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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February, 1995	
BUDGET ACTIVITY 7 - Operational System Development			PE NUMBER AND TITLE 0208060F Theater Missile Defense							
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16100	26434	25102	22986	46930	47851	49251	50893	0	0
4478 Command, Control, Communications, Computers, and Intelligence Enhancements *	7300	12350	12590	13690	27600	28170	28811	29458	TBD	TBD
4479 Attack Operations Concept Development *	8,800	14,084	12,512	9,296	19,330	19,681	20,440	21,435	TBD	TBD
<p>(U) A. Mission Description and Budget Item Justification Air Force Theater Missile Defense is focused in three areas: Command, Control, Communications, Computers and Intelligence enhancements, Attack Operations concept development, and development of the Airborne Laser Demonstrator. This program element is concerned with C4I and Attack Operations. Enhancements to key C4I assets is closely related to improvement in Attack Operations. C4I improvements also contribute greatly to the effectiveness of the TMD systems of other Services (Patriot, THAAD, etc.), as well as provide greater efficiency for all the CINCs' forces. C4I includes connectivity, interoperable data links, battle management, command and control timelines, cuing schemes, decision aids, mission planning tools and integration of assets within the Air Force and among the Services. Attack Operations focuses on improving the ability to locate, identify, target and destroy theater missiles and supporting infrastructure on the ground. Attack Operations is concerned with the theater missile threat in production, deployment, prior 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 and Automatic Target Recognition (ATR) upgrades to one or more airborne platforms (Joint STARS, F-15, U-2). The Air Force program is based upon taking our defense against the growing theater missile threat to the enemy by making near-term modifications to existing theater assets. The TMD program is concerned with improvements to existing operational capability, evaluating and demonstrating prototypes as well as simulated modifications during operational concept demonstrations. The budget activity is Operational System Development (7), due to the close interaction between operational systems and TMD upgrades.</p> <p>(U) Acquisition Strategy: HQ ASC will provide program management for the concept exploration of TMD Attack Operations. ASC will conduct lab experiments with Wright Labs, simulations of theater scenarios with the Theater Air Command and Control Simulation Facility (TACCSF) at Kirtland AFB, NM and support CONOPS and requirements definition by demonstrating measures of effectiveness for various sensor improvements and cuing schemes. HQ ESC will provide program management for Command, Control, Communications, Computers, and Intelligence (C4I) Enhancements. Prototypes and analysis of improvements to existing C4I assets will compliment the Attack Operations effort with combined participation in Operational Concept Demonstrations. TMD requirements and proposed material solutions will continue beyond concept exploration in the appropriate program element for an upgrade of a particular system. For example, the TMD demonstration and requirements analysis for Joint STARS Automatic Target Recognition (ATR) may transition into a Joint STARS P3I effort within the Joint STARS program element.</p>										
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7 - Operational System Development		0208060F Theater Missile Defense			
*FY94 TMD tasks were funded in PE27411F and PE63617F					
(U) B. Program Change Summary (\$ in Thousands)					
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Total Cost</u>
(U) Previous President's Budget	*21600	79302	80022	79126	TBD
(U) Appropriated Value	*16400	27302			
(U) Adjustments to Appropriated Value					
a. Congressional Reduction	-79	-298			
b. Small Business Innovative Research	-221	-570			
(U) Current Budget Submit/President's Budget	16100	26434	25102	22986	TBD
* FY94 TMD tasks were funded in PE27411F and PE63617F					
(U) Change Summary Explanation:					
<p>Funding: FY94 TMD funding was provided by PE27411F and PE63617F. The major change to Air Force TMD is the elimination of funds for the Kinetic Energy Air Launched Interceptor. The Air Force effort to conduct a near-term demonstration of a boost phase intercept of a theater missile target was delayed by budget cuts and acquisition strategy agreements. The effort was to develop a contingency capability to provide the CINCs' greater options during theater conflicts. As the schedule and scale of the program changed, the benefits were outweighed by the more robust Airborne Laser Demonstrator effort (funded in PE63319F). The ABL demonstrator cost and schedule was not much more than that of the proposed Kinetic Energy approach. In addition, funding for the Joint STARS automatic target recognition demonstration have been reduced. The program element provides funds for lab analysis, trade studies, and F-15 ATR demonstration. The goal is to define the correct combination of platforms (Joint STARS, U-2, F-15, UAVs , etc.) which provide complete coverage of prepared target areas, and upgrade these platforms with ATR. The ability to locate and identify theater missile targets is paramount to successful TMD as well as essential to improved overall combat capability.</p> <p>Schedule: N/A</p> <p>Technical: Joint STARS ATR demonstration will take place as a Wright Labs experiment/demonstration as opposed to an actual flight demonstration due to funding restraints.</p>					
(U) C. Other Program Funding Summary (\$ in Thousands): None.					
