

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	26,688	30,352	26,129	28,551	28,212	25,408	24,040	24,540	Continuing	TBD
4478 Command, Control, Communications, Computers, and Intelligence Enhancements	19,103	22,598	17,903	19,802	18,289	15,083	13,489	13,769	Continuing	TBD
4479 Attack Operations Concept Development	7,585	7,754	8,226	8,749	9,923	10,325	10,551	10,771	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(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. AF TMD concentrates on defining improvements to existing operational capabilities, developing and evaluating prototypes, demonstrating as well as simulating modifications during 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 TCTs by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks for Offensive Counterair (Attack Operations) against Time Critical Targets (TCTs). **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 and advanced sensors and target identification capabilities, CONOPS and requirements development for offensive counterair and optimized integration with defensive systems. The AF TMD program seeks to improve existing operational capability, evaluate and demonstrate prototypes, as well as simulate and demonstrate modifications during operational concept demonstrations. This program is in Budget Activity 7 because its projects are upgrades to existing operational systems.

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(U) B. Budget Activity Justification

This program is in Budget Activity 7 because its projects are upgrades to existing operational systems.

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget	26,873	31,057	29,605	32,394	TBD
(U) Appropriated Value	29,182	31,057			
(U) Adjustments to Appropriated Value					
a. Congressional General Reductions	-1,727	-705			
b. Small Business Innovative Research (SBIR)	-585				
c. Omnibus or Other Above Threshold Reprogram	-182				
d. Below Threshold Reprogramming					
(U) Adjustments to Budget Years Since FY 1999 PB			-3,476	-3,843	
(U) Current Budget Submit/FY 2000 PB	26,688	30,352	26,129	28,551	TBD

(U) Significant Program Changes:
FY99: \$1,004 identified as a source for SBIR

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense	PROJECT 4478
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4478 Command, Control, Communications, Computers, and Intelligence Enhancements	19,103	22,598	17,903	19,802	18,289	15,083	13,489	13,769	Continuing	TBD

(U) A. Mission Description

C4I enhancements are needed to reduce timelines required to negate TCTs by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks for Offensive Counterair (Attack Operations) against Time Critical Targets (TCTs). The CAF CONOPS for C2 Against Time Critical Targets and Air Superiority Mission Area Plan (MAP) provide the foundation. The BM/C⁴I program encompasses:

- 1) **Dynamic Battle Management (DBM)** ACC vision for providing flexible, centralized C2 throughout conflict spectrum to meet Joint Vision 2010 objectives. Will allow JFACC to tailor decentralized execution to best meet the ROE and span of control requirements enabling prosecution of any TCT. DBM 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 prototypes and demonstrates advanced decision aid capabilities to upgrade the battle management tools and infrastructure to better execute the 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 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 a website 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 Application of IPB (A2IPB) tool for TBMCS/GCCS to assist the intelligence analyst at a Joint Intelligence Center (JIC) and the Intel/Ops Planner at an AOC.
- 4) **Data Link Connectivity** which provides upgrades to existing Air Force platforms to better utilize existing communications systems. These include JTIDS TMD Message Set Integration and JTIDS gateways to extend range beyond line of sight and interface with National Technical Means (NTM) to provide attack and early launch reporting to theater.

