nt	
Fiscal Year		20	07			20	08			20)09			20	010			20)11			20	012			20	13	
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Contractual Activities & Events					_			-	_													_			_			
Fire Unit #1 and #2 Contract Award																												
		•	Sian	ifican	t Eve	nt (co	mplet	e)		L	egei	nd ∆		Sian	ifican	t Evei	nt (pla	anned)			-						
			Mile	stone	e Deci Test (d	ision (com					<u></u>	3	Mile	stone nent T	e Deci	ision	(planr				-						
			Syst	em Le	evel T	est (c		ete)					7	Syst	em Le	evel T	est (p		ed)									
	▲		Com	nplete	Activ	/ity						Δ		Plan	ned A	ctivit	y											

RDT&E, DW/04 Advanced Component Development Schedule Profile Cesting Milestones Conduct FTT-06	-	Prototypes (ACI		MENCLATURE	sile Defense Ter	minal Defense So	egment
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
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				ĺ		
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						

				Date			
Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Justif	fication		Februar	y 2008		
APPROPRIATION/BUDGET ACTIVITY		R-1 NOME	INCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603881C	Ballistic Mis	ssile Defense	e Terminal D	efense Segm	ent
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
	A		1.1 5			1 1 1 1 1 0 7	

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.

RDT&E Articles for Fire Unit: FY07 - Bought 1 Army Navy/Transportable Radar Surveillance - Model 2 (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. 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.

Block 2010:

Block 2010 provides continued manufacturing of Fire Unit hardware.

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Justifi	ication	Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	R-1 NOMENCL 0603881C Bal	.ATURE listic Missile Defense Termi	nal Defense Segment
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 Launcher Model 2 (AN/TPY-2) Radar (provided by the Sensors Directorate), (TSGs), and the required Peculiar and Common Support Equipment transitioned to the U.S. Army.	2 THAAD F	Fire Control and	Communication (TFCC)	Factical Station Groups
 FY07 Accomplishments: Initiated buy of long lead items for 1 AN/TPY-2 Radar 				

C. Other Program Funding Summary

								Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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

Missile Defense Agency (MDA)	Exhibit R-2A I	RDT&E Projec	et Justific	ation		Date Feb	ruary 2008		
APPROPRIATION/BUDGET ACTIVITY	D				IOMENCLAT		- T	1 D.f	
RDT&E, DW/04 Advanced Component Develop	ment and Pro	totypes (ACD	(&P)	0603	881C Bailisti	c Missile Def	ense Termina	al Defense Seg	
			I						Total
	FY 2007	FY 2008	FY 200	09	FY 2010	FY 2011	FY 2012	FY 2013	Cost
PE 0603897C BMD Hercules	46,268	52,462	55	5,955	55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69	9,982	73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations									
Center	104,389	78,557	96	5,404	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	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	9,734	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86	5,453	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.

I. Product Development	Cost (\$ in T	housands)						
*		,			FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Fire Unit #2								
		Raytheon/						
Prime Contract	SS	MA, AL	20,000	0	N/A	0	N/A	20,000
Subtotal Product Development			20,000	0		0		20000
II. Support Costs Cost	(\$ in Thousar	nds)			FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
	method	i teti vity ee	115	11 2000	0015	11200)	0015	rotui
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Cost Categories: Subtotal Support Costs	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Support Costs	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Support Costs	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
-			Cost	Cost	Date	Cost	Date	Cost
Subtotal Support Costs Remarks		'housands)	Cost	Cost	Date FY 2008	Cost	Date FY 2009	Cost
Subtotal Support Costs Remarks	Cost (\$ in T	'housands) Performing	Total		FY 2008 Award/		FY 2009 Award/	Cost
Subtotal Support Costs Remarks III. Test and Evaluation	Cost (\$ in T Contract Method	Performing Activity &	Total PYs	FY 2008	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total
Subtotal Support Costs Remarks III. Test and Evaluation Cost Categories:	Cost (\$ in T	'housands) Performing	Total		FY 2008 Award/		FY 2009 Award/	
Subtotal Support Costs Remarks III. Test and Evaluation	Cost (\$ in T Contract Method	Performing Activity &	Total PYs	FY 2008	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total

APPROPRIATION/BUDGET A RDT&E, DW/04 Advanced		avalanment and I	Ductotumos (AC	(D C-D) R-1 D	NOMENCLATU		se Terminal Def	fondo Cogmont
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V. Management Service	es Cost (\$ in	Thousands)	i	i	FY 2008	1	FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
bubtotal Management Services	51							
Remarks								
Project Total Cost			20,000	0		0		20,000
Remarks			,					,

Missile Defense A	genc	cy (N	1DA)) Exl	hibit	R-4	Sch	edul	e Pro	ofile								Da Fe	te bru	ary	200	8						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D	evelo	opm	ent :	and	Pro	toty	pes	(AC	'D&	P)					LAT llisti			le Do	efen	se T	ern	ninal	l Def	fens	e Se	gmei	nt	
Fiscal Year		20)07			20	008			20	09			20	010			20)11			20)12			20	13	
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Contractual Activities & Events	_				-				-				_				-				-				-			
Fire Unit Fielding #1 and #2 Contract Award																												
Fire Unit #2 Radar Contract Award (long lead items)																												
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Missile Defense Ager	ncy (MDA) Exhi	bit R-4A Schedule I	Detail		Date February 20	08	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Deve			R-1 NO	MENCLATURE 1C Ballistic Mi s	ssile Defense Ter	minal Defense S	egment
chedule 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						

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Justif	ication		Date Februa r	y 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)		NCLATURE Ballistic Mis	ssile Defense	e Terminal D	efense Segm	ent
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

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.

RDT&E Articles for Development Tests: FY08 - Deliver 8 Full-up Interceptors; 3 TFCC TSGs, 2 Launchers.

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

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 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 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.

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.

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				
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 capabilitie 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 ٠
- 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.

			Date			
Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification		February 2008	February 2008			
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes (A	ACD&P)	0603881C Ballistic Missile Defense Terminal Defense Segment				
FY09 Planned Program:						
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			nd test efforts to include cl	assified and unclassified		
networks, software licenses, sustainment and information assurance	ce certifica	tion.				
Laterated Levistics Connect (ILC)	FY	2007	FY 2008 37,824	FY 2009		
Integrated Logistics Support (ILS) RDT&E Articles (Quantity)		0	0	30,437		
Provides each THAAD component with all aspects of logistics support		Ű	Ů			
 FY08 Planned Program: Continue to support flight testing at Pacific Missile Range Facility Support Government Block Qualification Test (BQT) 	y (PMRF)					
 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 Sup	oport Syste	m (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/FF	HC) design	and testing				

UIICLASS.			
Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Jus	tification	Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATUR	_E Aissile Defense Terminal De	fonce Commont
	0003001C Damstic I	instite Defense Ter initial De	erense Segment
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 Ta	ctical Operations Static	on, the Launch Control Stat	tion, and the Station
Support Group. These three components together are called the Tactical Static	1 . /		1
planning, control, coordination, execution, and communications necessary to f			0
is interoperable with external air and interceptor defense and intelligence syste	ems and agencies integr	ated into the Ballistic Miss	ile Defense System
(BMDS).			
FY08 Planned Program:			
RDT&E Articles: Deliver 3 TFCC TSGs			
Continue System Integration Laboratory (SIL) Hardware-in-the Loop (HW)	/IL) integration activition	es of hardware and softwar	e in preparation for
flight testing			

• Complete rehosting of Software Build 5 on upgraded processors to address obsolescence

	1 0 / 0	Date
Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justif APPROPRIATION/BUDGET ACTIVITY	ication R-1 NOMENCLATURE	February 2008
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)		le Defense Terminal Defense Segment
 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 demonstricts Conduct Army Service Level Certification Testing Conduct Intra Army Interoperability Certification Testing Support planning for the Juniper Cobra 09 Exercise (JC-09) FY09 Planned Program: Continue SIL HWIL integration activities of hardware and software in preparation Support flight testing at PMRF Support Development Verification Testing and Operational Testing Maintain Formal Release of Software Build 5 Continue Government BQT Continue participating in wargames, exercises and interoperability demonstriction testing Continue to support planning and execution of JC-09 	rations	

Missile Defense Agency (MDA) Evhibit B-2A DDT&F Dr	raject Justi	ication	Date February 2008					
Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification February 2008 APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE								
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Sector 2010 (ACD&P)								
	,			0				
	F	¥ 2007	FY 2008	FY 2009				
Interceptor		0	86,363	131,141				
RDT&E Articles (Quantity)		0	8	0				
The THAAD Interceptor is a certified round that is propelled by a sing Attitude Control System (DACS) and an infrared seeker used to destro				ossesses a Divert and				
FY08 Planned Program:								
RDT&E Articles: Deliver 8 Full-Up Interceptors								
Complete fabrication, assembly, and test of hardware								
• Complete fabrication, assembly, and testing of hardware in prepar	ation for i	nterceptor Governn	nent Block Qualification Tes	t (BQT)				
Initiate interceptor Government BQT								
Complete obsolescence upgrade for interceptor hardware								
• Continue System Integration Laboratory (SIL) Hardware-in-the-Le flight test and Government BQT	oop (HWI	L) integration activ	ities of hardware and softwa	re in preparation for				
Maintain Formal Release of interceptor software								
• Support flight testing at Pacific Missile Range Facility (PMRF)								
• Support Insensitive Munitions/Final Hazard Classification (IM/FH	HC)design	and testing						
FY09 Planned Program:								
• Support flight testing at PMRF								
Continue to maintain Formal Release of interceptor software								
Continue SIL HWIL integration activities of hardware and software	re in prepa	aration for flight tes	ting					
Complete interceptor Government BQT								
• Continue to support IM/FHC design and testing								

Missile Defense Agency (MDA) Exhibit R-2A RDT&E I APPROPRIATION/BUDGET ACTIVITY	Project Justif	ication R-1 NOMENCLA	Date February 2008	
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603881C Balli	stic Missile Defense Terminal I	Defense Segment
	FY	7 2007	FY 2008	FY 2009
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar RDT&E Articles (Quantity)		0	142,235	155,62
The AN/TPY-2 Radar is a solid state, phased array radar capable of		0	0	
 antenna equipment unit, electronics equipment unit, cooling equipment Beginning in FY09, the cost associated with the AN/TPY-2 Radars in FY08 Planned Program: Integrate Formal Release of Software Build 4.2 in the System In Deliver first PPU for Government Block Qualification Test (BQ') Initiate Government BQT Support flight testing Continue to maintain Formal Release of Software Build 4.2 FY09 Planned Program: Continue Government BQT Continue Government BQT Continue to support flight testing 	is represente tegration La T)	ed under the Sens		4C.

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Miggila Defense Agener (MDA) Erhihit D 24 DDT&F	Ducient Instifie	ation	Date February 2008				
Missile Defense Agency (MDA) Exhibit R-2A RDT&E APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLA					
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603881C Ballistic Missile Defense Terminal Defense							
	FY 2		FY 2008	FY 2009			
Launcher RDT&E Articles (Quantity)		0	4,385	7,8			
The THAAD Launcher consists of a U.S. Army M1120 Heavy Expa	1 1 1 1 1 1 1 1	~	2	· · · 1 · · · · ·			
 FY08 Planned Program: RDT&E Articles: Deliver 2 Launcher Support flight testing at Pacific Missile Range Facility (PMRF) Continue System Integration Laboratory (SIL) Hardware-in-the 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 Initiate planning for the Juniper Cobra 09 Exercise (JC-09) FY09 Planned Program: Continue SIL HWIL integration activities of hardware and softw Support flight testing at PMRF Continue Government BQT Support planning and execution of JC-09 	e SIL for fligh	t test		are in preparation for			

Missile Defense Agency (MDA) Exhibit R-2A RDT	&E Project Justif		February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototy	pes (ACD&P)	R-1 NOMENCLATU 0603881C Ballistic	RE Missile Defense Terminal D	efense Segment
	F	Y 2007	FY 2008	FY 2009
System Test		0	231,079	217,4
RDT&E Articles (Quantity) The THAAD System Tests are responsible for developing and ex		0	0	
 FY08 Planned Program: Continue test planning and range operations for flight testing Continue to conduct flight testing at Pacific Missile Range Fa Continue support of Target Launch Platform in support of fli Participate in Targets planning and Target requirements for f Conduct Government Block Qualification Test (BQT) Continue LFT&E Program and Light Gas Gun tests Continue assembly, integration and launch of Targets in supp Initiate detailed operational test planning for Force Developm Exercise (JC-09)) Implement Insensitive Munitions/Final Hazard Classification 	acility (PMRF) ght testing light test progra port of flight tes nent Experimen	ting tt (FDE) and Limited	d User Test (LUT) (includes	s Juniper Cobra 09
 FY09 Planned Program: 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 f Continue LFT&E program and conduct Light Gas Gun test 		ım		

