Missile Defense Agency (MDA) Exhibit R-2 RDT&E Bu	istification			ate Iay 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes		MENCLAT		ense System	Interceptor	S		
COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	330,874	385,493	0					
WX13 Ballistic Missile Defense Interceptor Capability Development	317,340	374,343	0					
ZX40 Program-Wide Support	13,534	11,150	0					

A. Mission Description and Budget Item Justification

A.1 System Element Description

The Kinetic Energy Interceptors (KEI) mission is to develop a mobile, multi-use (boost, ascent, midcourse) kinetic energy intercept capability to enhance the layered defense performance of the Ballistic Missile Defense System (BMDS). KEI's unique mobility and performance combination brings to the BMDS the capability to engage threats in the early, forward portion of the BMDS battle space. The interceptor design concept is compatible with land-mobile and sea-mobile operations and features a high performance booster designed to carry multiple payload types. The KEI common booster will be capable of carrying Multiple Kill Vehicles (MKVs) and other advanced payloads to identify, seek out, and destroy lethal objects within a threat cluster in the future capability development block. With a multiple kill vehicle payload, more objects can be destroyed with one interceptor. This would save interceptor inventory, reduce infrastructure costs, and improve overall probability of engagement success for the BMDS. KEI's mobility, fast acceleration, and capability to close the fire control loop during the boost phase enable delivery of these payloads early in the midcourse timeline. KEI's ability to execute its suite of missions is enabled by a flexible fire control design that allows the interceptor to receive data from a diverse suite of ballistic missile defense sensors (land, sea, and space), fuse this information in real time, and execute an effective intercept. By adding a boost phase kinetic energy intercept layer and flexible ascent/midcourse capabilities to future BMDS capabilities, KEI enables the MDA to pace the threat, fill performance gaps, and increase BMDS effectiveness.

The program execution will focus on the orderly termination and close-out FY2009.

The KEI program had been restructured in 2007 to emphasize development of a high acceleration booster. However, we have encountered considerable technical issues and delays during development, such as repeated first and second booster case failures, thrust nozzle concerns, overheating of avionics, thermal battery canister failure, and C-Band transponder failure during shock testing. Even if such technical problems could be solved without excessive cost and schedule implications, we have become concerned about the cost-effectiveness of the KEI interceptor, which is currently estimated at \$75 million per unit.

		Date
Missile Defense Agency (MDA) Exhibit R-2 RDT&E Budget Item Jus	tification	May 2009
APPROPRIATION/BUDGET ACTIVITY	R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	0603886C Ballistic Missile I	Defense System Interceptors
	ooosoooc Dumstie Missie	Jerense System interceptors

MDA Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting BMD-System level testing. KEI Element level testing is funded as part of a developmental program and reflected in this Program Element submission. BMDS Test Policy, MDA Directive 3202.03 (Jan 09) applies to all Flight, Integrated Ground, and Distributed Ground Tests, and Post-test analysis and reconstructions listed in the Integrated Master Test Plan.

The KEI Program Office will implement a Program Termination Plan. This plan will include the identification of program deliverables and/or salvageable technologies that have value to other Government entities. The program office will implement the terminating contract modifications to include termination liability cost activities and resolution of unliquidated obligations. The program office will implement a funding plan for program termination, program office disestablishment, and other anticipated funding requirements. The program office will establish a timetable for withdrawal of program funds and address the status of funding actions that may have an actual or contingent liability. This plan will include a disposition of all manpower authorizations. Finally, the plan will address requirements for data and drawings storage, program documentation, and configuration management, and KEI program office files and records.

KEI supports MDA System Engineering in developing a plan for KEI element level simulation (KEISim) integration in BMDS level simulations for use in: Wargames, Ground Tests, Performance Assessments, and other system level modeling and simulation events. KEISim development is focused on modeling interceptor performance for midcourse engagements using GFE payloads. KEI uses detailed engineering models of booster performance to support development and ground tests. A Verification, Validation & Accreditation Program to accredit KEISim for program and MDA uses is planned for the future.