(U) D. Schedule Profile: See project schedules.					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February, 1995	
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0208060F Theater Missile Defense					PROJECT 4478	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4478 Command, Control, Communications, Computers, and Intelligence Enhancements	7,300	12,350	12,590	13,690	27,600	28,170	28,811	29,458	TBD	TBD
<p>(U) A. <u>Mission Description and Budget Item Justification</u> C4I has received very little TMD funding to date. An Intelligence Support Plan and analysis of the unique C4I capabilities needed to conduct effective Offensive Counter-Air (Attack Ops) and Defensive Counter Air (Active Defense) against the theater missile threat have recently identified specific enhancements. These enhancements are intended to ensure that theater interoperability, battle management and Command and Control timelines are improved for the theater CINC.</p> <p>U) <u>FY 1994</u></p> <ul style="list-style-type: none"> - (U) Upgrade and support Theater Air Command and Control Simulation Facility (TACCSF) operations for C4I simulation and analysis. (\$5200) - (U) Continue upgrade of the MCE/TPS-75 with a hardware/software prototype to provide missile tracking capability to four radars. (\$2100) <p>U) <u>FY 1995</u></p> <ul style="list-style-type: none"> - (U) Continue support for Theater Air Command and Control Simulation Facility (TACCSF) operations for C4I simulation and analysis. (\$5500) - (U) Integration of results of the TMD Intelligence Support Plan into C4I CONOPS and requirements definition. (\$250) - (U) Continue upgrade of the MCE/TPS-75 missile tracker prototype. (\$6600) <p>U) <u>FY 1996</u></p> <ul style="list-style-type: none"> - (U) Continue support for Theater Air Command and Control Simulation Facility (TACCSF) operations for C4I simulation and analysis. (\$5400) - (U) Continued development and integration of TMD Intelligence Support Plan into C4I requirements. (\$250) - (U) Continue upgrade of the MCE/TPS-75 missile tracker prototype. (\$6200) - (U) Define and integrate C4I requirements into existing C4I upgrades. (\$750) <p>U) <u>FY 1997</u></p> <ul style="list-style-type: none"> - (U) Continue TACCSF operations support for C4I simulation and analysis. (\$6200) - (U) Continue development and integration of TMD Intelligence Support Plan into C4I requirements. (\$250) - (U) Develop and demonstrate JTIDS TADIL-J Range Extension prototype to support TMD connectivity. (\$3200) - (U) Complete upgrade of the MCE/TPS-75 missile tracker prototype. (\$3300) - (U) Continue integration of C4I requirements into existing C4I upgrades (\$740) 										
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2)					DATE February, 1995							
7 - Operational System Development			0208060F Theater Missile Defense		PROJECT 4478							
(U) B. Program Change Summary (\$ in Thousands)												
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Total Cost</u>							
(U) Previous President's Budget	*12500	12350	12590	13690	TBD							
(U) Appropriated Value	*7300	12350	TBD	TBD	TBD							
(U) Adjustments to Appropriated Value												
a. Small Business Innovative Research	0	0										
b. Congressional Reductions	0	0										
(U) Current Budget Submit/President's Budget	7300	12350			TBD							
* FY94 TMD tasks were funded in PE27411F and PE63617												
(U) Change Summary Explanation: None.												