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Pi	raiect Instif	ication	Date February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (A	ATURE stic Missile Defense Termin	al Defense Segment		
 Conduct FDE and begin conducting LUT (includes JC-09) Continue assembly, integration and launch of Targets in support o Continue IM/FHC design and testing 	of flight tes	ting		
	FY	7 2007	FY 2008	FY 2009
Weapon Sys Engr & Integ Team		0	56,863	56,838
RDT&E Articles (Quantity)		0	0	0
 FY 08 Planned Program: Support flight testing at Pacific Missile Range Facility (PMRF) Continue supporting pre-flight testing in the Software Integration Continue System Analysis in support of flight tests Complete validation of the end-to-end digital simulation using flig Initiate Element Verification analysis Continue planning the integration and implementation of THAAD Continue participating in wargames, exercises and interoperability Support planning for the Juniper Cobra 09 Exercise (JC-09) 	ght test dat and its co	a omponents in the		lity
 Support planning for the sumper Coola of Exercise (see of) Support Insensitive Munitions/Final Hazard Classification (IM/FF FY 09 Planned Program: Support flight testing at PMRF Continue supporting pre-flight testing in the SIL HWIL facility Complete System Analysis in support of flight testing 	HC) design	and testing		
Project: BX07 Terminal High Altitude Area Defense (THAAD) Block 2.0			1	MDA Exhibit R-2A (PE 0603881C)

Missila Dafansa Aganay (MDA) Erhihit D 24 DDT & E Draigat	Instification	Date February 2008	
Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCI		
RDT&E , DW/04 Advanced Component Development and Prototypes (ACD&		llistic Missile Defense Termin	al Defense Segment
• Complete validation of the end-to-end digital simulation using flight test			8
 Complete Valuation of the end to end digital simulation using flight test Complete Element Verification analysis 	, aata		
 Complete Integration and implementation of THAAD and its component 	nts in the BMDS Te	st Bed	
 Continued participating in wargames, exercises and interoperability der 			
 Continue to support planning and execution of JC-09 			
 Continue to support IM/FHC design and testing 			
Continue to support init i i cosign 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
Fire Units #1 and #2 will include a basic load of 48 Interceptors, 5 Launche Surveillance - Model 2 (AN/TPY-2) Radars (provided by Sensors Director)			*
Groups (TSGs) (2 provided by development contract), the required Peculia			
(provided to development contract). The Fire Units will be fielded in FY09			
U.S. Army.	,		
FY08 Planned Program:			
• Initiate and continue the fabrication and assembly of Interceptor compo			
• Initiate the fabrication and assembly of Launcher and TFCC TSG comp	oonents		
• Initiate the fabrication and assembly of Missile Round Trainers			
• Continue the procurement of Government Furnished Equipment (GFE)		t	
• Initiate the procurement of Interim Common Support Equipment (ICSE			
Complete the procurement of Initial Spares			
• Initiate preparation for Ground Test Element Integration and Checkout			
• Convert System Integration Laboratory (SIL) to Fire Unit configuration			
• Complete redesign of assemblies with obsolescence or pure tin hardwar	e		
 Initiate requalification testing of redesign hardware Initiate the sufficiency of 1 here the constraint of a sufficiency of the sufficiency			
• Initiate the refurbishment of 1 launcher (provided under development c	ontract)		
• Receive 2 TFCC TSGs (provided under development contract)			
Project: BX07 Terminal High Altitude Area Defense (THAAD) Block 2.0		٦	MDA Exhibit R-2A (PE 0603881C)
roject. DA07 reminiar nigii Alutude Alea Delelise (TRAAD) Diock 2.0		N	MDA EXHIBIT K-2A (FE 0005881C)

Missile Defense Agency (MDA) I	Exhibit R-2A R	XDT&E Projec	t Justification		Date Febr	ruary 2008		
APPROPRIATION/BUDGET ACTIVITY	R-1 M	NOMENCLATI	JRE					
RDT&E, DW/04 Advanced Component Developm	&P) 0603	0603881C Ballistic Missile Defense Terminal Defense Segment						
• Initiate the buy of a basic load of 24 intercept	otors, 2 TFCC	C TSGs, 2 lau	inchers					
 FY09 Planned Program: RDT&E Articles for Fire Units: Deliver 2 Interce Complete the final assembly of Launchers at Complete the final assembly of Interceptors Complete the fabrication and assembly of co Continue the fabrication and assembly of Mi Continue the procurement, fabrication and a Continue the procurement of Common Supp Initiate the fabrication and assembly of Batter Initiate the fabrication and assembly of Inter Continue the procurement of Common Supp Initiate the fabrication and assembly of Inter Continue the procurement of Common Supp Initiate the fabrication and assembly of Inter Initiate the fabrication and assembly of Inter Initiate SIL Testing Begin Limited User Testing (LUT) Conduct Ground Test Element Integration at 	nd TFCC TS for developm omponent har tial spares issile Round ssembly of G ort Equipment ery Support E im Contractor hardware	Gs nent test dware Trainers FE nt (CSE) Equipment(B) or Support Sy	SE)		CC TSGs an	d 5 Launcher	rs for Fire Un	iits
	EX 2007	EV 2000	EX 2000	EV 2010	EX 0011	EV 2012	EV 2012	Total
PE 0207998C BRAC	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost
	0	103,219	159,938	61,931	8,724	0	0	333,812
PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense	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

Missile Defense Agency (MDA)	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) RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)												
<u>·</u>								Total				
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost				
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,26	62 482,947	605,219	561,947	571,498	3,493,696				
PE 0603891C Special Programs - MDA	347,377	196,892	288,31	5 304,234	538,050	818,136	786,349	3,279,353				
PE 0603892C Ballistic Missile Defense Aegis	1,125,426	1,126,337	1,157,78	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	242,44	1 266,509	560,130	735,727	938,191	3,285,928				
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,45	488,294	649,632	708,582	879,385	3,443,906				
PE 0603895C BMD System Space Program	0	16,552	29,77	41,638	56,199	133,915	157,548	435,623				
PE 0603896C BMD C2BMC	249,179	447,616	289,27	287,194	270,762	256,767	259,159	2,059,954				
PE 0603897C BMD Hercules	46,268	52,462	55,95	5 55,289	56,400	51,902	52,784	371,060				
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,98	32 73,997	77,205	80,168	81,948	482,527				
PE 0603904C Missile Defense Integration & Operations												
Center	104,389	78,557	96,40	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	2,97	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	19,73	5,040	5,284	5,370	5,456	62,430				
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,45	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.

							Date	••••						
		y (MDA) Exhibit R-3	RDT&E Projec	t Cost An			Februa	ry 2008						
APPROPRIATION/BUDGET AC						OMENCLATUR		т : ID						
RDT&E, DW/04 Advanced O	-	-	rototypes (AC	D&P)	06038	881C Ballistic	Vlissile Defens	e Terminal De	fense Segment					
I. Product Development Cost (\$ in Thousands)														
Cost Catagorian	Contract Method	Performing Activity & Location	Total PYs Cost	FY 2008				PYs FY 2008		FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg	Total Cost	
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost	-				
Program Management										_				
Prime Contract	SS/CPIF	LMSSC/ Sunnyvale, CA & Huntsville, AL	0	1	1,784	1/2Q	16,673	1/2Q	28,457	_				
Integrated Logistics Support (ILS)										_				
Prime Contract	SS/CPIF	LMSSC/ Huntsville, AL	0	29	9,311	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	2:	3,661	1/2Q	13,854	1/2Q	37.515					
Interceptor	55/011	1101103 (1110 , 1 112	<u> </u>		,		10,001		01,010	-				
Prime Contract Army Navy/Transportable	SS/CPIF	LMSSC/ CA, TX, AL, MA, NH, IL, FL & MD	0	7:	5,950	1/2Q	107,830	1/2Q	183,780	-				
Radar Surveillance - Model 2 (AN/TPY-2) Radar														
Prime Contract	SS/CPIF	Raytheon// Bedford, MA	0	13	6,850	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	55/0111	1	0		5,504	1/2Q	0,239	1/2Q	7,745	-				
System 10st										<u> </u>				

Missile I	Defense Agency	y (MDA) Exhibit R-3	3 RDT&E Proje	ect Cost Ana	alysis		Date Febr	uary 2008		
APPROPRIATION/BUDGET A						NOMENCLATU				
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603881C Ballistic Missile Defense Terminal Defense Segme										
			, I	1		FY 2008		FY 2009	1	
	Contract	Performing	Total	1		Award/		Award/	1	
	Method	Activity &	PYs	FY 2008	8	Oblg	FY 2009	Oblg	Total	
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost	
	1	LMSSC/	,	[· ·	1	
Prime Contract	SS/CPIF	Sunnyvale, CA; Huntsville, AL; NM & HI	0	96	5,774	1/2Q	90,205	5 1/2Q	186,979	
Weapon Sys Engr & Integ Team		1 1	,	1				· - · · · · · · · · · · · · · · · · ·	[]	
· · -	+	LMSSC/	, +	[-	t		++		
		Sunnyvale, CA &	ı	1					1	
Prime Contract	SS/CPIF	Huntsville, AL	0	29	9,259	1/2Q	26,835	5 1/2Q	56,094	
Fire Units #1 and #2	1	1 1	,	1				+ +	i	
	+	LMSSC/	, +	[-	t		++		
Prime Contract	SS/CPIF	Sunnyvale, CA & Huntsville, AL; NM & HI	0	193	3,820	1/2Q	193,594	4 1/2Q	387,414	
	1	Raytheon/	,	[-		1	[]	
		Wolburn, MA;	ı	1					1	
Prime Contract	SS/CPIF	Huntsville, AL	0	56	5,000	1/2Q	(0 N/A	56,000	
			0	1	0	N/A	1	0 N/A	1	
Subtotal Product Development	1	1	0	656	5,913		615,523	3	1272436	

Remarks

Missila D	ofonco A gono	y (MDA) Exhibit R-3	DDT & E Droig	t Cost Ar	alvaia		Date Februa	ry 2008	
APPROPRIATION/BUDGET A RDT&E, DW/04 Advanced	CTIVITY				R-1 N	OMENCLATUR	RE	e Terminal De	fense Segment
II. Support Costs Cost (§ in Thousa	nds)							
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 200 Cost		FY 2008 Award/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Program Management	cc rype		0000	0000		Dut	0000	Duit	
SETA	С	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
SEIA	C	MDA/	0		3,200	1/2Q	4,005	1/2Q	7,211
MDA Support	С	Arlington, VA	0		122	1/2Q	1,998	1/2Q	2,120
			0		0	N/A	0	N/A	
Integrated Logistics Support (ILS)									
SETA	С	Multiple to include Dynetics, TSA & BAE/ Huntsville, AL & Rockville, MD	0		2,568	1/2Q	4,229	1/2Q	6,797
		Multiple to include IMMC & USAADASCH/ Huntsville, AL &		`	_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,>		
OGA	MIPR	Ft. Bliss	0		3,794	1/2Q	2,178	1/2Q	5,972
MDA Program Support	С	MDA/ Arlington, VA	0		304	N/A	2,572	1/2Q	2,876
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/ Ft Monmouth, NJ, Warren, MI, &							
GFE	MIPR	Huntsville, AL	0		1,847	1/2Q	0	N/A	1,847

Project: BX07 Terminal High Altitude Area Defense (THAAD) Block 2.0

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Missile De APPROPRIATION/BUDGET AC		y (MDA) Exhibit R-3	BDT&E Projec			NOMENCLATUR		nry 2008	
RDT&E, DW/04 Advanced C		Development and J	Prototypes (AC					e Terminal Defe	ense Segment
						FY 2008		FY 2009	
I	Contract	Performing	Total	I		Award/		Award/	
	Method	Activity &	PYs	FY 2008	;	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost
THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSGs)									
		Multiple to include Dynetics, DCD, & Davidson Tech/ Silver Spring, MD							
SETA	С	& Huntsville, AL	0	I	303	1/2Q	601	1/2Q	904
		Multiple to include NRDEC, RDEC & SMDC/							
OGA	MIPR	Natick MA & Huntsville, AL	0	l	584	1/2Q	393	1/2Q	977
	<u> </u>	MDA/	,	l				<u> </u>	
MDA Program Support	С	Arlington, VA	0	1	246	N/A	1,661	1/4Q	1,907
			0	 I	0	N/A	0	N/A	
Interceptor		1	1	i					
		Multiple to include BAE, TSI & L3/							
SETA	С	Huntsville, AL & Salt Lake City, UT	0	5,	,147	1/2Q	7,097	1/2Q	12,244
		Multiple to include RDEC & SMDC/							
OGA	MIPR	Huntsville, AL	0	4,	,478	1/2Q	3,289	1/2Q	7,767
1		MDA/		 					
MDA Program Support	С	Arlington, VA	0	, 	788	1/2Q	12,925	1/2Q	13,713
Army Navy/Transportable Radar Surveillance - Model 2 (AN/TPY-2) Radar									

APPROPRIATION/BUDGET RDT&E, DW/04 Advance		Development and P	rototypes (AC		NOMENCLATUR 3881C Ballistic I		e Terminal Defe	nse Segment
	<u> </u>		<u>, , , , , , , , , , , , , , , , , , , </u>		FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
		Multiple to include Dynetics & GA Tech/ Huntsville, AL and						
SETA	С	GA	0	2,367	1/2Q	0	N/A	2,367
		Multiple to include CECOM, RDEC & SMDC/						
		Ft Monmouth NJ						
OGA	MIPR	and Huntsville, AL	0	1,598	1/2Q	0	N/A	1,598
MDA Program Support	С	MDA/	0	1,420	1/2Q	16,789	N/A	18,209
	C	Arlington, VA	0	1,420	1/2Q	10,789	IN/A	18,209
Launcher		Teledyne						
		Solutions/						
SETA	С	Huntsville, AL	0	748	1/2Q	700	1/2Q	1,448
		RDEC & SMDC/						,
OGA	MIPR	Huntsville, AL	0	97	1/2Q	182	1/2Q	279
		MDA/						
MDA Program Support	С	Arlington, VA	0	36	1/2Q	748	1/2Q	784
			0	0	N/A	0	N/A	
System Test								
		Multiple to include Dynetics, L3 & TSI/						
SETA	С	Huntsville, AL	0	13,065	1/2Q	16,523	1/2Q	29,588

