PE NUMBER: 0208060F

PE TITLE: Theater Missile Defenses

	RDT&E BUDGET ITEM	JUSTI	FICATI	ON SH	EET (R	-2 Exhi	bit)		DATE	June 2001		
•	PE NUMBER AND TITLE 07 - Operational System Development 0208060F Theater Missile Defenses											
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
	Total Program Element (PE) Cost	27,987	19,642	0	0	0	0	0	0	Continuing	TBD	
4478	Command, Control, Communications, Computers, and Intelligence Enhancements	19,834	19,642	0	0	0	0	0	0	Continuing	TBD	
4479	Attack Operations Concept Development	8,153	0	0	0	0	0	0	0	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

FY03=07 budget numbers do not reflect the DoD strategic review results

The following net transactions are not reflected in the FY01 program total:

BTR = + \$ 1,481 KSBIR = - \$ 648 K

These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) A. Mission Description

Air Force Theater Missile Defense/Time Critical Target (TMD/TCT) effort is focused in two areas: Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I) enhancements and improvements to existing Attack Operations systems and procedures. AF TMD concentrates on defining improvements to existing operational capabilities, developing and evaluating prototypes, demonstrating as well as simulating modifications through operational concept demonstrations, and coordinating the transition of these capabilities to operational systems. BM/C4I projects [including, for example, Dynamic Battle Management, Attack Operations Decision Aid (AODA), Automatic Application of Intelligence Preparation of Battlespace (A2IPB) and Joint TADIL-J Range Extension (JRE)] reduce timelines required to negate the theater missile threat by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks for Offensive Counterair (Attack Operations). Attack Operations focuses on improving the ability to locate, identify, target and destroy theater missiles and supporting infrastructure, including theater missile threats in production, deployment, prior to and during launch, as well as soon after launch before critical mobile targets are able to egress to hide locations. The foundation for Attack Operations is improved C4I, advanced sensors, target identification capabilities, CONOPS, training, tactics and procedures, and requirements development for offensive counterair and integration with defensive systems.

Page 1 of 12 Pages

Exhibit R-2 (PE 0208060F)

	RDT&E BUDGET ITEM JUSTIFIC	DATE June	2001		
	GET ACTIVITY - Operational System Development	PE NUMBER AND TITLE 0208060F Theater N	Missile Defens	ses	
(U)	B. Budget Activity Justification This program is in Budget Activity 7 because its projects are upg	grades to existing operational systems.			
(U)	C. Program Change Summary (\$ in Thousands)				
(U) (U)	Previous President's Budget (FY 2001 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions	FY 2000 25,904 26,129 -83 -746 4,089 -102	<u>FY 2001</u> 19,824 19,824	FY 2002	<u>Total Cost</u> TBD
(U) (U)	Adjustments to Budget Years Since FY 2001 PBR Current Budget Submit/FY 2002 PBR	-1,300 27,987	19,642		TBD
(U)	Significant Program Changes: PE 28060F was reduced across the FYDP to provide funding for	r higher AF priority programs.			
		Page 2 of 12 Pages		Exhibit R-2	(PE 0208060F)

	RDT&E BUDGET ITEM	JUSTIF	ICATIO	N SHE	ET (R-	2A Exh	ibit)		DATE	June 2001		
	ET ACTIVITY Operational System Development		PE NUMBER AND TITLE 0208060F Theater Missile Defenses								PROJECT 4478	
	COST (\$ in Thousands)		FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4478	Command, Control, Communications, Computers, and Intelligence Enhancements	19,834	19,642	0	0	0	0	0	0	Continuing	TBD	

Theater Missile Defense pre-EMD efforts in PE 28060F transitioning into EMD in PE 27410.

FY03-07 numbers do not reflect the DoD strategy review results.