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

Kinetic Energy Interceptors (KEI) will provide the Ballistic Missile Defense System (BMDS) a strategically deployable, tactically mobile, land and sea-based capability to defeat medium to long-range ballistic missiles during the boost, ascent, and midcourse phase of flight. Currently, KEI is focused on developing a high performance booster. Program plans focus on booster development and its integration with a separately developed Kill Vehicle (KV). KEI is currently in the Capabilities Development Block.

		encentioon		
				Date
	(MDA) Exhib	it R-2 RDT&E Budget Item Just	ification	May 2009
APPROPRIATION/BUDGET ACTIVITY			R-1 NOMENCLATURE	
RDT&E, DW/04 Advanced Component	t Developmen	it and Prototypes (ACD&P)	0603886C Ballistic Missile	Defense System Interceptors
A.3 Major System Element Goals				
Concurrent with the release of the FY	l OPB submis	ssion, the KEI Program Offic	e will implement a Progra	am Termination Plan.
A.4 Major Events Schedule and Des	anintian			
A.4 wajor Events Scheuule and Des	<u>cription</u>			
Major Event	Project	Timeframe	Description	
Flight Test				
Kinetic Energy Interceptors Flight Test Events				
			•	
			•	
Other				
Interceptor	111110	10 53 0000		
Stage 2 Rocket Motor Static Fire One	WX13	1Q FY 2008		e under varied environments
	WW 12	40 EV 2009	Completed	
Stage 2 Rocket Motor Static Fire Two	WX13	4Q FY 2008		e under varied environments
Sterre 1 De slast Materie Statis Eine Three	WV12	10 EV 2000	Completed	
Stage 1 Rocket Motor Static Fire Three	WX13	1Q FY 2009		e under varied environments
Stage 1 Rocket Motor Static Fire Four	WX13	3Q FY 2009	• Completed	e under varied environments
Stage 2 Rocket Motor Static Fire Four	WX13 WX13	3Q FY 2009		e under varied environments
Stage 2 Rocket Motor Static Fire Four	WX13 WX13	3Q FY 2009		
Stage 2 Rocket Motor Static File Three	WA15	3Q F I 2009	vandate performance	e under varied environments
Stage 2 Rocket Motor Static File Thief	WA13	JQ 11 2009	Validate performance	e under varied environments
1				
1				

APPROPRIATION/BUDGET ACTIVITY	DA) Exhibit R-2 RDT&E	Duuget Item			May 2009	
RDT&E, DW/04 Advanced Component Dev	valonmont and Prototy	mag (ACD &I		MENCLATURE	la Defense Sustan Interestant	
KD1&E, DW/04 Advanced Component Dev	veropment and Prototy	pes (ACD&P	2) 0603886	C Ballistic Miss	ile Defense System Interceptors	
8. Program Change Summary	FY 2008	FY 2009	FY 2010	FY 2011		
Previous President's Budget (FY2009 PB)	340,107	386,817	500,966			
Current President's Budget (FY2010 PB)	330,874	385,493	0			
otal Adjustments	-9,233	-1,324	0			
Congressional Program Reductions	0	-1,324	0			
Congressional Rescissions	0	0	0			
otal Congressional Increases	0	0	0			
Cotal Reprogrammings	-3,750	0	0			
BIR/STTR Transfer	-5,483	0	0			
Adjustments to Budget Years	0	0	-500,966			
FY2008 and FY2009 decreases include SE FY2010 decrease is the result of program t		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings.			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings.			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings.			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings.			
Y2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
Y2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			
FY2008 and FY2009 decreases include SE		d MDA repro	ogrammings			

Missile Defense Agency (MDA) Exhibit R-2A RDT&E	Project Jus	tification			ate [ay 2009			
APPROPRIATION/BUDGET ACTIVITY R-1 NOMENCLATURE RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603886C Ballistic Missile Defense System Interceptors								
COST (\$ in Thousands)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
WX13 Ballistic Missile Defense Interceptor Capability Development	317,340	374,343	0					
RDT&E Articles Qty	0	1						
A. Mission Description and Budget Item Justification								