APPROPRIATION/BUDGET A RDT&E, DW/04 Advanced		Development and I	Prototypes (AC		NOMENCLATU		e Terminal Defe	ense Segment
	Contract Method	Performing Activity &	Total PYs	FY 2008	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total
Cost Categories:	& Type	Location Multiple to include WSMR, PMRF,	Cost	Cost	Date	Cost	Date	Cost
		ATEC, RDEC & SMDC/						
OGA	MIPR	NM, HI, VA, & Huntsville, AL	0	64,074	1/2Q	55,848	1/2Q	119,922
MDA Program Support	С	MDA/ Arlington, VA	0	14,149	1/2Q	10,812	1/2Q	24,961
Weapon Sys Engr & Integ Team								
		Multiple to include Dynetics, TSA and L3/						
SETA	С	Huntsville, AL & Salt Lake City, UT	0	12,582	1/2Q	13,763	1/2Q	26,345
		Multiple to include RDEC & SMDC/						
OGA	MIPR	Huntsville, AL	0	14,718	1/2Q	13,023	1/2Q	27,741
MDA Program Support	С	MDA/ Arlington, VA	0	304	1/2Q	3,217	1/2Q	3,521
Fire Units #1 and #2								
		Multiple to include CECOM, TACOM, GSA, RDEC & SMDC/						
	MIPR	Ft Monmouth, NJ, Warren, MI, & Huntsville, AL	0	11,630	1/2Q	0	N/A	11,630

Missile	Defense Agenc	y (MDA) Exhibit R-3	RDT&E Project	t Cost Analysis		Date Februar	rv 2008	
APPROPRIATION/BUDGET		y (indir) Exhibit R 5	Ind Full Froject		IOMENCLATUR			
RDT&E, DW/04 Advance	l Component	Development and P	rototypes (ACI	D&P) 0603	881C Ballistic	Missile Defense	e Terminal Defe	ense 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
III. Test and Evaluation	Cost (\$ in	Thousands)			FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	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	1	<u> </u>	I			I		
IV. Management Service	es Cost (\$ in	n Thousands)						
	Contract	Performing	Total		FY 2008 Award/		FY 2009 Award/	Total
Cost Catagorias:	Method	Activity &	PYs Cost	FY 2008	Oblg Data	FY 2009	Oblg Date	
Cost Categories:		Activity & Location	PYs Cost	FY 2008 Cost	Oblg Date	FY 2009 Cost	Oblg Date	Cost
_	Method	Location			Ũ		e	
Program Management	Method	Location THAAD/	Cost		Date		Date	Cost
Program Management Internal Operating Budget	Method & Type	Location		Cost 2,111	Ũ	Cost	e	Cost 3,449
Cost Categories: Program Management Internal Operating Budget Subtotal Management Services Remarks	Method & Type	Location THAAD/	Cost 0	Cost	Date	Cost	Date	Cost

Missile Defense A	geno	y (M	IDA)) Exl	hibit	R-4	Sch	edul	e Pro	ofile								Da Fe		ary	200	8						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Do	evelo	opm	ent :	and	Pro	toty	pes	(AC	D&	P)			OME 81C					le Do	efen	se T	ern	ninal	l Def	fens	e Seş	gme	nt	
Fiscal Year		20	007			20	08			20	09			20	10			20)11			20)12			20	13	
	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						Δ-																						
Conduct FTT-10								_																				
Conduct FTT-11										⊿																		
Conduct FTT-12												₫																
Conduct FTT-13														▲	\mathbf{P}													
Conduct FTT-14															Υ	$\mathbf{\nabla}$												
Block 2.0																												
AN/TPY-2 Radar B4.2 S/W Formal Rel Integ at SIL																												
AN/TPY-2 Radar #2 E3 Testing Complete					Δ																							
Launcher Build 4 S/W Formal Release Integ at SIL					∠																							
Insensitive Munitions/Hazards Testing					Δ-																							
Fire Control and Comm B5 S/W Formal Rel at SIL						Δ																						
			Mile Elerr Syst	stone nent T	e Deci est (d evel T	nt (co ision i comp fest (c /ity	com ete)	olete)			eger		7	M iles Elem	stone ent T em Le	Deci est (p evel T	ision blann est (p	anned (planr ed) planne	ied)									
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APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	evelo	opm	ent a	and	Pro	toty	pes (AC	D &	P)						URE ic M		e De	efen	se T	erm	inal	Def	fens	e Se	gme	nt	
Fiscal Year		20	007			20	08			20	09			20	010			20	11			20	12			20	013	
	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						Δ																						
AN/TPY-2 Radar #2 Avail for Block Qual Test							Δ																					
Fire Control & Comm B5 S/W Formal Rel of Link 16C							Δ																					
Deliver Prime Power Unit (PPU) #1								Δ																				
FTT-12 Interceptor (1 of 2) Delivered								Δ																				
FTT-11 Interceptor Delivered								Δ																				
FTT-10 Interceptors (2) Delivered								Δ																				
AN/TPY-2 Radar B4.2 Formal Update Rel								∆ -																				
FTT-12 Interceptor (2 of 2) Delivered									Δ																			
AN/TPY-2 Radar Prime Power Unit #2 Delivered									Δ																			
Fire Unit #1 Element Integ & Checkout Complete										Δ																		
Element Logistics Demonstrations																												
FTT-13 Interceptor Delivered											Δ																	
										Le	eger																	
					it Ever e Deci							<u>ک</u>	7					anned) (plann										
					Test (c							<	>			est (p												
					evel T e Activ		omple	ete)								evel T Activit		lanne	d)									

APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component	t Develo	opm	ent a	and	Pro	toty	pes	(AC	D&	P)			DME 81C					e De	efen	se T	erm	inal	Def	fens	e Se	gme	nt	
Fiscal Year		20	07			20	08			20	09			20	10			20)11			20	12			20)13	
	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											Δ																	
Element Weapon System Verification											Δ																	
Fire Unit #2 Element Integ & Checkout Complete												Δ																
Deliveries																								I		I		
Fire Unit #1										Δ_																		
8th Fire Unit Interceptor Delivered														Δ														
Fire Unit #2															Δ-													Γ
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						est (c	ompl	ete)				_ \	7 [lanne	ed)									
	Δ_		Com	plete	Activ	vity						Δ		Plan	ned A	ctivit	у											

Missile Defense Age	ncy (MDA) Exhi	bit R-4A Schedul	e Detail		Date February 20	08	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Dev			R-1 NO	MENCLATURE 1C Ballistic Mis	sile Defense Ter		egment
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				

Missile Defense Ag	gency (MDA) Exhi	bit R-4A Schedul	e Detail			Date February 20	08	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velopment and I	Prototypes (ACI			NCLATURE Ballistic Mis	sile Defense Ter	minal Defense S	egment
Schedule Profile	FY 2007	FY 2008	FY 200	9	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	2	1Q-4Q			
8th Fire Unit Interceptor Delivered					2Q			
Fire Unit #2					3Q-4Q	1Q-2Q		

				Date			
Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Justif	ication		Februar	y 2008		
APPROPRIATION/BUDGET ACTIVITY		R-1 NOME	NCLATURE				
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603881C	Ballistic Mis	sile Defense	Terminal D	efense Segm	ent
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.

Missila Defense A series (MDA)	E		4 T		Date Fab	ruary 2008		
Missile Defense Agency (MDA) APPROPRIATION/BUDGET ACTIVITY	EXHIDIL K-2A K	DI &E Projec		NOMENCLA		ruary 2000		
RDT&E, DW/04 Advanced Component Develop	ment and Prot	otypes (ACD			tic Missile Def	ense Termin	al Defense Sec	rment
B. Accomplishments/Planned Program		iotypes (iieb	aI) 000	coore build		ense rerning	ai Derense seg	
b. Accomplishments/Flanneu Program			FY 2007		FY 200	18	FY	2009
FIRE UNIT #3 and #4			112007	0	11200	0	11.	0
RDT&E Articles (Quantity)				0		0		0
Fire Unit #3 and #4 will include a basic load of	18 Intercento	rs 6 Launch	ere 2 Army	Navy/Trans	nortable Rade	Ť	re - Model 2s	
2) Radar (provided by Sensors Directorate), 4 T Peculiar and Common Support Equipment. The to the U.S. Army.Award of the Fire Unit #3 and #4 contract has b	Fire Units w	ill be fielded	in FY13 an	d FY14 and,	following op	1 \	, ,	1
C. Other Program Funding Summary	EX 2007	EV 2000	EX 2000	EX 2010	EV 2011	EV 2012	EX 2012	Total
PE 0207998C BRAC	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011 8,724	FY 2012	FY 2013	Cost 333,812
PE 0603175C Ballistic Missile Defense Technology	183,849	103,219 108,423	159,938 118,718	61,931 115,234		127,012	130,358	903,746
PE 0603882C Ballistic Missile Defense Midcourse Defense	185,849	108,425	118,/18	115,254	120,132	127,012	150,558	905,740
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

Project: EX07 Terminal High Altitude Area Defense (THAAD) Block 5.0

Line Item 72 -

60 of 116 UNCLASSIFIED MDA Exhibit R-2A (PE 0603881C)

Missile Defense Agency (MDA)	Exhibit R-2A I										
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Develop		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment									
									Total		
	FY 2007	FY 2008	FY 2009	9	FY 2010	FY 2011	FY 2012	FY 2013	Cost		
PE 0603904C Missile Defense Integration & Operations											
Center	104,389	78,557	96,4	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	2,9	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	19,7	734	5,040	5,284	5,370	5,456	62,430		
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,4	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.

		y (MDA) Exhibit R-3	KD I GE I I UJEC		NOMENCLATU	Februar	1 J 2000	
APPROPRIATION/BUDGET : RDT&E, DW/04 Advanced		Development and P	rototypes (AC				e Terminal Defe	unse Segment
,		*	Tototypes (AC)		boole Damstie	WIISSINE DETENS		inse beginent
I. Product Development	<u>Cost (\$ in)</u>	Thousands)	t		FY 2008	t	EX 2000	
	Contract	Performing	Total		FY 2008 Award/		FY 2009 Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
FIRE UNIT #3 and #4	a Type	Location	Cost	Cost	Date	COSt	Date	Cost
SIRE UNIT #5 and #4		LMSSC/						
		CA, AL, AR, TX,						
		AL, NH, IL, FL,						
Prime Contract	SS/FPI	MD	0	0	N/A	0	N/A	
Subtotal Product Development			0	0		0		0
Remarks		ı			L I.		I	
	Method	Performing Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
					ũ		e e	
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
uptotal Summant Casta								
Subtotal Support Costs							I	
Remarks	 Cost (\$ in '	Thousands)			LL	I		
	Cost (\$ in '	Thousands)			FY 2008		FY 2009	
Remarks	Cost (\$ in ^r Contract	Thousands) Performing	Total		FY 2008 Award/		FY 2009 Award/	
Remarks			Total PYs	FY 2008		FY 2009		Total
Remarks III. Test and Evaluation Cost Categories:	Contract	Performing		FY 2008 Cost	Award/	FY 2009 Cost	Award/	Total Cost
Remarks	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	

APPROPRIATION/BUDGET RDT&E, DW/04 Advance		evelopment and I	Prototypes (A	CD&P) 060	NOMENCLATU 3881C Ballistic		se Terminal Def	fense Segment
IV. Management Servio	-	<u> </u>						8
	Contract Method	Performing Activity &	Total PYs	FY 2008	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Management Services								
Remarks								
Project Total Cost			0	0		0		0
Remarks								
Kemarks								
Kemarks								
Kemarks								
Kemarks								

Missile Defense A	genc	:y (N	IDA)) Exl	hibit	R-4	Sch	edu	le Pr	ofile	1							Dat Fe		ary	2008	8						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D	evelo	opm	ent a	and	Pro	toty	pes	(AC	D&	P)					LAT llisti			e De	efen	se T	erm	ninal	l Def	fens	e Se	gme	nt	
Fiscal Year		20	07			20)08	<u> </u>		20)09			20	010			20)11			20	012			20	13	
	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													Δ															
Block 5.0 Development Contract Award																	Δ											
Deliveries																												
Fire Unit #3																								Δ-				
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Project: EX07 Terminal High Altitude Area Defense (7	ГНАА	AD) B	Block	5.0																		Ν	MDA	Exhi	bit R-	-4 (PF	E 060	3881C)

						Date		
	Agency (MDA) Exhi	bit R-4A Schedule				February 20	08	
APPROPRIATION/BUDGET ACTIVITY					IENCLATURE			
RDT&E, DW/04 Advanced Component D	_		$\mathbf{\hat{x}}\mathbf{P}$ 0	603881		sile Defense Ter		_
Schedule Profile	FY 2007	FY 2008	FY 20	09	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

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	ication		Date Februar	y 2008				
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes		NCLATURE Ballistic Mi	ssile Defense	e Terminal D	efense Segm	ent		
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 0						
Note: The content in $FY08-13$ Project XX07 is a combination of the	efforts prev	iously renor	ted in the F	ield Support	t and Contro	ct Logistics	Support	