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense	PROJECT 4478
(U) <u>FY 1998 (\$ in Thousands):</u>		
(U) 3,826	Enhanced DBM development/M&S environment (JSTARS and AWACS) tunnels assuming and sharing BMC4I responsibilities) with DBM unique prototyping/technology; conduct DBM demonstration to divert fighters from original ATO target to prosecute TCTs.	
(U) 2,965	Integrated Intelligence Preparation of the Battlespace (IPB) evolutionary prototype (EP1) with TBMCS; adapted IPB tool for Air Intelligence Agency's Virtual Production environment; investigated area limitation functionality and tool integration, demonstrate automated procedures and system capabilities in Ops Concept Demonstrations, CINC experiments and Joint Exercises. Completed Area Limitation Technical Requirements Document (TRD) and kickoff Joint Operational Requirements Document (JORD) development	
(U) 6,112	Integrated JDP V1.0 and TCTA (ground targeting) with TBMCS 1.0 and release; began AODA prototype/technology development; kicked off Joint Targeting Execution (JTE) collaborative ID concept exploration and Automatic Target Recognition(ATR)/TCTA integration efforts.	
(U) 5,712	Conducted JTIDS Range Extension prototype development; defined and implemented Improved Situation Awareness for Missiles (ISAM) process; completed Communications Planning Module (CPM) prototype; investigated C4I contribution to Attack Operations and Real Time Information in cockpit (RTIC).	
(U) 488	Conducted MCE/TPS-75 Missile Tracking in-plant and field testing and final prototype delivery.	
(U) \$19,103	Total	
(U) <u>FY 1999 (\$ in Thousands):</u>		
(U) 6,104	Conduct DBM operations onboard AWACS and JSTARS live-fly platforms during EFX 99.	
(U) 5,690	Continue to develop IPB evolutionary prototypes (EPs) for TBMCS and Air Intelligence Agency's Virtual Production environment; demonstrate improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDs), CINC experiments and Joint Exercises. Complete JORD and begin Area Limitation Module spiral 1 development	
(U) 6,865	Complete AODA spiral 1 prototype development and EFX 99 demonstration; integrate and demonstrate JTE concept in laboratory (single site); complete ATR/TCTA integration and EFX 99 demonstration; kickoff Intelligence Surveillance Recce (ISR) Real Time Requirements Definition effort; utilize TCT Testbed to improve integration into operational systems and demonstrate integrated capabilities in OCDs, CINC experiments, and Joint Exercises.	
(U) 3,155	Complete JRE prototype development, EFX 99 demonstration, and implementation plan; perform kill chain based C4I analysis and ops/intel integration of RTIC.	
(U) 748	Identified as a source for SBIR	
(U) \$22,598	Total	
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BUDGET ACTIVITY		PROJECT
7 - Operational System Development	0208060F Theater Missile Defense	February 1999 4478
<p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <p>(U) 4,448 Expand DBM to include upgrades for AOC and GTACS and conduct DBM operations during EFX 00.</p> <p>(U) 5,893 Continue to develop IPB evolutionary prototypes (EPs) for TBMCS and Air Intelligence Agency's Virtual Production environment; demonstrate improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDs), CINC experiments and Joint Exercises. Complete Area Limitation Module spiral 2 prototype development and conduct EFX 00 demonstration</p> <p>(U) 4,819 Complete AODA spiral 2 prototype development and conduct EFX 00 demonstration; continue to develop JTE and conduct EFX 00 demonstration (distributed, collaborative targeting); Kickoff ISR-Real Time prototype development effort; maintain TCT Testbed to improve integration into operational systems and demonstrate integrated capabilities in OCDs, CINC experiments, and Joint Exercises.</p> <p>(U) 2,743 Continue to explore communications improvements that compress Theater Missile engagement timelines and demonstrate integrated capabilities in OCDs, CINC experiments, and Joint Exercises.</p> <p>(U) \$17,903 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <p>(U) 5,509 Continue expansion of DBM to include upgrades for AOC and GTACS and conduct DBM operations during EFX 00.</p> <p>(U) 5,974 Continue to develop IPB evolutionary prototypes (EPs) for TBMCS and Air Intelligence Agency's Virtual Production environment; demonstrate improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDs), CINC experiments and Joint Exercises. Complete Area Limitation Module spiral 2 prototype development and conduct EFX 00 demonstration</p> <p>(U) 4,900 Complete AODA spiral 2 prototype development and conduct EFX 00 demonstration; continue to develop JTE and conduct EFX 00 demonstration (distributed, collaborative targeting); kickoff ISR-Real Time prototype development effort; maintain TCT Testbed to improve integration into operational systems and demonstrate integrated capabilities in OCDs, CINC experiments, and Joint Exercises.</p> <p>(U) 3,419 Continue to explore communications improvements that compress Theater Missile engagement timelines and demonstrate integrated capabilities in OCDs, CINC experiments, and Joint Exercises.</p> <p>(U) \$19,802 Total</p> <p>(U) <u>B. Project Change Summary - Description of Significant Changes</u></p> <p>Not Applicable</p>		
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(U) C. Other Program Funding Summary (\$ in Thousands)

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E, BMDO PMA F3261, BM/C4I	11,134	9,885	13,293	12,855	13,025	13,202	12,959	13,224	TBD	TBD

(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 JROC Mission Need Statement (MNS) and are consistent with the Air Force and Joint TMD CONOPS and 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. For example, the TMD demonstration and requirements analysis for F-15E ATC/R may transition into a F-15E Engineering & Manufacturing Development (EMD) and P3I project within the F-15E program element. 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.