The Kinetic Energy Interceptors (KEI) mission is to develop a mobile, multi-use (boost, ascent, midcourse) kinetic energy intercept capability to enhance the layered defense performance of the Ballistic Missile Defense System (BMDS). KEI's unique mobility and performance combination brings to the BMDS the capability to engage threats in the early, forward portion of the BMDS battle space. The interceptor design concept is compatible with land-mobile and sea-mobile operations and features a high performance booster designed to carry multiple payload types. The KEI common booster will be capable of carrying advanced payloads to identify, seek out, and destroy lethal objects within a threat cluster in the future capability to close the fire control loop during the boost phase enable delivery of these payloads early in the midcourse timeline. KEI's ability to execute its suite of missions is enabled by a flexible fire control design that allows the interceptor to receive data from a diverse suite of ballistic missile defense sensors (land, sea, and space), fuse this information in real time, and execute an effective intercept. By adding a boost phase kinetic energy intercept layer and flexible ascent/midcourse capabilities to future BMDS capabilities, KEI enables the MDA to pace the threat, fill performance gaps, and increase BMDS effectiveness.

Concurrent with the release of the FY10 PB submission, the KEI Program Office will implement a Program Termination Plan.

B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	FY 2011
Termination and Close out	0	173,346	0	
RDT&E Articles (Quantity)	0	0	0	

FY2009 Planned Program:

• The KEI Program Office will implement a Program Termination Plan. This plan will include the identification of program deliverables and/or salvageable technologies that have value to other Government entities. The program office will implement the terminating contract modifications to include termination liability cost activities and resolution of unliquidated obligations. The program office will implement a funding plan for

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

06038860 funding r at may ha ogram. As	MENCLATURE C Ballistic Missile D requirements. The ave an actual or co is appropriate, the or data and drawin FY 2009 162,92	ontingent liability. 7 plan will include th ngs storage, program FY 2010	ptors ill establish a timetable This plan will include the schedule of propose in documentation, and FY 2011 0 0
R-1 NOM 06038860 funding r tat may ha ogram. As rements for 08 161,415 0	C Ballistic Missile D requirements. The ave an actual or co is appropriate, the or data and drawin FY 2009 162,92	e program office wi ontingent liability. 7 plan will include th ngs storage, program FY 2010	ill establish a timetable This plan will include ne schedule of propose m documentation, and FY 2011
$\begin{array}{c} \text{at may ha} \\ \text{ogram. As} \\ \text{rements fc} \\ \hline \hline \\ \hline $	ave an actual or co s appropriate, the or data and drawin FY 2009 162,92	ontingent liability. 7 plan will include th ngs storage, program FY 2010	This plan will include ne schedule of propose m documentation, and FY 2011
161,415 0	162,92		0
0		1	
	cle	1	0
lder vehic	ele		
duct path	finding activities	at Vandenberg Air	Force Base (VAFB)
)8	FY 2009	FY 2010	FY 2011
139,619	22,89		0
0		0	0
	0		

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

	CLABBIL					
				Date		
Missile Defense Agency (MDA) Exhibit R-2A RDT&E l	Project Justifi			May 2009		
APPROPRIATION/BUDGET ACTIVITY	(A C D P D)		IENCLATURE			
RDT&E, DW/04 Advanced Component Development and Prototypes	(ACD&P)	06038860	C Ballistic Missile D	efense System Inte	rceptors	
Performed system engineering, trades, and product development	11	ompletio	n of BMDS Multi	ple Kill Vehicle	(MKV) S	SRR
• Supported Divert Attitude Control System/Kill Vehicle pathfinde	er initiatives					
FY2009 Planned Program:						
Conduct a KEI/MKV SRR						
	FY 2008	3	FY 2009	FY 2010		FY 2011
Fest and Evaluation	112000	3,068	2,94		0	
RDT&E Articles (Quantity)	0			0	0	
Partially deliver the launch operation requirements document for	r FTK-01 to	VAFB				
	FY 2008		FY 2009	FY 2010		FY 2011
stems Engineering and Program Management		13,238	12,23		0	
DT&E Articles (Quantity)		0		0	0	
 FY2008 Accomplishments: Conducted system engineering in support of a Ballistic Missile E payload system requirements review Initiated risk reduction for the CG(X) Modular Launch System 			on system level sy			v and follow-or t R-2A (PE 0603886
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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justifi	ification Date May 2009	
PPROPRIATION/BUDGET ACTIVITY DT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603886C Ballistic Missile Defense System Interceptors	5
Participated in Nimble Titan and Joint Project Optic Windmill Wargames Provided management, leadership, and planning for all activities Provided salaries, travel, and project-wide support, to include security Provided Quality, Safety, and Mission Assurance (QSMA) operations to ens manufacturing, quality, safety, and reliability	sure compliance with Agency requirements for des	ign, test,
Y2009 Planned Program:		
 Provide management, leadership, and planning for all activities Provide salaries, travel, and project-wide support, to include security 		