Note: The content in FY08-13 Project XX07 is a combination of the efforts previously reported in the Field Support and Contract Logistics Supp (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

Project: XX07 Terminal High Altitude Area Defense (THAAD) Sustainment

66 of 116 UNCLASSIFIED MDA Exhibit R-2A (PE 0603881C)

Missile Defense Agency (MDA)	Exhibit R-2A F	RDT&E Projec	t Justificatio	1	Date Feb	ruary 2008		
APPROPRIATION/BUDGET ACTIVITY			R-1	NOMENCLAT	URE	ů.		
RDT&E, DW/04 Advanced Component Develop	ment and Prot	totypes (ACD	&P) 060	3881C Ballisti	c Missile Def	ense Termina	l Defense Seg	ment
FY09 Planned Program:								
• Continue to provide THAAD Field Support	/CLS support	to the Fire U	Jnits					
• Continue to conduct training, update trainin	g material, an	d develop ar	nd maintain	training devic	es			
• Continue to provide IETMs and technical da	ata updates	1		e				
• Continue to provide interim AIS System for	1	and Supply	Chain Man	agement				
 Continue to perform Logistics and RAM Ar 		and Suppry		agement				
 Continue to perform Systems Engineering 	larysis							
 Continue to perform Systems Engineering Continue procurement of Replenishment Sp 	arac							
1 1 1	al CS							
Award Field Support/CLS Contract								
C. Other Dragman Frending Summary								
C. Other Program Funding Summary				1				Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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

Project: XX07 Terminal High Altitude Area Defense (THAAD) Sustainment

MDA Exhibit R-2A (PE 0603881C)

Missile Defense Agency (MDA)	Exhibit R-2A H	RDT&E Projec	et Justifica									
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Developm	nent and Pro		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment									
								Total				
	FY 2007	FY 2008	FY 2009)	FY 2010	FY 2011	FY 2012	FY 2013	Cost			
PE 0603904C Missile Defense Integration & Operations												
Center	104,389	78,557	96,4	,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	2,9	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	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	19,7	734	5,040	5,284	5,370	5,456	62,430			
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,4	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.

Missile I	Defense Agency	y (MDA) Exhibit R-3	RDT&E Proje	ct Cost Analysis		Date Februa	ry 2008	
APPROPRIATION/BUDGET A					IOMENCLATUR			
RDT&E, DW/04 Advanced		*	rototypes (AC	(D&P) 06038	881C Ballistic I	Missile Defense	e Terminal Defe	ense Segment
I. Product Development	Cost (\$ in 7	[housands)						
	Contract Method	Performing Activity &	Total PYs	FY 2008	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Field Support and Contract Logistics Support (CLS)								
Prime Contract		LMSSC & Raytheon/ CA, TX, AL, MA,		1 140	2/40	21.272	1/20	
Daima Contro at	SS/Various	NH, IL, FL & MD	0	1,148	3/4Q	21,372	1/2Q	22,520
Subtotal Product Development			0	1,148		21,372		22520
				1,148		21,372		22520
Subtotal Product Development				1,148		21,372		22520
Subtotal Product Development Remarks	\$ in Thousa	nds)	0	1,148	FY 2008	21,372	FY 2009	22520
Subtotal Product Development Remarks	\$ in Thousan Contract	nds) Performing	0 Total		Award/		Award/	
Subtotal Product Development Remarks II. Support Costs Cost (\$ in Thousa Contract Method	nds) Performing Activity &	0 Total PYs	FY 2008	Award/ Oblg	FY 2009	Award/ Oblg	Total
Subtotal Product Development Remarks	\$ in Thousan Contract	nds) Performing	0 Total		Award/		Award/	
Subtotal Product Development Remarks II. Support Costs Cost (Cost Categories: Field Support and Contract	\$ in Thousa Contract Method	nds) Performing Activity &	0 Total PYs	FY 2008	Award/ Oblg	FY 2009	Award/ Oblg	Total
Subtotal Product Development Remarks II. Support Costs Cost () Cost Categories: Field Support and Contract Logistics Support (CLS)	\$ in Thousan Contract Method & Type	nds) Performing Activity & Location Multiple to include CECOM, TACOM, GSA, RDEC &	0 Total PYs Cost	FY 2008 Cost	Award/ Oblg Date	FY 2009 Cost	Award/ Oblg Date	Total Cost
Subtotal Product Development Remarks II. Support Costs Cost () Cost Categories: Field Support and Contract Logistics Support (CLS)	\$ in Thousan Contract Method & Type	nds) Performing Activity & Location Multiple to include CECOM, TACOM, GSA, RDEC &	0 Total PYs Cost 0	FY 2008 Cost 0	Award/ Oblg Date	FY 2009 Cost 424	Award/ Oblg Date	Total Cost
Subtotal Product Development Remarks II. Support Costs Cost () Cost Categories: Field Support and Contract Logistics Support (CLS)	\$ in Thousan Contract Method & Type	nds) Performing Activity & Location Multiple to include CECOM, TACOM, GSA, RDEC &	0 Total PYs Cost 0 0	FY 2008 Cost 0 0	Award/ Oblg Date N/A N/A	FY 2009 Cost 424 0	Award/ Oblg Date	Total Cost

APPROPRIATION/BUDGET					NOMENCLATU			
RDT&E, DW/04 Advance	d Component D	evelopment and I	Prototypes (AC	D&P) 060	3881C Ballistic	Missile Defens	e Terminal Def	fense Segment
III. Test and Evaluation	Cost (\$ in T	housands)						
					FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Test and Evaluation								
Remarks								
IV. Management Servic	es Cost (\$ in	Thousands)						
					FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Management Services								
Remarks								
Project Total Cost		1	0	1,148		21,796		22,944
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Domonka								
Remarks								
Remarks								
Remarks								
Remarks								
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Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile Date APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE													ary	200	8													
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	velo	pme	ent a	and	Pro	toty	pes	(AC	D&	P)								le D	efen	se T	ern	nina	l Dei	fens	e Se	gme	nt	
Fiscal Year		20	07			20	008			20	09			20)10			20)11			20)12			20)13	
	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									Δ																			
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					e Deci Test (d			olete)				$\langle \gamma \rangle$			stone nent T				ned)									
		,	Syste	em Le	evel T	est (c		ete)					7	Syst	em Le	evel T	est (p		ed)									
	▲		Com	plete	Activ	/ity						Δ_		Plan	nned A	ctivit	ty											

Project: XX07 Terminal High Altitude Area Defense (THAAD) Sustainment

Missile Defense Agency (MDA) Exhibit R-4A Schedule Detail						Date February 20	08	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)				R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
chedule Profile	FY 2007	FY 2008	FY 2	009	FY 2010	FY 2011	FY 2012	FY 2013
ontractual Activities & Events								
Field Support and CLS Contract Award			10	2				

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Justif	ïcation		Date Februar	y 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)		NCLATURE Ballistic Mis	sile Defense	e Terminal D	efense Segm	ent
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), Coproduction 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 F	Project Justi		February 2008	
APPROPRIATION/BUDGET ACTIVITY		R-1 NOMENCLAT		
RDT&E, DW/04 Advanced Component Development and Prototypes ((ACD&P)	0603881C Ballist	ic Missile Defense Termina	l Defense Segment
B. Accomplishments/Planned Program				
	F	Y 2007	FY 2008	FY 2009
Arrow System Improvement Program (ASIP)		58,390	0	0
Israeli Arrow Program		2	0	C
The Arrow System Improvement Program (ASIP) is a cooperative ef	fort condu	cted under the ASI	P International Agreement	t between the United
States and the State of Israel. The Arrow System Improvement Progr	am comme	nced on March 13.	2001 and will run throug	h September 2009. ASIP
is a follow-on effort to the Arrow Deployment Program (ADP) to ass			0	1
robust regional Theater Ballistic Missile (TBM) threats.	sure that Th	10 w retains system	encenveness against evo	iving longer range, more
Tobust regional Theater Danistic Missile (TDM) uneats.				
FY07 Accomplishments:				
RDT&E Articles: (Two Missile Total) One Block 3.5 Arrow test mis	ssile for inte	ercept testing and (One Block 4.0 Arrow II tes	st missile for Flyout
testing.				
• Conducted AST - 11 (Block 3.5 intercept of the Black Sparrow T	arget) and	AST -12 (Block 4	0 flyout)	
 Conducted Joint Interoperability Exercise Juniper Cobra with Isra 	-		0 119 0 40)	
1 7 1				
Continued enhancing Arrow interoperability development and va		include engagemei	nt coordination.	
• Initiated verification and validation, Phase III of the ASIP progra	ım.			
	F	Y 2007	FY 2008	FY 2009
Israeli Test Bed (ITB)		3,535	0	0
RDT&E Articles (Quantity)		0	0	0
The Israeli Test Bed (ITB) is a cooperative effort conducted under th	e Theater I	Ballistic Missile De	fense Test Bed Memorane	dum of Agreement
between the U.S. and Israel. The ITB program commenced on 30 Ma				e
simulation facility for the purpose of developing, analyzing, and eval				
algorithms. The principal ITB facility resides at in Holon, Israel. A se	econd IIB	capability is opera	ional at the U.S. Army S.	Space and Missile
Defense Command in Huntsville, Alabama.				
FY07 Accomplishment:				
• Designed, Coded, and Integrated software enhancements in ITB t	for experin	ents conducted in	FY07 and for those planne	ed in FY08
• Designed, Conducted and Provided analysis on ITB experiments	-		I ···	
- Designed, Conducted and Provided analysis on PED experiments				

combined Live exer concepts and impact /Israeli users FY 2008 ed effort by MDA at ational Missile Defe	y 2008 Terminal Defense Segmer rcise, and support revise ts on interoperability FY 200 0 0 0 nd the Israeli Ministry of ense architecture. Progra e system robustness and	ed ¹⁹ ((of Defense am
ATURE istic Missile Defense combined Live exer concepts and impact /Israeli users FY 2008 ed effort by MDA ar ational Missile Defe	Terminal Defense Segmercise, and support revise ts on interoperability FY 200 0 0 nd the Israeli Ministry of ense architecture. Progra	ed ⁹⁹ of Defense am
istic Missile Defense combined Live exer concepts and impact /Israeli users FY 2008 ed effort by MDA ar ational Missile Defe	rcise, and support revise ts on interoperability FY 200 0 0 nd the Israeli Ministry o ense architecture. Progra	ed ⁰⁹ of Defens am
combined Live exer concepts and impact /Israeli users FY 2008 ed effort by MDA at ational Missile Defe	rcise, and support revise ts on interoperability FY 200 0 0 nd the Israeli Ministry o ense architecture. Progra	ed ⁰⁹ of Defens am
concepts and impact /Israeli users FY 2008 ed effort by MDA a ational Missile Defe	ts on interoperability FY 200 0 0 nd the Israeli Ministry of ense architecture. Progra	of Defens
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ational Missile Defe	ense architecture. Progra	am
eir impact on contri	sile defense for the State	missile
1 1 2000		19
	0	
5 0	aeli cooperative progra ograms; security suppo	5 0

February 2008 OMENCLATURE SB1C Ballistic Missile Defense Terminal Defense Segment o-production, and ITB. o-production, and ITB. vities. FY 2008 FY 2009 46,090 0 30 0 Dishing a capability in the United States and the State of Isra the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi ontractor with ~30% work share for producing components of
SBIC Ballistic Missile Defense Terminal Defense Segment o-production, and ITB. vities. FY 2008 FY 2008 FY 2008 FY 2009 46,090 0 bishing a capability in the United States and the State of Isra the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi
o-production, and ITB. vities. <u>FY 2008</u> <u>FY 2009</u> <u>46,090</u> <u>30</u> 0 vities. <u>O</u> <u>46,090</u> <u>0</u> <u>30</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u></u>
vities. FY 2008 FY 2009 46,090 0 30 0 blishing a capability in the United States and the State of Isra the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi
vities. FY 2008 FY 2009 46,090 0 30 0 blishing a capability in the United States and the State of Isra the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi
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30 0 Dishing a capability in the United States and the State of Isra the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi
blishing a capability in the United States and the State of Isra the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi
the Co-production effort are to create the ability to accelerate S. industrial and technology base in defensive ballistic missi
hich with Israeli's share of funding increases Arrow II ties
FY 2008 FY 2009
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tie

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Missile Defense Agency (MDA)	Exhibit R-2A F	RDT&E Projec				ruary 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Developm	mont and Prot	totypes (ACD		NOMENCLAT 3881C Ballisti		onco Tormino	l Defense See	mont
		• •						
Israel has completed its joint 18 month definition								
Weapon System. In May 2006, the Israeli Missi	le Defense O	rganization (IMDO) dow	inselected to	the David's S	ling weapon	System (DS	w5)
proposed by Rafael/Raytheon.								
The EV07 Appropriations Act apositied \$20.4	I for the CDI	MD isint fa	a i bilitar atra	ly Nota with	the complet	ion of the stu	dry Israalial	
The FY07 Appropriations Act, specified \$20.4M the first phase of Full Scale Development for th			•	•	1			0 0
military list of the David's Sling and how it cou								
program. Unlike the historical management of t								
program. While there are currently no U.S. requ		1 .						·
		uns system, i	MDA will e	iisure system	development	t doesn't prec		.S. benefits
for using this system against the asymmetric thr	eat.							
EV07 A accomplishments.								
FY07 Accomplishments:								
• Held System Requirements Review in Febru								
• Conducted propulsion control test with boos	•							
• Make Full Scale Development decision and	begun interna	ational agree	ment negoti	ations				
C. Other Dreaman Freding Summary								
C. Other Program Funding Summary								Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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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Missile Defense Agency (MDA)	Exhibit R-2A F	RDT&E Projec	<u>et Justificati</u>	on	Date Feb	ruary 2008		
APPROPRIATION/BUDGET ACTIVITY				1 NOMENCLAT				
RDT&E, DW/04 Advanced Component Develop	ment and Pro	totypes (ACD	(&P) 06	03881C Ballist	ic Missile Def	ense Termina	al Defense Seg	,ment
					<u> </u>			Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,44	1 266,509	560,130	735,727	938,191	3,285,928
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,45	5 488,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,77	41,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,27	7 287,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,95	5 55,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,98	2 73,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations Center	104,389	78,557	96,40	4 100,437	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	2,97	8 4,964	4,963	8,933	8,933	32,757
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	. <u></u>	0 0	0	0	0	165,243
PE 0605502C Small Business Innovative Research - MDA	142,510	0	. <u></u>	0 0	0	0	0	142,510
PE 0901585C Pentagon Reservation	15,527	6,019	19,73	4 5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,45	3 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.