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(U) E. Schedule Profile:																			
		<u>FY1998</u>					<u>FY1999</u>					<u>FY 2000</u>					<u>FY 2001</u>		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
(U) TPS-75 Expert Missile Tracker Prototypes/Contingency Support Systems	X																		
(U) Establish DBM dev. environment; unique prototyping/technology development; EFX demonstrations			X			X				X				X					
(U) Demonstrate automated IPB procedures and system capabilities in Ops Concept Demos, CINC experiments and Joint Exercises.				X			X					X				X			
(U) Explore use of promising planning tools, C2 decision aids, computer processing improvements, sensor fusion technology and sensor upgrades to TACS				X			X					X				X			
(U) Continue to explore JTIDS/Link-16 Integration & Beyond LOS improvements that compress engagement timelines and demonstrate integrated capabilities				X			X					X				X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 1999
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(U) **A. Project Cost Breakdown (\$0 in Thousands)**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) MCE/TPS-75 Expert Missile Tracker (EMT) prototype	488	0	0	0
(U) Dynamic Battle Management (DBM)	3,826	6,140	4,448	5,509
(U) Intelligence Preparation of Battlespace (IPB)	2,965	5,690	5,893	5,974
(U) Automated Decision Aids/Planning Tools	6,114	6,865	4,819	4,900
(U) JTIDS/Link-16 Integration & Beyond LOS Capability	5,712	3,155	2,743	3,419
(U) Identified as a source for SBIR FY99	0	748	0	0
(U) Total	19,103	22,598	17,903	19,802

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0208060F Theater Missile Defense					PROJECT 4478	
(U) B. Budget Acquisition History and Planning Information (\$0 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 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Martin Marietta (TACCSF)	FFP	Oct 95	N/A	N/A	9,100	0	0	0	0	0	9,100
North/Grumman (TPS-75)	FFP	Oct 95	N/A	N/A	0	488	0	0	0	0	1,000
Zeltech/SPARTA PSR (IPB)	T&M	May 96	N/A	N/A	500	2,294	3,693	TBD	TBD	Continuing	TBD
Alphatech (JDP)	T&M	Mar 95	N/A	N/A	0	0	0	0	0	Continuing	TBD
Boeing (DBM)	T&M	Dec 97	N/A	N/A	0	500	1,126	TBD	TBD	Continuing	TBD
Northrop Grumman (DBM)	T&M	Dec 97	N/A	N/A	0	500	1,126	TBD	TBD	Continuing	TBD
BDM (DBM) For Profit Contractor (DBM)	T&M	Nov 97	N/A	N/A	0	250	330	TBD	TBD	Continuing	TBD
Motorola (TCTA)	T&M	Jan 98	N/A	N/A	0	731	810	TBD	TBD	Continuing	TBD
LMCCS (JDP) For Profit Contractor (AODA)	T&M	Mar 96	N/A	N/A	0	846	0	0	0	0	516
For Profit Contractor (MSI)	T&M	Oct 97	N/A	N/A	0	1,400	0	0	0	0	1,400
Lock/Mart (MSI)	TBD	Oct 97	N/A	N/A	0	1,316	1,900	TBD	TBD	Continuing	TBD
For Profit Contractor (MSI)	TBD	Dec 97	N/A	N/A	0	1,049	350	TBD	TBD	Continuing	TBD
Lock/Mart (MSI)	T&M	Mar 97	N/A	N/A	0	0	0	50	0	0	50

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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 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
For Profit Contractor (CPM)	T&M	Oct 97	N/A	N/A	0	90	500	TBD	TBD	Continuing	TBD
For Profit Contractor (Analyses)	TBD	Nov 97	N/A	N/A	0	160	1,194	TBD	TBD	Continuing	TBD
MASC For Profit Contractor (JRE)	T&M	Nov 96	N/A	N/A	0	0	0	0	0	Continuing	TBD
	TBD	Oct 97	N/A	N/A	0	2,619	5,152	TBD	TBD	Continuing	TBD
<u>Support and Management Organizations</u>											
FFRDC			N/A	N/A	1,605	1,994	2,054	2,116	2,180	Continuing	TBD
Non-FFRDC (ESC)			N/A	N/A	1,935	1,040	1,071	1,103	1,136	Continuing	TBD
Non-FFRDC (ACC)			N/A	N/A	0	1,640	540	556	573	Continuing	TBD
Non-FFRDC (XORFS)			N/A	N/A	0	900	927	955	984	Continuing	TBD
HQ ESC			N/A	N/A	2,251	1,286	1,077	1,109	1,142	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
TBD											
Government Furnished Property:											
Identified as a source for SBIR FY99											
Subtotal Product Development					9,600	12,243	16,181	12,064	13,787	Continuing	TBD
Subtotal Support and Management					5,791	6,860	5,669	5,839	6,015	Continuing	TBD
Subtotal Test and Evaluation					0	0	0	0	0		TBD