(U) A. Mission Description

Battle Management, Command, Control, Communications, Computers, and Intelligence (BMC4I) enhancements are needed to reduce timelines required to negate Theater Missiles and Time Critical Targets (TCTs) by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks for Offensive Counterair (Attack Operations) against theater missile and time critical targets. The Combat Air Force (CAF) Concept of Operations (CONOPS) for Command and Control (C2) Against Time Critical Targets and Air Superiority Mission Area Plan (MAP) provide the foundation. The BMC4I program encompasses:

- 1) Dynamic Battle Management (DBM), the CAF vision for providing flexible, centralized C2 throughout conflict spectrum to meet Joint Vision 2010 objectives. Allows the Joint Force Air Component Commander (JFACC) to tailor decentralized execution to best meet the Rule of Engagement (ROE) and span of control requirements enabling prosecution of any theater missile target and TCTs. Effort will identify technical capabilities and migration path required to support DBM environment consisting of wide area connectivity, decision support tools, and shared information.
- 2) Automated Planning Tools / Decision Aids which prototype and demonstrate advanced decision aid capabilities to upgrade the battle management tools and infrastructure to better execute the Theater Missile Defense (TMD) mission. Examples include the integration of the Time Critical Target Aid (TCTA) and Joint Defensive Planner (JDP) into Theater Battle Management Core Systems (TBMCS)/ Global Command and Control System (GCCS) architecture as well as the development and migration of the Attack Operations Decision Aid (AODA) into Theater Air Control System (TACS) platforms.
- 3) Intelligence Preparation Of Battlespace (IPB) which enables the Commander and supporting staff to visualize the full spectrum of adversary capabilities and course of actions (COAs) across all dimensions of the battlespace. Examples include the revision of the methodology for the IPB process as it supports TMD; development of an information architecture populated with linked digital products; generation of training material for use in Air Force schoolhouse and field IPB training; and development of a software Automated Assistance with IPB (A2IPB) tool for TBMCS/GCCS to assist the intelligence analyst at a Joint Intelligence Center (JIC), and the Intel/Ops Planner at an Air Operations Center (AOC).

Project 4478 Page 3 of 12 Pages Exhibit R-2A (PE 0208060F)

	RD ⁻	DATE June 2001		
	GET ACTIVITY - Operational	System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	PROJECT 4478
(U)	4) Data Link C Information Diss		ce platforms to better utilize existing communications syst on and JTIDS gateways to extend range beyond line of sigl heater.	
(U) (U)	FY 2000 (\$ in Th \$5,338		lities into TMD/TCT cell. Develop upgraded capability for	or Air Operations Center (AOC) and
(U)	\$5,893	Continue to develop IPB evolutionary prototypes (EPs) for TBMCS; demonstrate improved automated proceed access. Complete Area Limitation module development a	• • •
(U)	\$5,610	Continue AODA spiral 2 prototype development; o	ontinue to develop Joint Target Execution (JTE) and cond D/TCT Cell Testbed to improve integration into operation instrations.	
(U)	\$2,993	1	s that compress Theater Missile engagement timelines and nified Command, Commander in Chief (CINC) experime	0 1
(U)	\$19,834	Total		
(U)	FY 2001 (\$ in Th			
(U)	\$6,165	Automated Application of Intelligence Preparation decision aids and IPB tools into an integrated set of	Critical Targeting (TMD/TCT) decision aid prototypes for of the Battlespace (A2IPB) and Joint Terrain Analysis To applications and demonstrate improved automated proceedified Command, Commander in Chief (CINC) experiments and design for future production.	polkit (JTAT). Combine prototype dures and IPB system capabilities in
(U)	\$5,292	(TCTA) prototypes in relation to Joint Services W operational systems. Evaluate additional programs	Spiral 2. Continue to develop Joint Target Execution (JT orkstation (JSWS) development effort. Maintain TCT Test with TMD/TCT applicability for integration and design are rements Document (ORD). Develop a TMD/TCT continguature production.	stbed to improve integration into ctivities of future system as
(U)	\$1,052		s and architecture issues that compress Theater Missile eng	gagement timelines and demonstrate
Р	roject 4478	P	age 4 of 12 Pages	Exhibit R-2A (PE 0208060F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

June 2001

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

07 - Operational System Development

0208060F Theater Missile Defenses

4478

(U) A. Mission Description Continued

(U) FY 2001 (\$ in Thousands) Continued

(U) \$4,487 Conduct BMC4I and Attack Operations Operational Concept Demonstrations

(U) \$2,646 Conduct Development of prototype Joint Surveillance Target Attack Radar System (JSTARS) Automatic Target Recognition (ATR) hardware

and software for multisensor application in the TCTA.