Missile Defense Agency (MDA) Exhibit R-2A	RDT&F Projec	t Instifica	tion		Date May 20	00						
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Pro	LATURE	e Defense Sy		ceptors								
C. Other Program Funding Summary												
	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost			
PE 0603175C Ballistic Missile Defense Technology	106,437	119,30	8 109,760						-			
PE 0603881C Ballistic Missile Defense Terminal Defense Segment	1,034,478	956,68	6 719,465						-			
PE 0603882C Ballistic Missile Defense Midcourse Defense Segment	2,198,664	1,507,48	1 982,922						-			
PE 0603883C Ballistic Missile Defense Boost Defense Segment	503,475	400,75	1 186,697						-			
PE 0603884C Ballistic Missile Defense Sensors	574,231	777,69	3 636,856						-			
PE 0603888C Ballistic Missile Defense Test and Targets	619,137	919,95	6 966,752						-			
PE 0603890C Ballistic Missile Defense Enabling Programs	416,937	402,77	8 369,145						-			
PE 0603891C Special Programs – MDA	193,157	175,71	2 301,566						-			
PE 0603892C Ballistic Missile Defense Aegis	1,126,337	1,113,65	5 1,690,758						-			
PE 0603893C Space Tracking & Surveillance System	226,499	208,92	3 180,000						-			
PE 0603894C Multiple Kill Vehicle	223,084	283,48	1 0						-			
PE 0603895C BMD System Space Program	16,237	24,68	6 12,549						-			
PE 0603896C BMD C2BMC	439,997	288,28	7 340,014						-			
PE 0603897C BMD Hercules	51,387	55,76	4 48,186						-			
PE 0603898C BMD Joint Warfighter Support	45,400	69,74	3 60,921						-			
PE 0603904C Missile Defense Integration & Operations Center (MDIOC)	77,102	106,04	0 86,949						-			
PE 0603906C Regarding Trench	1,945	2,96	8 6,164						-			
PE 0603907C Sea Based X-Band Radar (SBX)	155,244	146,89	5 174,576						-			
PE 0603908C BMD Europ Intercep Site	0	362,00	7 0						-			
PE 0603909C BMD Europ Midcourse Radar	0	76,53	7 0						-			
PE 0603911C BMD European Capability	0		0 50,504						-			
PE 0603912C BMD European Comm Support	0	27,00	8 0						-			
PE 0603913C Israeli Cooperative	0		0 119,634						-			
PE 0605502C Small Business Innovative Research BMDO	137,409		0 0						-			
PE 0901585C Pentagon Reservation	5,971	19,66	7 19,709						-			
PE 0901598C Management Headquarters – MDA	83,907	81,17	4 57,403						-			
Note: The Ballistic Missile Defense System (BMDS) is an int	tegrated, inter	roperabl	e, global defe	ense syster	m. The pro	ograms the	at compris	se the BM	DS			

Note: The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs that comprise the BMDS are interdependent.

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

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Missile Defense Agency (MDA) Exhibit R-2A RDT&E Project Justifi	cation	Date May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P)	R-1 NOMENCLATURE 0603886C Ballistic Missile I	Defense System Interceptors
D. Acquisition Strategy		
The Kinetic Energy Interceptors (KEI) development and test acquisition strategy capabilities for strategically deployable land-mobile and sea-mobile platforms. The selected competitively at the start of development. The revised acquisition strate BMDS elements that deliver each payload for integration into the KEI element.	The KEI element is being d	developed under a single prime contractor
The FY2005 through FY2009 development verification test results mitigate criti performance, cost, and programmatic knowledge to support the FY2009 Knowledge to ritical manufacturing processes as an integral part of the design process.	1 0 1	
The payoff for these up-front program investments in systems engineering, full s development is reduced redesign and retest, fewer test failures, and lowered mar manufacturing readiness levels and software readiness levels as maturity and risk flight hardware, and having a production off-ramp.	ufacturing cost. The strate	egy will utilize engineering and