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Total Project	15,391	19,103	22,598	17,903	19,802	Continuing	TBD
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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0208060F Theater Missile Defense				PROJECT 4479		
<i>COST (\$ In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4479 Attack Operations Concept Development	7,585	7,754	8,226	8,749	9,923	10,325	10,551	10,771	Continuing	TBD
<p>(U) A. <u>Mission Description</u> Improvements in Attack Operations are based on the ability to locate, identify, and destroy theater missiles, their launchers, and associated infrastructure on the ground. In addition to the enhancements to C4I, the Attack Operations Project focuses on advanced sensor and target identification capabilities, CONOPS and requirements development for TMD offensive counter-air and their optimized integration with defensive systems. Specific technologies such as automatic target cueing/recognition (ATC/R) and moving target indicator/track (MTI/T) upgrades to Joint STARS, F-15E and potentially the U-2, F-16 and UAVs are to be analyzed using constructive analysis and evaluated through Technology/Operational Concept Demonstrations and CINC Experiments along with command and control connectivity upgrades critical to their optimum employment against time-critical targets. Effectiveness and affordability parameters defined will be used in support of follow on acquisition decisions involving P3I upgrades to existing weapon systems and potential new start programs within existing/other program elements.</p> <p>(U) <u>FY 1998 (\$ in Thousands):</u> (U) 2,033 Conducted Attack Operations Operational Concept Demonstration. (U) 842 Continued analysis of architectures with weapon system and BMC4I upgrades, incorporated model and threat scenario upgrades and performed engagement analyses for input to future year mission analysis. (U) 3,725 Conducted development of F-15E ATC/R prototype integrated with improved on/off-board sensor fusion. Continued demonstration of surveillance ATR prototype. (U) 985 Planned integration of prototype ATR WH&SW into Time-Critical Targeting Aid workstation. (U) 7,585 Total</p> <p>(U) <u>FY 1999 (\$ in Thousands):</u> (U) 1,362 Conduct Attack Operations Operational Concept Demonstration. (U) 1,520 Continue analysis of updated architectures with weapon system and BMC4I upgrades, to support future year mission analysis. Plan participation in future year distributed simulations to demonstrate improvements in attack operations capabilities. (U) 2,691 Conduct demonstration of F-15E ATC/R prototype with sensor fusion. (U) 1,925 Conduct development of common ATR for integration in the Time-Critical Targeting Aid (TCTA) for multi-sensor application. Continue development and demonstration planning of ATR onboard the JSTARS test aircraft (T3). (U) 256 FY99 SBIR</p>										
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(U) 7,754	Total	
(U) <u>FY 2000 (\$ in Thousands):</u>		
(U) 2,145	Conduct Attack Operations Operational Concept Demonstration.	
(U) 1,900	Continue analysis of architectures with weapon system and BMC4I upgrades. Participate in a distributed simulation to verify improvements in attack operations capabilities from sensor to shooter that were demonstrated on prototype attack and surveillance system. Support development of users operational requirements for weapon system ORDs.	
(U) 2,090	Conduct demonstration of prototype TCTA with ATR. Conduct demonstration of JSTARS ATR with expanded target set of time-critical targets.	
(U) 2,091	Conduct development of F-15E ATC/R prototype with on- and off-board sensor fusion. Perform lab demonstration of prototyped capabilities.	
(U) 8,226	Total	
(U) <u>FY 2001 (\$ in Thousands):</u>		
(U) 2,080	Conduct Attack Operations Operational Concept Demonstration.	
(U) 2,200	Continue analysis of architectures with weapon system and BMC4I upgrades. Participate in a distributed simulation to verify improvements in attack operations capabilities from sensor to shooter that were demonstrated on prototype attack and surveillance system. Support development of users operational requirements for weapon system ORDs.	
(U) 2,235	Conduct development of F-15E ATC/R prototype with on- and off-board sensor fusion. Integrate prototyped HW & SW on F-15E aircraft.	
(U) 2,234	Conduct development of prototype ATR HW & SW for multisensor application in the TCTA.	
(U) 8,749	Total	
(U) B. <u>Project Change Summary - Description of Significant Changes:</u>		
Not Applicable		
(U) Not Applicable C. <u>Other Program Funding Summary (\$ in Thousands)</u>		

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(U) **D. Acquisition Strategy:** HQ Avionics Systems Center (ASC) provides the program management for the concept exploration of TMD Attack Operations. ASC conducts lab demonstrations with Wright Labs and supports Concept of Operations (CONOPS) development and requirements definition by analyzing and demonstrating measures of effectiveness for various sensor improvements and cueing schemes.