(U) \$19,642 Total

The following net transactions are not reflected in the FY01 program total:

BTR = + \$ 1,481 K SBIR = - \$ 648 K

These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) FY 2002 (\$ in Thousands)

(U) \$0 No Activity

(U) \$0 Total

(U) B. Project Change Summary

- FY2001 budget is inclusive of BMC4I initiatives and Attack Operations. The FY01-05 budget is reduced to reflect the impact due to budget constraints and funding AF higher priorities.

(U) C. Other Program Funding Summary (\$ in Thousands)

		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
(U)	AF RDT&E										
(U)	Other APPN										
(U)	RDT&E, BMDO PMA	4,000	4,000	200	200	200	200	200	200		TBD

F3261, BM/C4I

Funding provided by the Ballistic Missile Defense Office for BMC4I interoperability evaluations and prototype development.

Project 4478 Page 5 of 12 Pages Exhibit R-2A (PE 0208060F)

DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit) June 2001 PE NUMBER AND TITLE BUDGET ACTIVITY **PROJECT** 0208060F Theater Missile Defenses 07 - Operational System Development 4478 (U) D. Acquisition Strategy HQ Electronic Systems Center (ESC) provides program management for the concept exploration of C4I enhancements. Prototypes and analysis of improvements to existing C4I assets will complement the Attack Operations effort with combined participation in Operational Concept Demonstrations. These Attack Operations and C4I analyses and demonstrations are specifically targeted against operational deficiencies identified in the TMD Mission Area Plan (MAP), are traceable to the AF and the Joint Requirements Oversight Council (JROC) Mission Need Statement (MNS) and are consistent with the Air Force and Joint TMD Concept of Operations (CONOPS) in accordance with Joint Doctrine. Integration of TMD requirements and fielding of proposed material solutions will continue beyond concept exploration in the appropriate program element for a particular system. Existing contracts will be used for those systems where engineering change proposals are appropriate. Systems Engineering and Technical Analysis (SETA) contracts will be used to support the requirements definition phase of TMD improvements. In those areas where new material solutions are necessary to correct a deficiency, the source selection process will be followed. (U) E. Schedule Profile 4 Establish BMC4I prototype development plan and schedule. Annual X review JEFX demonstrations X X (U)(U) Demonstrate automated IPB procedures and system capabilities in Ops X X Concept (U) CINC experiments and Joint Exercises. X X (U) Evaluate use of C2 planning/decision aids. Annual Review. X X Continue to explore JTIDS/Link-16 Integration/Improvements. Annual X X Rev * - Completed X- Planned Start Date Project 4478 Page 6 of 12 Pages Exhibit R-2A (PE 0208060F)

		ROJECT C	OSTBI	REAKDO	WN (R-3)			June 200	1
n Developme	ent			er and title 30F Theate	er Missile I	Defenses			PROJECT 4478
yn (\$ in Thousar	nds)								
					<u>FY 2</u>		FY 200	<u>)1</u>	FY 20
ent (DBM)					,	338			
the Battlespace						893	6,16		
Planning Tools						610	5,29		
& Beyond LOS					2,	993	1,05		
nstrations and Cl	NC Exercises						4,48		
emonstration							2,64		
					19,	834	19,64	2	
tory and Planni	ng Information	n (\$ in Thousand	<u>ls)</u>						
<u>s:</u>									
Contract									
Method/Type	Award or	Performing	Project						
or Funding	Obligation	<u>Activity</u>	Office	Total Prior	Budget	Budget	Budget	Budget to	<u>Tota</u>
<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	to FY 2000	FY 2000	FY 2001	FY 2002	Complete	<u>Progra</u>
<u>nizations</u>									
CPFF	Oct 97	N/A	N/A	2,879	2,490	2,000		Continuing	TB
T&M	Dec 97	N/A	N/A	2,339	0	0			2,33
T&M	Dec 97	N/A	N/A	2,415	0	0			2,41
T&M	May 96	N/A	N/A	3,160	2,318	2,932		Continuing	TB
T&M	May 96	N/A	N/A	1,534	370	1,100		Continuing	TB
T&M	Oct 97	N/A	N/A	2,119	405	325		Continuing	TB
T&M	Mar 96	N/A	N/A	1,945	3,821	3,259		Continuing	TB
MIPR	June 99	N/A	N/A		2,356	1,635			3,99
TBD	Nov 99	N/A	N/A		2,186			Continuing	ТВ
MIPR	Oct 99	N/A	N/A			1,125		Continuing	TB
	MIPR	MIPR Oct 99			MIPR Oct 99 N/A N/A Page 7 of 12 Pages				