(U) C. Other Program Funding Summary (\$ in Thousands): None.												
(U) D. Schedule Profile												
	<u>FY 1994</u>			<u>FY 1995</u>			<u>FY 1996</u>			<u>FY 1997</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
Intelligence Support Plan Report			X				X				X	
CRC TMD Prototype IOC/FOC									X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE						
					February, 1995						
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT					
7 - Operational System Development			0208060F Theater Missile Defense			4478					
(U) A. Project Cost Breakdown (\$ in Thousands)											
		<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>						
(U) TACCSF		*5200	5500	5400	6200						
(U) Intelligence Support Plan Integration		0	250	250	250						
(U) JTIDS Relay Prototype		0	0	0	3200						
(U) CRC TMD Prototype		*2100	6600	6200	3300						
(U) Distributed Battle Management Simulation and Analysis		0	0	740	740						
(U) Total		*7,300	12,350	12,590	13,690						
*FY94 TMD tasks were funded in PE27411F and PE63617F											
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
Performing Organizations:											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget FY 1994	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Martin Marietta						4300	4800	4700	5478	TBD	TBD
Westinghouse		Feb 95				0	4600	2210	2750	0	9,560
HQ ESC						960	1450	2280	3090	TBD	TBD
<u>Support and Management Organizations</u>											
FFRDC						840	765	1963	1600	TBD	TBD
Non-FFRDC						1200	735	1437	772	TBD	TBD
<u>Test and Evaluation Organizations</u>											
TBD											

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0208060F Theater Missile Defense					PROJECT 4479	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4479 Attack Operations Concept Development	8,800	14,084	12,512	9,296	19,330	19,681	20,440	21,435	TBD	TBD
<p>(U) A. <u>Mission Description and Budget Item Justification</u> Improvements in Attack Operations are based on improving the ability to locate, identify and destroy theater missiles and associated infrastructure on the ground. In addition to the enhancements to C4I, Attack Operations project focuses on sensor capabilities and CONOPS and requirements development for TMD offensive counter-air. Automatic target recognition (ATR) upgrades to Joint STARS, F-15, and potentially U-2 and UAVs are analyzed in demonstrations and simulation during Operational Concept Demonstrations and CINCs' Experiments. The optimum set of sensor improvements will be proposed as P3I upgrades to within existing program elements.</p> <p>(U) <u>FY 1994</u></p> <ul style="list-style-type: none"> - (U) Began requirements analysis for Joint STARS ATR Demonstration. (\$1600) - (U) Conducted Operational Concept Demonstrations at White Sands Test Range. (\$2200) - (U) Explored sensor technologies and began prototyping for Automatic Target Recognition upgrades. (\$3900) - (U) Began requirements analysis for F-15 ATR Demonstration. (\$1100) <p>(U) <u>FY 1995</u></p> <ul style="list-style-type: none"> - (U) Continue prototype development of Joint STARS Automatic Target Recognition (ATR) Demonstration. (\$4800) - (U) Conduct Operational Concept Demonstrations with Roving Sands Exercise. (\$2598) - (U) Continue analysis of Attack Operations Sensor capabilities for CONOPS and requirements definition. (\$2482) - (U) Continue prototype development of F-15 Automatic Target Recognition (ATR) Demonstration. (\$4202) <p>(U) <u>FY 1996</u></p> <ul style="list-style-type: none"> - (U) Continue prototype analysis of Joint STARS Automatic Target Recognition (ATR) Demonstration. (\$218) - (U) Conduct Operational Concept Demonstration with Roving Sands Exercise. (\$3480) - (U) Continue analysis of Attack Operations Sensor improvements. (\$3050) - (U) Continue prototype development of F-15 Automatic Target Recognition (ATR) Demonstration. (\$5764) <p>(U) <u>FY 1997</u></p> <ul style="list-style-type: none"> - (U) Conduct demonstration of Joint STARS Automatic Target Recognition prototype. (\$1190) - (U) Conduct Attack Operations Operational Concept Demostration. (\$3870) 										