Missile D	efense Agency	y (MDA) Exhibit R-3	3 RDT&E Project	et Cost Ai	palvsis		Date Februa	nry 2008	
APPROPRIATION/BUDGET AC	CTIVITY		, i i i i i i i i i i i i i i i i i i i		R-1 N	NOMENCLATUR	RE	-	
RDT&E, DW/04 Advanced (-	-	Prototypes (AC)	D&P)	0603	881C Ballistic	Missile Defens	se Terminal Defe	ense Segment
I. Product Development	<u>Cost (\$ in T</u>	housands)	·			F			
	Contract	Performing	Total			FY 2008 Award/		FY 2009 Award/	
	Method	Activity &	PYs	FY 200		Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost
Arrow System Improvement Program (ASIP)									
Arrow System Improvement	1	IAI/	1						
Program (ASIP)	FFP	Israel	379,079		0	4Q	0	4Q	379,079
Israeli Test Bed (ITB)	<u> </u>		<u> </u>						
		Tadiran/							
Israeli Test Bed (ITB)	FFP	Israel	19,740		0	4Q	0	4Q	19,740
Israeli Systems Architecture and Integration (ISA&I)									
Israeli Systems Architecture and		Wales, Ltd/							
Integration (ISA&I)	FFP	Israel	11,689		0	4Q	0	4Q	11,689
Arrow Missile Production Program (AMPP)									
		IAI&Boeing/	1						
Arrow Missile Production	FFP	Israel&AL	273,482		0	4Q	0	4Q	273,482
Short Range Ballistic Missile Defense (SRBMD)									
Short Range Ballistic Missile		IMDO/							
Defense Study	FFP	Israel	30,400		0	N/A	0	N/A	30,400
Subtotal Product Development	1	ļ ļ	714,390		0		0		714390

Remarks

APPROPRIATION/BUDGET		()	3 RDT&E Projec			OMENCLATUR	Februar	J 2 000	
RDT&E, DW/04 Advanced		evelopment and 1	Prototypes (AC					e Terminal Defe	ense Segment
II. Support Costs Cost (-	*		<i>D</i> u I) 0	00000	ore Dumstre			ense beginene
II. Support Costs Cost		ius j			1	FY 2008		FY 2009	
	Contract	Performing	Total			Award/		Award/	
	Method	Activity &	PYs	FY 2008		Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost		Date	Cost	Date	Cost
Program Support									
		Various/							
Program Support	FFP	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 T	bouconde)							
III. Test and Evaluation		nousanus)				FY 2008		FY 2009	
	Contract	Performing	Total			Award/		Award/	
	Method	Activity &	PYs	FY 2008		Oblg	FY 2009	Oblg	Total
		Location	Cost	Cost		Date	Cost	Date	Cost
Cost Categories:	& Type	LOCATION							
	& Type	Location	0000						
Subtotal Test and Evaluation	& Type	Location							
Subtotal Test and Evaluation	& Type	Location							
Subtotal Test and Evaluation	& Type								
Subtotal Test and Evaluation Remarks									
Subtotal Test and Evaluation Remarks						EY 2008		EY 2009	
Subtotal Test and Evaluation Remarks	s Cost (\$ in	Thousands)				FY 2008 Award/		FY 2009 Award/	
Subtotal Test and Evaluation Remarks	s Cost (\$ in Contract	Thousands) Performing	Total	FY 2008		Award/	FY 2009	Award/	Total
Subtotal Test and Evaluation Remarks IV. Management Service	S Cost (\$ in Contract Method	Thousands)		FY 2008 Cost			FY 2009 Cost		Total Cost
Cost Categories: Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services	s Cost (\$ in Contract	Thousands) Performing Activity &	Total PYs			Award/ Oblg		Award/ Oblg	
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services	S Cost (\$ in Contract Method	Thousands) Performing Activity &	Total PYs			Award/ Oblg		Award/ Oblg	
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services	S Cost (\$ in Contract Method	Thousands) Performing Activity &	Total PYs			Award/ Oblg		Award/ Oblg	
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services Remarks	S Cost (\$ in Contract Method	Thousands) Performing Activity &	Total PYs		0	Award/ Oblg		Award/ Oblg	
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories:	S Cost (\$ in Contract Method	Thousands) Performing Activity &	Total PYs Cost		0	Award/ Oblg	Cost	Award/ Oblg	Cost

Missile Defense A	genc	y (N	IDA)) Exl	hibit	: R-4	Sch	edu	le Pr	ofile	•							Da Fe		ary	200	8						
APPROPRIATION/BUDGET ACTIVITY											R				LAT									•	G			J
RDT&E, DW/04 Advanced Component Do	evelo	opm	ent a	and	Pro	toty	pes	(AC	ĴD&	(P)	0	6038	<u>8810</u>	ј ва	IIIISU		lissi	le D	eten	se 1	erm	nina	Dei	ens	e Se	gme	nt	
Fiscal Year		20)07			20	008			20	009			20	010			20)11			20)12			20	13	
	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	-	T		-				T	-	1	T			T			-	-	T		ā	-						
ASIP Flight Tests in Israel																												
Communications	_				_				_				_				_				_				_			
Interoperability Tests																												
Interoperability Field Demonstration																												
Program Milestones																	_											
ITB Experiments (Three each year)	Δ_																											
ASIP Phase II	▲																											
ASIP Phase III		Δ_																										
ASIP Follow-On Feasibility Study		ᇫ																										
Production Milestones	_								_				_				_								_			
Arrow Co-Production	Δ-																											
Development Milestones	-	-			-	-	-	-	-		-	-	-	-			-		-		-	-						
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Missile Defense A	genc	y (M	DA)	Ex	hibit	R-4	Sch	edul	e Pr	ofile	!							Da Fe		ary	2008	8						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component D	evelo	opme	ent a	and	Pro	toty	pes	(AC	D&	P)					LAT llist i			le D	efen	se T	'erm	ina	l Def	fens	e Se	gme	nt	
Fiscal Year		200	07			20	08			20)09			20)10			20)11			20	012			20)13	
	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	1					•		1		1	-	1		1	1	-			1	1		1				I	•	
Short Range Ballistic Missile Defense	Δ_																											
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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	Missile Defe	nse Agency (MDA) Exhi	ibit R-4A Schedule	e Detail			Date February 20	08	
Integrated Flight TestImage: state of the sta	APPROPRIATION/BUDGET ACTIVITY			R					egment
ASIP Flight Tests in Israel2Q1QIQImage: constraint of the state of the	Schedule Profile	FY 2007	FY 2008	FY 20	09	FY 2010	FY 2011	FY 2012	FY 2013
CommunicationsImage: constraint of the sector o	Integrated Flight Test								
Interoperability Tests4QImage: Constraint of the sector of the sec	ASIP Flight Tests in Israel	2Q		1Q					
Interoperability Field Demonstration2QImage: Constraint of the sector of the sec	Communications								
Program MilestonesIIIIIITB Experiments (Three each year)1Q-4QIIIIIIASIP Phase II1Q-3QIII	Interoperability Tests	4Q							
ITB Experiments (Three each year)1Q-4QImage: Constraint of the each year)1Q-4QImage: Constraint of the each year)Image: Constraint of the each year)ASIP Phase II1Q-3QImage: Constraint of the each year)1Q-4QImage: Constraint of the each year)Image: Constraint of the each year)ASIP Phase III2Q-4QImage: Constraint of the each year)2Q-4QImage: Constraint of the each year)Image: Constraint of the each year)ASIP Follow-On Feasibility Study2Q-4QImage: Constraint of the each year)Image: Constraint of the each year)Image: Constraint of the each year)Production MilestonesImage: Constraint of the each year)Image: Constraint of the each year)Image: Constraint of the each year)Image: Constraint of the each year)Development MilestonesImage: Constraint of the each year)Image: Constraint of the each year)Image: Constraint of the each year)Image: Constraint of the each year)	Interoperability Field Demonstration	2Q							
ASIP Phase II1Q-3QImage: Constraint of the second se	Program Milestones								
ASIP Phase III2Q-4QImage: Constraint of the second s	ITB Experiments (Three each year)	1Q-4Q							
ASIP Follow-On Feasibility Study 2Q-4Q Image: Constraint of the study of the st	ASIP Phase II	1Q-3Q							
Production MilestonesImage: Comparison of the systemImage: Comparison of the system	ASIP Phase III	2Q-4Q							
Arrow Co-Production 1Q-4Q Image: Comparison of the system of the sy	ASIP Follow-On Feasibility Study	2Q-4Q							
Development Milestones	Production Milestones								
	Arrow Co-Production	1Q-4Q							
Short Range Ballistic Missile Defense 1Q-4Q en	Development Milestones								
	Short Range Ballistic Missile Defense	10-40							
	Short Range Ballistic Missile Defense	1Q-4Q							

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Justif	ication		Date Februar	y 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)		NCLATURE Ballistic Mis	sile Defense	Terminal D	efense Segm	ent
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), Coproduction 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 I	Proiect Justif	ication	February 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (R-1 NOMENCLAT		efense Segment	
B. Accomplishments/Planned Program					
	FY	¥ 2007	FY 2008	FY 2009	
Arrow System Improvement Program		0	55,000	55,	
RDT&E Articles (Quantity)		0	2		
robust regional Theater Ballistic Missile (TBM) threats. FY08 Planned Program: RDT&E Articles: (Two Missile Total) Two Block 4.0 Arrow test mi	issiles for in	tercept testing.			
 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 Spar) flight tests in Isra	el		
 Continue enhancing Arrow interoperability development and val Initiate verification and validation, Phase III of the ASIP program 	idation to in	-			
 FY09 Planned Program: RDT&E Articles: (Three Missile Total) Three Block 4.0 Arrow test : Conduct Caravan II flight tests at U.S. test range. Test will include 		1 0	Long Dongs Air Lounshed '	Tourset and a second	
 Conduct Caravan II flight tests at 0.5. test range. Test will include flight test of two Arrow missiles simultaneously intercepting a SI Continue enhancing Arrow interoperability development and val 	hort Range	Air Launched targ	et and a Liquid Fuel System	e	
• Initial Operational Capability of the Block 4.0 Arrow Weapon Sy	ystem				
Conduct Joint Interoperability Exercise Juniper Cobra with Israe	and U.S. f	orces.			