Non-FFRDC (ESC) N/A N/A 1,031 875 650 Continuing T Non-FFRDC (AC2ISRC) N/A N/A N/A 540 525 525 Continuing T Non-FFRDC (AF/XORT) N/A N/A 500 955 941 Continuing T Test and Evaluation Organizations C2TIG/AFTED 182 2,180 4,165 Continuing T Subtotals Total Prior Budget Budget Budget Budget to Tc Subtotal Product Development 16,391 13,946 12,376 TBD T Subtotal Support and Management 4,571 3,708 3,101 TBD T Subtotal Test and Evaluation 182 2,180 4,165 TBD T	RDT&E PROGRAM ELEMENT/	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								
Support and Management Organizations FFRDC					er Missile	Defenses				
	Support and Management Organizations FFRDC Non-FFRDC (ESC) Non-FFRDC (AC2ISRC) Non-FFRDC (AF/XORT) Test and Evaluation Organizations C2TIG/AFTED Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	N/A N/A	N/A N/A	1,031 540 500 182 <u>Total Prior</u> to FY 2000 16,391 4,571 182	875 525 955 2,180 <u>Budget</u> <u>FY 2000</u> 13,946 3,708 2,180	650 525 941 4,165 <u>Budget</u> <u>FY 2001</u> 12,376 3,101 4,165		Continuing Continuing Continuing Continuing Budget to Complete TBD TBD TBD	TB. TB. TB. Tota Progra TB. TB. TB.	

	RDT&E BUDGET ITEM	JUSTIF	ICATIO	ON SHE	ET (R-	2A Exh	ibit)		DATE	June	2001
	GET ACTIVITY Operational System Development				UMBER AND 8060F		Missile [Defense	S		PROJECT 4479
	COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4479	Attack Operations Concept Development	8,153	0	0	0	0	0	0	0	0	TBD
(U)	A. Mission Description Improvements in Attack Operations are based on In addition to the enhancements to C4I, the Attack development for TMD offensive counter-air and (ATC/R) and moving target indicator/track (MTI analyzed using constructive analysis and evaluate connectivity upgrades critical to their optimum enfollow on acquisition decisions involving P3I upgrades.	ck Operation optimized in the optimized	ns Project f ntegration v s to Joint S Technology against the	ocuses on a with defensi TARS, F-1/Operationa ater missile	dvanced serve systems. 5E and poted Concept I targets.	nsor and tar Specific to entially the Demonstrati fectiveness	get identificechnologies U-2, F-16 at ions and CI and afforda	cation capa such as au and Unman NC Experir ability parar	bilities, CO tomatic targ ned Air Vel nents along neters defir	NOPS and a get cueing/re hicles (UAV with commend will be u	requirements ecognition (s) are to be and and control used in support of
(U) (U) (U)	FY 2000 (\$ in Thousands) \$2,145 Conducted Attack Operati \$1,872 Continued analysis of arch attack operations capabilit development of user's ope	itectures wi	ith weapon isor to shoo	system and oter that wer	BMC4I up	ated on pro	-			•	-
(U) (U) (U)	\$2,090 Conducted demonstration \$2,046 Conducted development o \$8,153 Total	of JSTARS	ATR with	expanded ta	arget set of	time-critica	_	orm lab dei	monstration	of prototyp	ed capabilities.
(U) (U) (U)	FY 2001 (\$ in Thousands) \$0 FY01 Attack Operations 1 \$0 Total	orograms in	cluded in B	PAC 67447	79.						
(U) (U) (U)	FY 2002 (\$ in Thousands) \$0 No Activity \$0 Total										
(U)	B. Project Change Summary FY01 funding consolidated in BPAC 674478										
Р	roject 4479			Page 9 of 1	2 Pages				Exh	ibit R-2A (I	PE 0208060F)