(U) **E. Schedule Profile**

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) ATC/R Demos (F-15E/Surveillance)			X			X				X				X		
(U) Ops Concept Demonstrations		X				X				X				X		

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0208060F Theater Missile Defense				PROJECT 4479			
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U) Joint STARS ATC/R Demonstration/Improvements					985	1,925	2,091	2,234			
(U) Operational Concept Demonstration					2,033	1,362	2,145	2,080			
(U) Sensor Prototypes and Attack Ops Demonstrations/Sims					842	1,520	1,900	2,200			
(U) F-15E ATC/R Demonstrations					3,725	2,691	2,090	2,235			
(U) Identified as a source for SBIR						256					
(U) Total					7,585	7,754	8,226	8,749			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
Identified as a source for SBIR							256			256	256
Boeing	CPFF	Aug 94	N/A	N/A	772	0	0	0	0	0	772
Boeing	CPFF	30 May 86	N/A	N/A	890	0	0	0	0	0	890
Geometric	CPFF	Mar 95	N/A	N/A	65	0	0	0	0	0	65
Hughes-FD	CPFF	Mar 95	N/A	N/A	1,234	3,006	1,915	1,700	1,700	Continuing	TBD
Norden	CPFF	Sep 94	N/A	N/A	540	0	0	0	0	0	540
Veda	CPFF	Feb 95	N/A	N/A	200	0	0	0	0	0	200
Lincoln Lab	MIPR	Mar 95	N/A	N/A	100	0	0	0	0	0	100
Project 4479					Page 14 of 16 Pages				Exhibit R-3 (PE 0208060F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0208060F Theater Missile Defense					PROJECT 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 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Sverdrup	CPFF	Mar 95	N/A	N/A	565	0	0	0	0	0	565
HSC/AL	MIPR	Aug 94	N/A	N/A	2,470	0	0	0	0	0	2,470
Sandia Nat Labs	MIPR	Mar 95	N/A	N/A	8,586	0	0	0	0	0	8,586
Lockheed Martin	MIPR	TBD	N/A	N/A	0	746	1,771	1,600	1,600	Continuing	TBD
Optimetrics	CPFF	TBD	N/A	N/A	0	0	150	150	150	Continuing	TBD
ESC//JTF	MIPR	TBD	N/A	N/A	0	0	0	0	600	0	600
Grumman	MIPR	Sep 96	N/A	N/A	0	0	0	0	350	0	350
ACC/XPSAS	MIPR	TBD	N/A	N/A	0	500	505	510	515	Continuing	TBD
WL/AAZ	MIPR	TBD	N/A	N/A	0	0	0	0	96	0	96
WL/AAR	MIPR	TBD	N/A	N/A	0	650	675	700	725	Continuing	TBD
AL/CFHI	MIPR	TBD	N/A	N/A	0	365	585	600	600	Continuing	TBD
WL/AAJT	MIPR	TBD	N/A	N/A	0	0	112	115	118	Continuing	TBD
<u>Support and Management Organizations</u>											
FFRDC			N/A	N/A	757	210	230	250	250	Continuing	TBD
Non-FFRDC			N/A	N/A	471	160	192	220	220	Continuing	TBD
HQ ASC			N/A	N/A	561	948	559	700	700	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
28 Test/TOT	MIPR	Mar 95	N/A	N/A	17	950	416	1,581	1,075	Continuing	TBD
AFSAA	MIPR	Feb 95	N/A	N/A	350	0	0	0	0	0	350
Eglin-46 Tst Wg		May 94	N/A	N/A	5,296	50	388	100	50	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999			
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0208060F Theater Missile Defense				PROJECT 4479		
Government Furnished Property:										
Item	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	FY 2000	FY 2001	Budget to Complete	Total Program
Identified as a source for SBIR						256				
Subtotal Product Development				15,422	5,267	5,713	5,375	6,454	Continuing	TBD
Subtotal Support and Management				1,789	1,318	981	1,170	1,170	Continuing	TBD
Subtotal Test and Evaluation				5,663	1,000	804	1,681	1,125	Continuing	TBD
Total Project				22,874	7,585	7,754	8,226	8,749	Continuing	TBD