APPROPRIATION/BUDGET	ACTIVITY				R-1 NO	R-1 NOMENCLATURE						
RDT&E, DW/04 Advanced	l Compone	ent Development a	and Prototy	pes (ACD&P	9) 0603886	C Ballistic Mi	ssile Defense	e System Inter	ceptors			
I. Product Development	Cost (\$	in Thousands)										
	Contract Method	Performing Activity &	Total PYs	FY 2009	FY 2009 Award/ Oblg	FY 2010	FY 2010 Award/ Oblg	FY 2011	FY 2011 Award/ Oblg	Total		
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date	Cost		
Interceptor												
Interceptor	C/CPAF	Northrop Grumman - VA, AL, CA, PA/ Raytheon & Orbital-AZ, ATK-MD, UT	161,415	162,925	1/2Q	0				324,340		
Element Engineering												
Contractor Element Engineering	C/CPAF	Northrop Grumman - VA, AL, CA, PA/ Raytheon & Orbital-AZ, ATK-MD, UT	115,214							138,108		
Contractor KEI BMDS KV Engineering and Development	C/CPFF	Northrop Grumman - VA, AL; Raytheon - AZ	22,850	22,894	1/2Q	0				22,850		
Systems Engineering and Program Management												
Government Furnished Equipment	Various	Missile Defense Agency, Huntsville, AL	0	0	N/A	0				57		
CG(X) Sea-Based Modular Launcher	C/CPAF	Northrop Grumman - Fairfax, VA; Sunnyvale, CA	1,555									
Subtotal Product Development			301,034	57	3Q	0		1		486,763		

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

II. Support Costs Cost	$t(3 \ln 1 \ln 0)$	Jusands)			FY 2009		FY 2010		FY 2011	
	Contract	Performing	Total		Award/		Award/		Award/	
	Method	Activity &	PYs	FY 2009	Oblg	FY 2010	Oblg	FY 2011	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date	Cost
Systems Engineering and Program Management										
SETA	C/FFP	MEI, Huntsville, AL	7,474	6,390	1/3Q	0				13,864
		SMDC/Tybrin-AL, Navy ICP-PA/								
Other Government Agencies	MIPR	DCMA - Fairfax, VA	802	505	2/3Q	0				1,307
Security Support	MIPR	DISA, Colorado Springs, CO	126	17	2/4Q	0				143
		Various/								
BMDS Interfaces, BMDS SIM	MIPR	JRDC/MDA/System Engineering	1,353	2,661	2/3Q	0				4,014
Subtotal Support Costs		Lingineering	9,755	9,573	215Q	0				19,328
			,	,						,

Missile	Defense Ag	ency (MDA) Exhil	oit R-3 RDT&	E Project Cos	st Analysis		Date May	2009		
APPROPRIATION/BUDGET	ACTIVITY				R-1 NO	MENCLATUR	Έ			
RDT&E, DW/04 Advanced	l Compone	ent Development	and Prototy	pes (ACD&I	P) 0603886	C Ballistic Mi	issile Defense	System Inter	ceptors	
III. Test and Evaluation	Cost (\$	in Thousands)								
					FY 2009		FY 2010		FY 2011	
	Contract	Performing	Total		Award/		Award/		Award/	
	Method	Activity &	PYs	FY 2009	Oblg	FY 2010	Oblg	FY 2011	Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date	Cost
Test and Evaluation										
NEPA	MIPR	SMDC, Huntsville, AL	123	100	2/3Q	0				223
Range Support	MIPR	VAFB, CA	872	1,251	1/2Q	0				2,123
TEDAC and TM Ops for FTK- 01	MIPR	SMDC/Gray Research, Huntsville, AL	73	140	2/3Q	0				213
		AMCOM/Craft Tech/Calspan, Pipersville, PA/								
Stage 1 & 2 Separation Analysis	C/FFP	Buffalo, NY	1,000	1,454	2/3Q	0				2,454
NASA Wallops - Flight Experiment Support	MIPR	Wallops Flight Facility, VA	1,000	0	N/A	0				1,000
Subtotal Test and Evaluation			3,068	2,945		0				6,013