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7 - Operational System Development					0208060F Theater Missile Defense					PROJECT 4479							
(U) Continue Analysis of Sensor prototypes and Attack Operations simulations. (\$2996) (U) Conduct demonstration of F-15 Automatic Target Recognition prototype. (\$1240)																	
(U) B. Program Change Summary (\$ in Thousands)																	
		<u>FY 1994</u>		<u>FY 1995</u>		<u>FY 1996</u>		<u>FY 1997</u>		<u>Total Cost</u>							
(U) Previous President's Budget		*9100		14952		12512		9296		TBD							
(U) Appropriated Value		*9100		14952		TBD		TBD		TBD							
(U) Adjustments to Appropriated Value																	
a. Small Business Innovative Research		-221		-570													
b. Congressional Reductions		-79		-298													
(U) Current Budget Submit/President's Budget		8800		14084		12512		9296		TBD							
* FY94 TMD tasks were funded in PE27411F and PE63617F																	
(U) Change Summary Explanation:																	
Funding: Sensor analysis for improved Attack Operations was reduced in funding; delaying the completion of requirements definition.																	
Schedule: See table below.																	
Technical: Data collected during the Operational Concept Demonstrations will not be completely analyzed by HQ ASC. Delays in Flight demonstrations are expected.																	
(U) C. Other Program Funding Summary (\$ in Thousands): None.																	
(U) D. Schedule Profile																	
		<u>FY 1994</u>				<u>FY 1995</u>				<u>FY 1996</u>				<u>FY 1997</u>			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Joint STARS ATR Lab Experiment									X					X			
Operational Concept Demonstration			X					X			X					X	
F-15 ATR Demonstration								X					X				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE						
BUDGET ACTIVITY					PROJECT						
7 - Operational System Development					4479						
PE NUMBER AND TITLE					0208060F Theater Missile Defense						
(U) A. Project Cost Breakdown (\$ in Thousands)											
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>							
(U) Joint STARS ATR Demonstration	*1600	4800	218	1190							
(U) Operational Concept Demonstration	*2200	2598	3480	3870							
(U) Sensor Applications	*3900	2482	3050	2996							
(U) F-15 ATR Demonstration	*1100	4204	5764	1240							
(U) Total	*8,800	14,084	12,512	9,296							
*FY94 TMD tasks were funded in PE27411F and PE63617F											
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
Performing Organizations:											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget FY 1994	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Boeing		Aug 94				391	750	0	0	TBD	TBD
Hughs		Aug 94				500	200	3900	0	TBD	TBD
Martin/Loral		Mar 95				0	400	0	0	TBD	TBD
MDA		Mar 95				0	1060	2200	1240	TBD	TBD
Norden		Sep 94				490	0	0	0	TBD	TBD
SEMCO		Feb 95				0	200	400	100	TBD	TBD
TBD		Sep 95				0	100	100	100	TBD	TBD
Wright Lab	AF FM 616	Mar 95				0	500	0	0	TBD	TBD
HSC/AL	AF FM 616	Aug 94				975	1495	2000	2297	TBD	TBD
Sandia Nat. Labs	MIPR	Mar 94				3786	4800	0	1190	TBD	TBD

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7 - Operational System Development					0208060F Theater Missile Defense					4479	
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	Budget FY 1994	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
<u>Support and Management Organizations</u>											
						400	357	82	648	TBD	TBD
						191	280	0	355	TBD	TBD
						0	200	0	200	TBD	TBD
<u>Test and Evaluation Organizations</u>											
28 Test/Txt		Mar 95				16	0	0	0	TBD	TBD
AFSAA	AF FM 616	Feb 95				0	360	300	300	TBD	TBD
Eglin-46Test Wing		May 94				2051	3382	4130	3866	TBD	TBD