E Project Justif es (ACD&P) FY	R-1 NOMENCLATU	Date February 2008 URE c Missile Defense Terminal FY 2008	Defense Segment
es (ACD&P)	R-1 NOMENCLATU 0603881C Ballistic	JRE c Missile Defense Terminal	
	0603881C Ballistic 7 2007	c Missile Defense Terminal	
	7 2007		
FY		FY 2008	EX 2000
	0		FY 2009
		20,000	0
	0	0	0
th emerging th n to compleme ternatives incl -tier componer	reats of WMD from ent the current Arro uding U.S. BMDS to the Israeli Miss	w Weapon System. They a elements to meet the Israel sile Defense Architecture	aeli Missile Defense are working with Israeli l defense requirements.
FY	2007	FY 2008	FY 2009
	0	36,753	13,076
	0	6	6
issiles. The go ts and advance	bals of the Co-production of the U.S. industrial work share with a	action effort are to create the and technology base in de	he ability to accelerate efensive ballistic missile
	n to complement ternatives incl ternatives incl	n to complement the current Arrow ternatives including U.S. BMDS of ternatives including U.S. BMDS of ternatives including U.S. BMDS of ternatives (Analysis of Alternative (Analysis of Alternative	0 36,753 0 6 apon System by establishing a capability in the United State issiles. The goals of the Co-production effort are to create the ts and advance the U.S. industrial and technology base in de tere is a ~30% work share with a U.S. partner for producing

Project: WX26 Israeli ARROW Program

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Missile Defense A sense (MDA) E-Likit D 24 DDT&F I	Duciest Institutes		Date February 2	0.00	
Missile Defense Agency (MDA) Exhibit R-2A RDT&E H APPROPRIATION/BUDGET ACTIVITY		on -1 NOMENCLA	, i i i i i i i i i i i i i i i i i i i	008	
RDT&E, DW/04 Advanced Component Development and Prototypes (istic Missile Defense Te	rminal Dafanca Sam	mont
RD I &E, D W/04 Advanced Component Development and I lototypes ((ACDAI) 0 FY 20		FY 2008		
Israeli Test Bed (ITB)	FY 20			FY 20	3,53
RDT&E Articles (Quantity)		0	3	,535	3,33
	TI (D 11	ç			
The Israeli Test Bed (ITB) is a cooperative effort conducted under th					
between the U.S. and Israel. The ITB program commenced on 30 Ma		C C		1 \ /	0
simulation facility for the purpose of developing, analyzing, and eval					
algorithms. The principal ITB facility resides at in Holon, Israel. A s	second ITB cap	ability is ope	rational at the U.S. Arr	ny`s Space and Mi	ssile
Defense Command in Huntsville, Alabama.					
FY08 Planned Program:					
 Design, Code, and Integrate software enhancements in ITB for ex 	xperiments to l	e conducted	in FY08 and for those	planned in FY09	
 Design, Conduct and Provide analysis on ITB experiments in FY 	208				
• Development of tools, interfaces and tactics for SRBMD systems	S				
• Evaluation of regional defense concepts and impacts on interoper	rability				
• Proceed on plan to further modularize ITB to bring greater capab	•	ility to US/Is	raeli users		
FY09 Planned Program:					
107 10000000000000000000000000000000000	vnorimonto to 1	a conducted	in FY09 and for those	planned in FY10	
Design Code and Integrate software enhancements in ITB for example.				plumou m r r r v	
 Design, Code, and Integrate software enhancements in ITB for experiments in EV Design, Conduct and Provide analysis on ITB experiments in EV 	-	e conducted		1	
• Design, Conduct and Provide analysis on ITB experiments in FY	209			1	
 Design, Conduct and Provide analysis on ITB experiments in FY Evaluation of regional defense concepts and impacts on interoper 	209 rability			1	
 Design, Conduct and Provide analysis on ITB experiments in FY Evaluation of regional defense concepts and impacts on interoper 	209 rability				
 Design, Conduct and Provide analysis on ITB experiments in FY Evaluation of regional defense concepts and impacts on interoper 	709 rability pility and flexit	ility to US/Is	raeli users	- 	009
 Design, Conduct and Provide analysis on ITB experiments in FY Evaluation of regional defense concepts and impacts on interoper 	209 rability	ility to US/Is	raeli users FY 2008	,215	009

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

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		Date	
Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Just		February 2008	
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATUR		
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603881C Ballistic M	Aissile Defense Terminal Defense Termina	efense Segment
necessary for the system to maintain a robust capability against evolving region consulting firm.	al threats. The ISA&I	effort is contracted by ME)A to an Israeli
 FY08 Planned Program: Assess IMDS performance against emerging regional ballistic missile threa Refine growth path options necessary for the Arrow missile defense system Evaluate Israeli architecture studies to assess near-term U.S. missile defense defense architectures. FY09 Planned Program: Assess IMDS performance against emerging regional ballistic missile threa Refine growth path options necessary for the Arrow missile defense system Evaluate Israeli architecture studies to assess near-term U.S. missile threa Refine growth path options necessary for the Arrow missile defense system Evaluate Israeli architecture studies to assess near-term U.S. missile defense system 	to remain an effective e systems and their imp ts. to remain an effective	pact on contributing to futu ballistic missile defense f	ure Israeli missile for the State of Israel.
F	FY 2007	FY 2008	FY 2009
Program Support	0	439	445
RDT&E Articles (Quantity)	0	0	0
 The program support task encompasses activities that support, but are not part of documentation of foreground and background data rights for ASIP, ITB, ADP, maintenance of security plans and classification guides; and analysis and engin contractor support and expertise in support of the Program Element Monitor. FY08 Planned Program: Continue documentation of background/foreground data rights for ASIP, A Maintain security plans and classification guides. Manage and support ITB modifications and experiments. 	and legacy programs; eering support of the IS	security support to include SA&I and ITB programs. I	e development and
• Support Israeli and U.S. Missile Defense System integration and related tes	tactivition		

• Support Israeli and U.S. Missile Defense System integration and related test activities.

			155IFIED		Date			
Missile Defense Agency (MDA)	Fyhihit R-7A R	DT&F Projec	t Instification			uary 2008		
APPROPRIATION/BUDGET ACTIVITY	Exhibit K-2A K	DIGETIOJEC		IOMENCLATI		uary 2000		
RDT&E, DW/04 Advanced Component Develop	ment and Prot	totypes (ACD				ense Termina	l Defense Seg	ment
FY09 Planned Program:			/				0	
• Continue documentation of background/for	earound data	rights for AS	IP Arrow co	production	and ITB			
Maintain security plans and classification g	0	lights for AS		-production,	and ITD.			
		C	1 I I C	Missile Defe			1 1 1	
 Manage and support ITB modifications and 	experiments.	Support Isra	en and U.S.	Missile Defe	nse System i	ntegration an	a related test	activities.
C. Other Program Funding Summary								
o. Other Program Funding Summary								Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost
PE 0207998C BRAC	0	103,219	159,938	61,931	8,724	0	0	333,81
PE 0603175C Ballistic Missile Defense Technology	183,849	108,423	118,718	115,234	120,152	127,012	130,358	903,74
PE 0603882C Ballistic Missile Defense Midcourse Defense								
legment	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,69
PE 0603883C Ballistic Missile Defense Boost Defense Segment	622,218	510,241	421,229	423,927	652,642	799,792	991,839	4,421,88
PE 0603884C Ballistic Missile Defense Sensors	514,989	586,121	1,221,143	1,184,280	1,099,649	1,077,632	823,583	6,507,39
PE 0603886C Ballistic Missile Defense Sensors PE 0603886C Ballistic Missile Defense System Interceptors	341,358	340,107	386,817	500,966	708,803	815,433	553,136	3,646,62
PE 0603888C Ballistic Missile Defense Test and Targets	584,615	621,861	673,691	672,976	690,938	708,991	719,209	4,672,28
PE 0603890C Ballistic Missile Defense System Core	425,889	413,934	432,262	482,947	605,219	561,947	571,498	3,493,69
PE 0603891C Special Programs - MDA	347,377	196,892	288,315	304,234	538,050	818,136	786,349	3,279,35
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	7,891,55
PE 0603893C Space Tracking & Surveillance System	311,402	231,528	242,441	266,509	560,130	735,727	938,191	3,285,92
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,455	488,294	649,632	708,582	879,385	3,443,90
PE 0603895C BMD System Space Program	0	16,552	29,771	41,638	56,199	133,915	157,548	435,62
PE 0603896C BMD C2BMC	249,179	447,616	289,277	287,194	270,762	256,767	259,159	2,059,95
PE 0603897C BMD Hercules	46,268	52,462	55,955	55,289	56,400	51,902	52,784	371,06
E 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	73,997	77,205	80,168	81,948	482,52
PE 0603904C Missile Defense Integration & Operations								
Center	104,389	78,557	96,404	100,437	100,366	101,512	102,840	684,50
PE 0603905C BMD Concurrent Test and Operations	21,870	0	0	0	0	0	0	21,87
PE 0603906C Regarding Trench	0	1,986	2,978	4,964	4,963	8,933	8,933	32,75
PE 0603907C Sea Based X-Band Radar (SBX)	0	165,243	0	0	0	0	0	165,24

Project: WX26 Israeli ARROW Program

89 of 116 UNCLASSIFIED MDA Exhibit R-2A (PE 0603881C)

Missile Defense Agency (MDA)	Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification									
APPROPRIATION/BUDGET ACTIVITYR-1 NOMENCLATURE RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)R-1 NOMENCLATURE0603881C Ballistic Missile Defense Terminal Defense Segment										
	FX 2000	EV 2010	EV 2011	EX 2012	EX 2012	Total				
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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	19,73	5,040	5,284	5,370	5,456	62,430		
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,45	3 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.

Missilo D	ofonso Agong	y (MDA) Exhibit R-3	3 DDT&F Drojo	ot Cost Anal	raia	Date Februs	ary 2008	
APPROPRIATION/BUDGET AC	<u> </u>	(MDA) Exhibit K-3	, ND I &E I TOJCC		ysis R-1 NOMENCLA		11 y 2000	
RDT&E, DW/04 Advanced C		Development and 1	Prototypes (AC			stic Missile Defens	se Terminal Def	iense Segment
I. Product Development (-	-		,				
1.110uuct Development		illusuillus ;	T		FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Arrow System Improvement Program								
	1	IAI/	i T					
ASIP	FFP	Israel	0	55,0	00 N	V/A 55,000	N/A	110,000
Arrow Post-ASIP	,,		i l					
Arrow MSE	FFP		0	20,0	00 N	I/A 0	4Q	20,000
Arrow Missile Production Program (AMPP)								
	,,	IAI & Boeing/	i l					
Arrow Missile Production	FFP	Israel&AL	0	36,7	53 N	I/A 13,076	N/A	49,829
Israeli Test Bed (ITB)	1		i l					
	;	Tadiran/	Í					
Israeli Test Bed	FFP	Israel	0	3,5	35 N	I/A 3,535	N/A	7,070
Israeli Systems Architecture and Integration (ISA&I)								
	1	Wales, LTD/	i					
ISA&I	FFP	Israel	0	2,2	15	4Q 2,286	N/A	4,501
Program Support	;		l l					
	;	Various/	Í					
Program Support	FFP	Various	0	4	-39 N	I/A 445	N/A	884
Subtotal Product Development			0	117,9	42	74,342		192284

Remarks

Project: WX26 Israeli ARROW Program

APPROPRIATION/BUDGET	ACTIVITY			R	1 NOMENCLATU		ary 2008	
RDT&E, DW/04 Advance		evelopment and	Prototypes (A		03881C Ballistic		se Terminal Def	fense Segment
II. Support Costs Cost	(\$ in Thousa r	nds)	VI X	· •				0
		ius y		T	FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Support Costs								
Remarks				1			I I	
III. Test and Evaluation	Cost (\$ in T	bouconda)						
III. Test and Evaluation		nousanus)			FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Contract	renorming	Total					- ·
		Activity &	PVs	EY 2008	Obla	EV 2009	Oblg	Total
Cost Categories	Method	Activity &	PYs Cost	FY 2008 Cost	Oblg Date	FY 2009 Cost	Oblg Date	Total Cost
Cost Categories:		Activity & Location	PYs Cost	FY 2008 Cost	Oblg Date	FY 2009 Cost	Oblg Date	Total Cost
Subtotal Test and Evaluation	Method	-			-			
Subtotal Test and Evaluation	Method	-			-			
Subtotal Test and Evaluation	Method	-			-			
Subtotal Test and Evaluation Remarks	Method & Type	Location			-			
Subtotal Test and Evaluation Remarks	Method & Type	Location			Date		Date	
Cost Categories: Subtotal Test and Evaluation Remarks IV. Management Service	Method & Type	Location Thousands)	Cost		Date FY 2008		Date FY 2009	
Subtotal Test and Evaluation Remarks	Method & Type	Location Thousands) Performing	Cost	Cost	Date FY 2008 Award/	Cost	Date FY 2009 Award/	Cost
Subtotal Test and Evaluation Remarks IV. Management Service	Method & Type	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008	Date FY 2008 Award/ Oblg	Cost FY 2009	Date FY 2009 Award/ Oblg	Cost
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories:	Method & Type	Location Thousands) Performing	Cost	Cost	Date FY 2008 Award/	Cost	Date FY 2009 Award/	Cost
Subtotal Test and Evaluation Remarks IV. Management Service	Method & Type	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008	Date FY 2008 Award/ Oblg	Cost FY 2009	Date FY 2009 Award/ Oblg	Cost
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories:	Method & Type	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008	Date FY 2008 Award/ Oblg	Cost FY 2009	Date FY 2009 Award/ Oblg	Cost
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services	Method & Type	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008	Date FY 2008 Award/ Oblg	Cost FY 2009	Date FY 2009 Award/ Oblg	Cost
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services	Method & Type	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008	Date FY 2008 Award/ Oblg	Cost FY 2009	Date FY 2009 Award/ Oblg	Cost
Subtotal Test and Evaluation Remarks IV. Management Service Cost Categories: Subtotal Management Services	Method & Type	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008 Cost	FY 2008 Award/ Oblg Date	Cost FY 2009	Date FY 2009 Award/ Oblg	Cost

	genc	y (M	IDA)) Exl	hibit	R-4	Sch	edul	e Pro	ofile					Missile Defense Agency (MDA) Exhibit R-4 Schedule Profile PROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATU													
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Do	evelo	opm	ent :	and	Pro	toty	pes	(AC	D&	P)								e De	efen	se T	ern	ninal	Def	fens	e Se	gme	nt	
Fiscal Year	2007			20	008			20	09			20	010			20	11			20)12			20)13			
	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					Δ			Δ																				\square
Enhanced Arrow Tests in U.S.												∇																
Integration and Test																												
Interoperability Tests								Δ																				
Interoperability Field Demonstration										Δ																		\square
Program Milestones									-												-							
ITB Experiments (Three each year)																												\square
ASIP Phase III					Δ-							\mathbf{A}																
ASIP Follow-On Feasibility Study					Δ-	LV.																						
Arrow Missile Segment Enhancement									Δ-																	\square		
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Missile Defense A	gency (MDA) Exhi	bit R-4A Schedu	le Detail			Date February 20	08			
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	evelopment and F	Prototypes (ACl		R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment						
Schedule Profile	FY 2007	FY 2008	FY 200	19	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	2	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
ASIP Phase III		1Q-4Q	1Q-4Q	2						
ASIP Follow-On Feasibility Study		1Q-2Q								
Arrow Missile Segment Enhancement			1Q-4Q	2	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Date Februar	y 2008					
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes		NCLATURE Ballistic Mis	sile Defense	Terminal D	efense Segm	ent	
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