Remarks

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

Missile	Defense Ag	ency (MDA) Exhib	oit R-3 RDT&	E Project Cost	Analysis		Date May 2	2009		
APPROPRIATION/BUDGET RDT&E, DW/04 Advanced		ant Development	and Prototy			MENCLATUR C Ballistic Mi		System Inter	aantara	
KD1&E, Dw/04 Auvalice		ent Development	and Frotoly	pes (ACD&F)	0003880	C Bailistic MI	ssile Delense	System Inter	ceptors	
V. Management Service	es Cost (\$ in Thousands)							
	Contract Method	Performing Activity &	Total PYs	FY 2009	FY 2009 Award/ Oblg	FY 2010	FY 2010 Award/ Oblg	FY 2011	FY 2011 Award/ Oblg	Total
Cost Categories:	& Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date	Cost
Systems Engineering and Program Management										
Civilian Salaries and Travel		Missile Defense Agency, Huntsville, AL	1,895	1,769	N/A	0	N/A			3,664
Engineering Program Support	C/FFP	COLSA Corp, Huntsville, AL/ AMRDEC, Huntsville, AL	1,588	834	2/3Q	0				2,422
Fermination and Close out			-,		(_,
Fermination and Close out	Various	Missile Defense Agency, Huntsville, AL		173,346	N/A	0	N/A			173,346
Subtotal Management Services			3,483	175,949		0				179,432
Remarks										
Project Total Cost		T T	317,340	374,343		0				691,683

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

Missile D		Ager	ncy ((MD	A) Ex	xhib	it R	-4 S	chec	lule	e Pro	ofile	1									oate /Iay	20	09								
APPROPRIATION/BUDGET ACTIVIT RDT&E, DW/04 Advanced Compo		Deve	lopi	men	t and	l Pr	oto	type	es (A	ACI	D&I	P)		k-1 N 603							Def	ens	e Sy	sten	n In	terc	epto	ors				
Fiscal Year		200	8		20	009			20	10			20	11			20)12			2	013			2	014			20)15		
	1	2	3	4	1 2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Kinetic Energy Interceptors Flight Test Ev	ents			_				-		_			-							_				_								
Booster Flight Test One (FTK-01)							☆																									
Interceptor				_				_												_												
Stage 2 Rocket Motor Static Fire One	Δ																															
Stage 2 Rocket Motor Static Fire Two				Δ																												
Stage 1 Rocket Motor Static Fire Three					▲																											
Stage 1 Rocket Motor Static Fire Four						Δ																										
Stage 2 Rocket Motor Static Fire Three						Δ																										
Stage 2 Rocket Motor Static Fire Four						Δ																										
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	▲		Compl	lete A	ctivity						Δ	Δ	Plan	ned A	ctivit	y]											