	RDT&E BU	DGET IT	EM JUS	TIFICAT	ION SH	EET (R-2	2A Exhil	oit)	D	ATE Ju	ne 2001	
	get activity - Operational System I	Developmo	ent			NUMBER AND 208060F 7		fenses			PROJECT 1479	
	C. Other Program Funding AF RDT&E Other APPN	Summary (\$) FY 2000 Actual	in Thousand FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	<u>Cost to</u> <u>Comple</u>		Total Cost
(U)	D. Acquisition Strategy HQ Aeronautical Systems Coconducts lab demonstrations we measures of effectiveness for	vith Wright La	bs and suppo	orts Concept	of Operation							
(U)	E. Schedule Profile					<u>FY 2000</u> 2 3	4 1	<u>FY 2</u> 2	001 3 4	1	<u>FY 2002</u> 2 3	
(U) (U)	ATC/R Demos (F-15E/Survei Ops Concept Demonstrations * - Completed X - Planned Start Date	llance)				*			X			
F	Project 4479				Page 10 of	f 12 Pages				Exhibit R-2	2A (PE 02	08060F)

RDT&E	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									
BUDGET ACTIVITY 07 - Operational S	ystem Developm	ent			er and title	er Missile	Defenses			PROJECT 4479
(U) A. Project Cost Br	eakdown (\$ in Thousa	nds)								
(U) Operational Conce(U) Sensor Prototypes a(U) F-15E ATC/R Den	R Demonstration/Impro ot Demonstration (RS99 and Attack Ops Demons constrations	and EFX99)				2 2 1 2	2000 ,046 ,145 ,872 ,090	())))	FY 2002
(U) Total						8	,153	(0	
(U) <u>B. Budget Acquisi</u>	tion History and Plann	ing Information	n (\$ in Thousand	<u>ls</u>)						
(U) Performing Organ	izations:									
Contractor or	Contract									
Government	Method/Typ		Performing	<u>Project</u>						
<u>Performing</u>	or Funding	Obligation	<u>Activity</u>	<u>Office</u>	Total Prior	<u>Budget</u>	<u>Budget</u>	Budget	Budget to	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	to FY 2000	FY 2000	FY 2001	FY 2002	Complete	<u>Program</u>
Product Developme										
For Profit Contracto	or TBD	Nov 99	N/A	N/A		1,572				1,572
(Analyses)										
Sandia National La		Oct 99	N/A	N/A		2,090				2,090
Raytheon (F-15E R	· · · · · · · · · · · · · · · · · · ·	Mar 95	N/A	N/A		1,564				1,564
Lockheed (Tgt Pod		Nov 99	N/A	N/A		891				891
- 11	ement Organizations									
FFRDC			N/A	N/A					Continuing	TBD
Non-FFRDC			N/A	N/A					Continuing	
HQ ASC			N/A	N/A		355			Continuing	TBD
Test and Evaluation									~	
C2ITG/AFTED	MIPR	Mar 95	N/A	N/A		1,581			Continuing	
AFSAA	MIPR	Feb 95	N/A	N/A		100			0	0
Eglin-46 Tst Wg	PO	May 94	N/A	N/A		100			Continuing	TBD
Project 4470			D	11 of 12 D	ngas			Evhik	+ D 2 /DE /)2080E0E\
Project 4479			Page	e 11 of 12 Pa	iges			Exhib	it R-3 (PE ()208060F

RDT&E PROGRAM ELEMENT/PI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0208060F Theat	er Missile	Defenses			PROJECT 1479			
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 2000	Budget FY 2000 6,117 355 1,681 8,153	Budget FY 2001	Budget FY 2002	Budget to Complete TBD TBD TBD TBD	Total Program 6,117 TBD TBD TBD TBD			
Project 4479	Page 12 of 12 Pages			Exhib	it R-3 (PE 02	208060F)			