Missile Defense Agency (MDA)	E	DT & F Droise	t Instification		Date Eab	ruary 2008		
Missile Defense Agency (MDA) APPROPRIATION/BUDGET ACTIVITY	EXHIDIL K-2A K	DI & E Projec		NOMENCLAT		luary 2008		
RDT&E, DW/04 Advanced Component Develop	ment and Prot	totypes (ACD		3881C Ballisti		ense Termina	l Defense Seo	ment
 Begin RF Seeker Design work 								
6	· · ·							
• Conduct two interceptor flyout and configur	cation tests							
FY09 Planned Program:								
0	· D: 41 01	•		•••••••••••••••••••••••••••••••••••••••			- 1-4 4 4 -	
• Complete Critical Design Review of the ent	ire David's Si	ing system's	Detailed De	esign requirer	nents Hold ir	iterception II	ight tests	
Deliver test launcher								
Acquire first Multi Mission Radar								
• Start up Low Rate Initial Production								
• Continue Block 1.0 and RF Seeker design w	/ork							
• Accomplish first interception flight test								
C. Other Program Funding Summary								
								Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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	2 095 140	2 242 212	2 200 262	2 276 949	1 295 359	046 427	1 102 522	12 140 000
Segment PE 0603883C Ballistic Missile Defense Boost Defense	2,985,140	2,243,213	2,209,262	2,276,848	1,385,258	946,437	1,103,532	13,149,690
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

Project: WX34 Short Range Ballistic Missile Defense

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Missile Defense Agency (MDA)	Exhibit R-2A H	RDT&E Projec	et Justific	ation		Date Feb	ruary 2008				
APPROPRIATION/BUDGET ACTIVITY	(R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment							
RDT&E, DW/04 Advanced Component Develop	nent and Pro	totypes (ACD	(4%	0603	881C Ballisti	c Missile Def	ense Termina	il Defense Seg	ment		
								Total			
	FY 2007	FY 2008	FY 200	09	FY 2010	FY 2011	FY 2012	FY 2013	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	6,404	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	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	6,453	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.

	CTIVITY	ovelonment and	Drototymag (AC)		OMENCLATUR		e Terminal Defe	ngo Sogment
RDT&E, DW/04 Advanced	*	*	Prototypes (AC	D&P) 00038	bally Ballistic I	viissile Delense	e Terminal Dele	ense Segment
I. Product Development	Cost (\$ in T	housands)	· · · · ·		EV 2000		EX 2000	
	Contract	Deufermeine	T-4-1		FY 2008		FY 2009 Award/	
	Contract Method	Performing Activity &	Total PYs	FY 2008	Award/ Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
David`s Sling Weapon System	a Type	Location	COSt	COSt	Date	Cost	Date	Cost
burnu s bining (reupon bystem		Rafael/						
SRBMD Program	FFP	Israel	0	36,541	3Q	44,895	3Q	81,436
Subtotal Product Development			0	36,541		44,895		81436
Remarks								
II. Support Costs Cost (<u>\$ in Thousan</u>	nds)	r		TU A A A A			
II Sunnart Casts - Cast ()	S in Thousan	nds)						
II. Support Costs Cost (\$ in Thousan	ids)			FY 2008		FY 2009	
II. Support Costs Cost (Contract	Performing	Total		Award/		Award/	
`	Contract Method	Performing Activity &	PYs	FY 2008	Award/ Oblg	FY 2009	Award/ Oblg	Total
Cost Categories:	Contract	Performing		FY 2008 Cost	Award/	FY 2009 Cost	Award/	Total Cost
II. Support Costs Cost (Cost Categories: Subtotal Support Costs	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
Cost Categories:	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
Cost Categories: Subtotal Support Costs	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type	Performing Activity & Location	PYs		Award/ Oblg		Award/ Oblg	
Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type	Performing Activity & Location	PYs		Award/ Oblg Date		Award/ Oblg Date	
Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type	Performing Activity & Location	PYs Cost		Award/ Oblg Date		Award/ Oblg Date	
Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type Cost (\$ in T Contract	Performing Activity & Location Thousands) Performing	PYs Cost Total	Cost	Award/ Oblg Date FY 2008 Award/	Cost	Award/ Oblg Date FY 2009 Award/	Cost
Cost Categories: Subtotal Support Costs Remarks III. Test and Evaluation	Contract Method & Type Cost (\$ in T Contract Method	Performing Activity & Location 'housands) Performing Activity &	PYs Cost Total PYs	Cost FY 2008	Award/ Oblg Date FY 2008 Award/ Oblg	Cost FY 2009	Award/ Oblg Date FY 2009 Award/ Oblg	Cost
Cost Categories: Subtotal Support Costs	Contract Method & Type Cost (\$ in T Contract	Performing Activity & Location Thousands) Performing	PYs Cost Total	Cost	Award/ Oblg Date FY 2008 Award/	Cost	Award/ Oblg Date FY 2009 Award/	Cost

APPROPRIATION/BUDGET		(MDA) Exhibit R-3	U.		NOMENCLATU		ary 2008	
RDT&E, DW/04 Advanced		evelopment and I	Prototypes (AC				se Terminal Def	fense Segment
V. Management Service	es Cost (\$ in	Thousands)		-				
U	Contract Method	Performing Activity &	Total PYs	FY 2008	FY 2008 Award/ Oblg	FY 2009	FY 2009 Award/ Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
Subtotal Management Services								
lemarks								
Project Total Cost			0	36,541		44,895		81,436
-			Ŭ	50,511		11,055		01,150
Remarks								
Kemarks								
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Missile Defense A	genc	y (N	IDA) Ex	hibit	R-4	Sch	edul	e Pr	ofile								Dat Fe		ary	200	8						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De	evelo	opm	ent	and	Pro	toty	pes	(AC	D&	P)					LAT llisti			e De	efen	se T	ern	ninal	l Def	fens	e Se	gme	nt	
Fiscal Year		20	07			20	08			20)09			20	010			20)11			20)12			20)13	
	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							Δ																					
Critical Design Review											Δ																	
Flight Tests	-				-								-				-											
System Demonstration							Δ	Δ			Δ										Γ							
System Engineering				<u> </u>																		1		I				
Develop Initial Design																					Γ							
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Missile Defense Ag	ency (MDA) Exhi	bit R-4A Schedul	e Detail			Date February 20	08	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component De					MENCLATURE 1C Ballistic Mis	-		egment
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	10	-4Q				

				Date						
Missile Defense Agency (MDA) Exhibit R-2A RDT&	E Project Justi			Februar	ry 2008					
APPROPRIATION/BUDGET ACTIVITY			NCLATURE							
RDT&E, DW/04 Advanced Component Development and Prototyp	es (ACD&P)	0603881C	Ballistic Mis	sile Defense	e Terminal D	efense Segm	ent			
COST (\$ in Thousands)	2,574	FY 2007 2,574 0 8 has been ca	FY 2007	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				
RDT&E Articles Qty	0	0	0	0	0	0				
A. Mission Description and Budget Item Justification Upper Tier BM intercepts produce multiple debris tracks that incr lead to missile wastage if debris tracks are engaged. Currently fiel This effort will enable the PAC-3 element of the BMDS to manag created by BMDS Upper Tier elements engagements, enabling a	lded systems i ge radar resour	nust mitigate	e Upper Tier ely as well a	· Intercept I s preventing	Debris effect g missile wa	s.	-			
B. Accomplishments/Planned Program	F	Y 2007		FY 2008		FY 200	9			
PAC-3 Debris Mitigation		2,	574		0					
RDT&E Articles (Quantity)			0		0					
 FY07 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorith Developmental and Operational Testing 	m									

Missile Defense Accurate (MDA)			• T	-	Date Fabr	many 2008		
Missile Defense Agency (MDA)	Exhibit K-2A K	DI &E Projec				ruary 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Develop	nont and Prot	otypes (ACD		NOMENCLAT 3881C Ballisti		onco Tormino	I Dofonco Soa	mont
C. Other Program Funding Summary		orypes (ACD		Jool Dallist	c wiissile Dei		i Derense seg	ment
C. Other Program Funding Summary		i		1	i	i	1	Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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

Project: 0806 PAC-3 Block 2006

103 of 116 UNCLASSIFIED MDA Exhibit R-2A (PE 0603881C)

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

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.

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.

RDT&E, DW/04 Advanced	*	*	Prototypes (AC	D&P) 06038	881C Ballistic	Missile Defense	e Terminal Defe	nse Segment
I. Product Development	Cost (\$ in T	housands)						
					FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost
PAC-3 Debris Mitigation								
			2,574	0	N/A	0	N/A	2,574
Subtotal Product Development			2,574	0		0		2574
II. Support Costs Cost ((\$ in Thousar	nds)						
II Sunnart Casta Cast	¢ in Thousar	da)						
					FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	Method & Type	Activity & Location	PYs Cost	FY 2008 Cost	Oblg Date	FY 2009 Cost	Oblg Date	Total Cost
Cost Categories: Subtotal Support Costs		•			ũ		Ũ	
Subtotal Support Costs		•			ũ		Ũ	
Subtotal Support Costs		•			ũ		Ũ	
Subtotal Support Costs Remarks	& Type	Location			ũ		Ũ	
Subtotal Support Costs Remarks	& Type	Location			Date		Date	
Subtotal Support Costs Remarks	& Type	Location	Cost		Date FY 2008		Date FY 2009	
Subtotal Support Costs Remarks	& Type Cost (\$ in T Contract	Location Thousands) Performing		Cost	Date FY 2008 Award/	Cost	Date FY 2009 Award/	Cost
Subtotal Support Costs Remarks III. Test and Evaluation	& Type Cost (\$ in T Contract Method	Location Thousands) Performing Activity &	Cost Total PYs	Cost FY 2008	Date FY 2008	Cost FY 2009	Date FY 2009 Award/ Oblg	
-	& Type Cost (\$ in T Contract	Location Thousands) Performing	Cost	Cost	Date FY 2008 Award/ Oblg	Cost	Date FY 2009 Award/	Cost

Missile	Defense Agency	(MDA) Exhibit R-3		rt Cost Ana			Date Februa	rv 2008	
APPROPRIATION/BUDGET A RDT&E, DW/04 Advanced	ACTIVITY				R-1 NOMEN	ICLATUI Ballistic	RE	e Terminal Def	fense Segment
V. Management Service	s Cost (\$ in	Thousands)							
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	Aw Ol	2008 vard/ blg ate	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services									
Remarks									
Project Total Cost			2,574		0		0	i	2,574
Remarks			2,374		0		0		2,574

&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603		n		Date Februar	y 2008		
COST (\$ in Thousands) FY 2007 FY 2 5 PAC-3 0 0 tE Articles Qty 0 0 : The content in Project WX06 is a continuation of the efforts reported in Project Ission Description and Budget Item Justification RIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the J.S. Army. It is a land-based element built upon the proven PATRIOT air and mis PATRIOT Advanced Capability-3 System was deployed to the Middle East as paral ballistic missiles. Army is responsible for production and further development of Advanced Capability and integration efforts. ccomplishments/Planned Program B Debris Mitigation E Articles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm		I NOMEN	NCLATURE		•		
SPAC-3 0 EE Articles Qty 0 : The content in Project WX06 is a continuation of the efforts reported in Project Ilission Description and Budget Item Justification RIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the J.S. Army. It is a land-based element built upon the proven PATRIOT air and mis PATRIOT Advanced Capability-3 System was deployed to the Middle East as pa ral ballistic missiles. Army is responsible for production and further development of Advanced Capabi me Ballistic Missile Defense System interoperability and integration efforts. ccomplishments/Planned Program B Debris Mitigation E Articles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm	Component Development and Prototypes (ACD&P) 06	03881C	Ballistic Mis	sile Defense	Terminal D	efense Segme	ent
EE Articles Qty 0 : The content in Project WX06 is a continuation of the efforts reported in Project Iission Description and Budget Item Justification RIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the J.S. Army. It is a land-based element built upon the proven PATRIOT air and mis PATRIOT Advanced Capability-3 System was deployed to the Middle East as pa ral ballistic missiles. Army is responsible for production and further development of Advanced Capabi me Ballistic Missile Defense System interoperability and integration efforts. ccomplishments/Planned Program B Debris Mitigation E Articles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm	F(\$ in Thousands) FY 2007 FY	2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
: The content in Project WX06 is a continuation of the efforts reported in Project Lission Description and Budget Item Justification RIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the J.S. Army. It is a land-based element built upon the proven PATRIOT air and mis PATRIOT Advanced Capability-3 System was deployed to the Middle East as pa ral ballistic missiles. Army is responsible for production and further development of Advanced Capabi me Ballistic Missile Defense System interoperability and integration efforts. ccomplishments/Planned Program FY 2007 3 Debris Mitigation tE Articles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm	0	975	10,500	0	0	0	
Iission Description and Budget Item Justification RIOT Advanced Capability-3 (PAC-3) is one of the most mature elements of the J.S. Army. It is a land-based element built upon the proven PATRIOT air and mis PATRIOT Advanced Capability-3 System was deployed to the Middle East as paral ballistic missiles. Army is responsible for production and further development of Advanced Capability and integration efforts. Complishments/Planned Program FY 2007 3 Debris Mitigation EE Articles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm	0	0	0	0	0	0	
B Debris Mitigation FY 2007 B Debris Mitigation FY 2007 AcE Articles (Quantity) Primary SW Design, Coding and Testing of the ECP Algorithm	apability-3 System was deployed to the Middle East as p production and further development of Advanced Capal ense System interoperability and integration efforts.	oart of C	Operation Ira	qi Freedom			
3 Debris Mitigation Atticles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm			i				
Articles (Quantity) 8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm	FY 2007	/	0	FY 2008	975	FY 2009)
8 Planned Program: Primary SW Design, Coding and Testing of the ECP Algorithm			0		0		
Primary SW Design, Coding and Testing of the ECP Algorithm	I		0		0		
	ling and Testing of the FCP Algorithm						
Leveraged participation in FT for ECP checkout							
Everaged participation in FT for ECF checkout	rational Testing						