Project: WX13 Ballistic Missile Defense Interceptor Capability Development

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R-1 NOMENCLATURE 603886C Ballistic Missile Defense System Interceptors FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 FY 2015 4Q	DT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603886C Ballistic Missile Defense System Interceptors hedule Profile FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 FY 2015 netic Energy Interceptors Flight Test Events	RDT&E, DW/04 Advanced Component Development and Prototypes (ACD&P) 0603886C Ballistic Missile Defense System Interceptors Schedule Profile FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 Schedule Profile FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 Schedule Profile FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 Kinetic Energy Interceptors Flight Test Events 4Q 1 1 1 1 Booster Flight Test One (FTK-01) 4Q 1 1 1 1 1 Interceptor 4Q 1 </th <th></th> <th></th> <th>y 2009</th> <th></th> <th></th> <th>dule Detail</th> <th>hibit R-4A Scho</th> <th>gency (MDA) Ex</th> <th>Missile Defense Ag</th>			y 2009			dule Detail	hibit R-4A Scho	gency (MDA) Ex	Missile Defense Ag
4Q	netic Energy Interceptors Flight Test EventsImage of the second seco	Kinetic Energy Interceptors Flight Test EventsImage: Constraint of the sector of the sect		ceptors	se System Inter			(CD&P)	Prototypes (A	evelopment and	
4Q 1 1 1 4Q 1 1 1 1 1 1 1 1Q 1 1 1 3Q 1 1 1	netic Energy Interceptors Flight Test EventsImage of the second seco	Kinetic Energy Interceptors Flight Test EventsImage: Constant of the second	EV 2015	FV 2014	EV 2013	FV 2012	EV 2011	EV 2010	EV 2009	EV 2008	pedule Profile
1Q 10<	ooster Flight Test One (FTK-01)4QImage Constraints4QImage ConstraintsImage Constraints<	Booster Flight Test One (FTK-01)4QImage: Constraint of the state of the sta	11 2013	11 2014	11 2015	11 2012	11 2011	11 2010	112009	11 2000	
3Q	tage 2 Rocket Motor Static Fire One1QIItage 2 Rocket Motor Static Fire Two4QIItage 1 Rocket Motor Static Fire Three1QIItage 1 Rocket Motor Static Fire Four3QIItage 2 Rocket Motor Static Fire Three3QII	Stage 2 Rocket Motor Static Fire One1QImage: Constraint of the state of the							4Q		
3Q	tage 2 Rocket Motor Static Fire Two4QImage: Construction of the state of th	Stage 2 Rocket Motor Static Fire Two4QImage: Constraint of the state of the									erceptor
3Q	tage 1 Rocket Motor Static Fire Three 1Q Image: I Rocket Motor Static Fire Four Image: I Rocket Motor Static Fire Four 3Q Image: I Rocket Motor Static Fire Three Image: I Rocket Motor Static Fire Three 3Q Image: I Rocket Motor Static Fire Three Image: I Rocket Motor St	Stage 1 Rocket Motor Static Fire Three 1Q Image: Constraint of the state of the								1Q	age 2 Rocket Motor Static Fire One
3Q	tage 1 Rocket Motor Static Fire Four 3Q tage 2 Rocket Motor Static Fire Three 3Q	Stage 1 Rocket Motor Static Fire Four 3Q Image: Constraint of the state of the								4Q	age 2 Rocket Motor Static Fire Two
3Q 3Q	tage 2 Rocket Motor Static Fire Three 3Q	Stage 2 Rocket Motor Static Fire Three 3Q							1Q	1	age 1 Rocket Motor Static Fire Three
									3Q		age 1 Rocket Motor Static Fire Four
3Q 3Q	tage 2 Rocket Motor Static Fire Four 3Q	Stage 2 Rocket Motor Static Fire Four 3Q									-
									3Q		age 2 Rocket Motor Static Fire Four

			MENCLATU C Ballistic 1 FY 2010 0		nse System FY 2012	Interceptors	5 FY 2014	FY 201:
COST (\$ in Thousands) FY CX40 Program-Wide Support	7 2008 13,534	FY 2009 11,150	FY 2010		•	•		FY 201
ZX40 Program-Wide Support	13,534	11,150		FY 2011	FY 2012	FY 2013	FY 2014	FY 201
			0					
RDT&E Articles Qty	0	0						
		0	0					
and training, office and equipment leases, utilities and communications, funding for charges on canceled appropriations in accordance with Publi imited number of foreign contracts. 3. Accomplishments/Planned Program								
5. Accompnishments/Planned Program	FY 20	008	FY 2	009	FY 2	2010	FY2	2011
Civilian Salaries and Support		13,534		11,150		0		
RDT&E Articles (Quantity)		0		0		0		