Missile Defense Agency (MDA)	Justification		Date Febr	uary 2008						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Develop	R-1 N	R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment								
			FY 2007		FY 2008	FY 2008 FY 2009		009		
Evolutionary Development Program (EDP)				0		0		10,500		
RDT&E Articles (Quantity)				0		0				
FY08 Planned Program:						•				
Efforts associated with Evolutionary Developm	ent Program ((EDP) were fur	nded in oth	er Program E	Elements in F	Y08.				
any radar hardware improvements. This will provide increased Lower Tier Element overall effectiveness of the BMDS system. The		0	0	•		1				
US-MEADS.				un potentiun.	y be applied		55 5y 560 mis, m	liciuumg		
•								Total		
US-MEADS. C. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC	FY 2007 0	FY 2008 103,219	FY 2009 159,938	FY 2010 61,931	FY 2011 8,724	FY 2012 0	FY 2013 0	Total Cost 333,812		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total Cost		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense	FY 2007 0 183,849	FY 2008 103,219 108,423	FY 2009 159,938 118,718	FY 2010 61,931 115,234	FY 2011 8,724 120,152	FY 2012 0 127,012	FY 2013 0 130,358	Total Cost 333,812 903,746		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense Segment PE 0603883C Ballistic Missile Defense Boost Defense	FY 2007 0	FY 2008 103,219	FY 2009 159,938	FY 2010 61,931	FY 2011 8,724	FY 2012 0	FY 2013 0	Total Cost 333,812		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense Segment PE 0603883C Ballistic Missile Defense Boost Defense Segment	FY 2007 0 183,849 2,985,140	FY 2008 103,219 108,423 2,243,213	FY 2009 159,938 118,718 2,209,262	FY 2010 61,931 115,234 2,276,848	FY 2011 8,724 120,152 1,385,258	FY 2012 0 127,012 946,437	FY 2013 0 130,358 1,103,532	Total Cost 333,812 903,746 13,149,690		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense Segment PE 0603883C Ballistic Missile Defense Boost Defense Segment PE 0603884C Ballistic Missile Defense Sensors	FY 2007 0 183,849 2,985,140 622,218	FY 2008 103,219 108,423 2,243,213 510,241	FY 2009 159,938 118,718 2,209,262 421,229	FY 2010 61,931 115,234 2,276,848 423,927	FY 2011 8,724 120,152 1,385,258 652,642	FY 2012 0 127,012 946,437 799,792	FY 2013 0 130,358 1,103,532 991,839	Total Cost 333,812 903,746 13,149,690 4,421,888		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense Segment PE 0603883C Ballistic Missile Defense Boost Defense Segment PE 0603884C Ballistic Missile Defense Sensors PE 0603884C Ballistic Missile Defense System Interceptors	FY 2007 0 183,849 2,985,140 622,218 514,989	FY 2008 103,219 108,423 2,243,213 510,241 586,121	FY 2009 159,938 118,718 2,209,262 421,229 1,221,143	FY 2010 61,931 115,234 2,276,848 423,927 1,184,280	FY 2011 8,724 120,152 1,385,258 652,642 1,099,649	FY 2012 0 127,012 946,437 799,792 1,077,632	FY 2013 0 130,358 1,103,532 991,839 823,583	Total Cost 333,812 903,746 13,149,690 4,421,888 6,507,397		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense Segment PE 0603883C Ballistic Missile Defense Boost Defense Segment PE 0603884C Ballistic Missile Defense Sensors PE 0603886C Ballistic Missile Defense System Interceptors PE 0603888C Ballistic Missile Defense Test and Targets	FY 2007 0 183,849 2,985,140 622,218 514,989 341,358	FY 2008 103,219 108,423 2,243,213 510,241 586,121 340,107	FY 2009 159,938 118,718 2,209,262 421,229 1,221,143 386,817	FY 2010 61,931 115,234 2,276,848 423,927 1,184,280 500,966	FY 2011 8,724 120,152 1,385,258 652,642 1,099,649 708,803	FY 2012 0 127,012 946,437 799,792 1,077,632 815,433	FY 2013 0 130,358 1,103,532 991,839 823,583 553,136	Total Cost 333,812 903,746 13,149,690 4,421,888 6,507,397 3,646,620 4,672,281		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC PE 0603175C Ballistic Missile Defense Technology PE 0603882C Ballistic Missile Defense Midcourse Defense Segment PE 0603883C Ballistic Missile Defense Boost Defense Segment PE 0603884C Ballistic Missile Defense Sensors PE 0603886C Ballistic Missile Defense System Interceptors PE 0603888C Ballistic Missile Defense Test and Targets PE 0603890C Ballistic Missile Defense System Core	FY 2007 0 183,849 2,985,140 622,218 514,989 341,358 584,615	FY 2008 103,219 108,423 2,243,213 510,241 586,121 340,107 621,861	FY 2009 159,938 118,718 2,209,262 421,229 1,221,143 386,817 673,691	FY 2010 61,931 115,234 2,276,848 423,927 1,184,280 500,966 672,976	FY 2011 8,724 120,152 1,385,258 652,642 1,099,649 708,803 690,938	FY 2012 0 127,012 946,437 799,792 1,077,632 815,433 708,991	FY 2013 0 130,358 1,103,532 991,839 823,583 553,136 719,209	Total Cost 333,812 903,746 13,149,690 4,421,888 6,507,397 3,646,620		
US-MEADS. C. Other Program Funding Summary PE 0207998C BRAC	FY 2007 0 183,849 2,985,140 622,218 514,989 341,358 584,615 425,889	FY 2008 103,219 108,423 2,243,213 510,241 586,121 340,107 621,861 413,934	FY 2009 159,938 118,718 2,209,262 421,229 1,221,143 386,817 673,691 432,262	FY 2010 61,931 115,234 2,276,848 423,927 1,184,280 500,966 672,976 482,947	FY 2011 8,724 120,152 1,385,258 652,642 1,099,649 708,803 690,938 605,219	FY 2012 0 127,012 946,437 799,792 1,077,632 815,433 708,991 561,947	FY 2013 0 130,358 1,103,532 991,839 823,583 553,136 719,209 571,498	Total Cost 333,812 903,746 13,149,690 4,421,888 6,507,397 3,646,620 4,672,281 3,493,696		

Project: WX06 PAC-3

108 of 116 UNCLASSIFIED MDA Exhibit R-2A (PE 0603881C)

Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification							ruary 2008		
APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE						RE			
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603881C Ba					allistic	Missile Def	ense Termina	l Defense Seg	ment
									Total
	FY 2007	FY 2008	FY 2009	FY 20	10	FY 2011	FY 2012	FY 2013	Cost
PE 0603894C Multiple Kill Vehicle	133,615	229,943	354,4	5 48	8,294	649,632	708,582	879,385	3,443,906
PE 0603895C BMD System Space Program	0	16,552	29,7	/1 4	1,638	56,199	133,915	157,548	435,623
PE 0603896C BMD C2BMC	249,179	447,616	289,2	7 28	7,194	270,762	256,767	259,159	2,059,954
PE 0603897C BMD Hercules	46,268	52,462	55,9	5 5	5,289	56,400	51,902	52,784	371,060
PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,93	32 7.	3,997	77,205	80,168	81,948	482,527
PE 0603904C Missile Defense Integration & Operations									
Center	104,389	78,557	96,4)4 100	0,437	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	2,9	18 4	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	19,7	34 .:	5,040	5,284	5,370	5,456	62,430
PE 0901598C Management Headquarters - MDA	93,350	80,392	86,4	53 70	0,355	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.

	Defense Agency	(MIDA) EXHIDIC K-	SKDI & E FIOJEC			Februar	ly 2000	
APPROPRIATION/BUDGET A					NOMENCLATU			~
DT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603881C Ballistic Missile Defense Terminal Defense Segme							nse Segment	
I. Product Development	Cost (\$ in T	housands)						
-					FY 2008		FY 2009	
	Contract	Performing	Total		Award/		Award/	
	Method	Activity &	PYs	FY 2008	Oblg	FY 2009	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	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 Thousar	nds)						
	\$ in Thousar	nds)			FY 2008		FY 2009	
WORK IN PROGRESS	\$ in Thousar Contract		Total		FY 2008 Award/		FY 2009 Award/	
WORK IN PROGRESS		Performing	Total PYs	FY 2008	Award/	FY 2009	Award/	Total
WORK IN PROGRESS	Contract			FY 2008 Cost		FY 2009 Cost		Total Cost
WORK IN PROGRESS	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories:	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs	Contract Method	Performing Activity &	PYs		Award/ Oblg		Award/ Oblg	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type	Performing Activity & Location	PYs		Award/ Oblg		Award/ Oblg	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs	Contract Method & Type	Performing Activity & Location	PYs		Award/ Oblg Date		Award/ Oblg Date	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type	Performing Activity & Location	PYs Cost		Award/ Oblg Date		Award/ Oblg Date	
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type Cost (\$ in T Contract	Performing Activity & Location 'housands) Performing	PYs Cost Total	Cost	Award/ Oblg Date FY 2008 Award/	Cost	Award/ Oblg Date	Cost
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs Remarks III. Test and Evaluation	Contract Method & Type Cost (\$ in T Contract Method	Performing Activity & Location	PYs Cost	Cost FY 2008	Award/ Oblg Date	Cost FY 2009	Award/ Oblg Date	Cost
WORK IN PROGRESS II. Support Costs Cost (Cost Categories: Subtotal Support Costs Remarks	Contract Method & Type Cost (\$ in T Contract	Performing Activity & Location 'housands) Performing Activity &	PYs Cost Total PYs	Cost	Award/ Oblg Date FY 2008 Award/ Oblg	Cost	Award/ Oblg Date FY 2009 Award/ Oblg	Cost

Missile D	efense Agency	(MDA) Exhibit R.3	3 RDT&E Projec	rt Cost Ana	lycic		Date Februa	ary 2008	
Missile Defense Agency (MDA) Exhibit R-3 RDT&E Project Cost A APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)					R-1 NOMENCLATURE 0603881C Ballistic Missile Defense Terminal Defense Segment				
IV. Management Services Cost (\$ in Thousands)						Damsue	wiissiie Derens		tense segment
Cost Categories:	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	A	7 2008 ward/ Oblg Date	FY 2009 Cost	FY 2009 Award/ Oblg Date	Total Cost
Subtotal Management Services Remarks									
Acmar K5									
Project Total Cost			0		975		10,500	I	11,475
Toject Total Cost							10,500		11,475
Remarks					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Remarks									
Remarks									
Remarks									

				Date				
Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justification				y 2008			
APPROPRIATION/BUDGET ACTIVITY		R-1 NOME	NCLATURE					
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	0603881C	Ballistic Mis	ssile Defense	e Terminal D	efense Segm	ent	
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

Project: 0602 Program-Wide Support

Miggila Defense Agenery (MDA)	E	DT & F Droico	t Instificatio	-	Date	ruary 2008		
Missile Defense Agency (MDA) H APPROPRIATION/BUDGET ACTIVITY	EXHIDIL K-ZA K	DI &E Projec		NOMENCLAT		Tuary 2000		
RDT&E, DW/04 Advanced Component Developn	nent and Prot	totypes (ACD		3881C Ballisti		ence Termina	l Defense Sea	ment
C. Other Program Funding Summary		otypes (102		JUUIC Dumou			I Derense sve	Incirc
C. Other I rogram Funding Summary	· · · · · · · · · · · · · · · · · · ·	t		1		I		Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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	2 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	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

Project: 0602 Program-Wide Support

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)		NCLATURE Ballistic Mis	sile Defense	Terminal D	efense Segm	ent	
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

Miggila Defense Agenery (MDA)	E	DT & F Droico	t Instificatio	-	Date	ruary 2008		
Missile Defense Agency (MDA) H APPROPRIATION/BUDGET ACTIVITY	EXHIDIL K-ZA K	DI &E Projec		NOMENCLAT		Tuary 2000		
RDT&E, DW/04 Advanced Component Developn	nent and Prot	totypes (ACD		3881C Ballisti		ence Termina	l Defense Sea	ment
C. Other Program Funding Summary		otypes (102		JUUIC Dumou			I Derense sve	Incirc
C. Other I rogram Funding Summary	· · · · · · · · · · · · · · · · · · ·	t		1		i		Total
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	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 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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PE 0603898C BMD Joint Warfighter Support	49,833	49,394	69,982	2 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	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

Project: ZX40 Program-Wide Support

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

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Project: ZX40 Program-Wide Support

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