PDT&F Projec	t Instifica	tion		Date May 20	00			
	Ι	R-1 NOMENCI		· · ·		ceptors		
FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total Cost
106,437	119,30	8 109,760						-
1,034,478	956,68	6 719,465						-
2,198,664	1,507,48	1 982,922						-
503,475	400,75	1 186,697						-
574,231	777,69	3 636,856						-
619,137	919,95	6 966,752						-
416,937	402,77	8 369,145						-
193,157	175,71	2 301,566						-
1,126,337	1,113,65	5 1,690,758						-
226,499	208,92	3 180,000						-
223,084	283,48	1 0						-
16,237	24,68	6 12,549						-
439,997	288,28	7 340,014						-
51,387	55,76	4 48,186						-
45,400	69,74	3 60,921						-
77,102	106,04	0 86,949						-
1,945	2,96	8 6,164						-
155,244	146,89	5 174,576						-
0	362,00	7 0						-
0	76,53	7 0						-
0		0 50,504						-
0	27,00	8 0						-
0		0 119,634						-
137,409		0 0						-
5,971	19,66	7 19,709						-
83,907	81,17	4 57,403						-
	FY 2008 106,437 1,034,478 2,198,664 503,475 574,231 619,137 416,937 193,157 1,126,337 226,499 223,084 16,237 439,997 51,387 45,400 77,102 1,945 155,244 0 0 0 0 0 0 137,409 5,971 83,907	FY 2008 FY 2009 106,437 119,30 1,034,478 956,68 2,198,664 1,507,48 503,475 400,75 574,231 777,69 619,137 919,95 416,937 402,77 193,157 175,71 1,126,337 1,113,65 226,499 208,92 223,084 283,48 16,237 24,68 439,997 288,28 51,387 55,76 45,400 69,74 77,102 106,04 1,945 2,96 155,244 146,89 0 362,00 0 76,53 0 27,00 0 27,00 0 27,00 0 37,409 137,409 5,971 19,66 83,907	dot ypes (ACD&P)G603886C BalliFY 2008FY 2009FY 2010106,437119,308109,7601,034,478956,686719,4652,198,6641,507,481982,922503,475400,751186,697574,231777,693636,856619,137919,956966,752416,937402,778369,145193,157175,712301,5661,126,3371,113,6551,690,758226,499208,923180,000223,084283,481016,23724,68612,549439,997288,287340,01451,38755,76448,18645,40069,74360,92177,102106,04086,9491,9452,9686,164155,244146,895174,5760362,00700050,50400000119,634137,4090083,90781,17457,403	Protypes (ACD&P) R-1 NOMENCLATURE 0603886C Ballistic Missile FY 2008 FY 2009 FY 2010 FY 2011 106,437 119,308 109,760 100,437 1,034,478 956,686 719,465 100,437 2,198,664 1,507,481 982,922 100,437 503,475 400,751 186,697 100,437 574,231 777,693 636,856 100,145 619,137 919,956 966,752 100,156 193,157 175,712 301,566 11,126,337 1,126,337 1,113,655 1,690,758 100,000 222,084 283,481 0 100,000 223,084 283,481 0 100,014 51,387 55,764 48,186 100,014 51,387 55,764 48,186 10,921 1,945 2,968 6,164 11,945 1,945 2,968 6,164 11,91,91 0 362,007 0 10,01 0 0 <	RDT&E Project Justification Ray 20 Active (ACD&P) R-1 NOMENCLATURE 0603886C Ballistic Missile Defense Sy FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 106,437 119,308 109,760	RDT&E Project Justification May 2009 Rotypes (ACD&P) R-1 NOMENCLATURE 603886C Ballistic Missile Defense System Inter FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 106,437 119,308 109,760	RDT&E Project Justification May 2009 Rtotypes (ACD&P) R-1 NOMENCLATURE 063886C Ballistic Missile Defense System Interceptors FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 106,437 119,308 109,760 1,034,478 956,686 719,465 2,198,664 1,507,481 982,922 503,475 400,751 186,697 619,137 919,956 966,752 11,126,337 1,13,655 1,690,758 226,499 208,923 180,000 439,997 288,287 340,014 11,126,337 1,517,44 48,186	RDT&E Project Justification May 2009 R-1 NOMENCLATURE 603886C Ballistic Missile Defense System Interceptors FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 FY 2014 FY 2015 106,437 119,308 109,760 - - - - 1034,478 956,686 719,465 - - - - 503,475 400,751 186,697 - - - - 574,231 777,693 636,856 - - - - 416,937 402,778 369,145 - - - - 193,157 175,712 301,566 - - - - 1226,499 208,923 180,000 - - - - 1126,337 1,113,655 1,690,758 - - - - 1439,997 288,287 340,014 - - - - 1439,4997 288,287 340,014

Note: .The Ballistic Missile Defense System (BMDS) is an integrated, interoperable, global defense system. The programs which comprise the BMDS are interdependent.