

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges	PROJECT 2286
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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
2286 Combat Training Range Equipment	18,998	13,999	6,220	12,670	13,235	13,289	14,963	15,275	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

This program develops the electronic telecommunications, and instrumentation equipment/systems for training ranges worldwide. These systems provide real-time monitoring and control of aircrew air-to-air, air-to-ground, and electronic warfare training along with the ability to record events for crew debriefing and analysis. The future developmental effort is a rangeless air combat training system, which consists of ground subsystems and airborne subsystems. The Air Force/Navy are currently involved in a technical evaluation to determine which system best fits the services' needs. This rangeless system will provide aircrews with a rangeless training capability and provide a ground monitoring and control capability of training activity when a training range is instrumented with appropriate ground components. The system will have a modular design, which will maximize the use of state of the art technology, commercial off the shelf (COTS) equipment, and non-developmental items (NDI) to provide for future expansion capabilities. Another effort is to develop the advanced threat Mini-(MUTES) Multiple Threat Emitter System Modification Program (M3P) to satisfy Air Force Electronic Warfare training capability requirements. The required system modifications will enable Mini-MUTES to incorporate the latest, most lethal advanced threats. This program element also funds aircraft/pod interfaces, software interoperability among service ranges and the encryption of range/aircraft data links.

(U) FY 1998 (\$ in Thousands):

- (U) \$5,369 Continued Combat Training Ranges (CTR) basic operating support, and system acquisition and engineering support for range and threat systems
- (U) \$3,246 Completed Nellis Air Combat Training System (NACTS) Engineering and Manufacturing Development (EMD)
- (U) \$1,593 Continued interoperability improvements with existing Navy ranges to include software upgrades and weapons simulation development
- (U) \$623 Continued development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program offices and aircraft manufacturers
- (U) \$6,497 Continued Mini-MUTES Modification Program (M3P) Advanced Threats
- (U) \$1,095 Continued ASSET [ACTS (Air Combat Training System) Software Support Evaluation and Test] efforts
- (U) \$575 Continued Joint Tactical Combat Training System (JTCTS) development with emphasis on Alpena Range
- (U) \$18,998 Total

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604735F Combat Training Ranges	2286
<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$3,473 Continue Combat Training Ranges (CTR) basic operating support, and system acquisition and engineering support for range and threat systems - (U) \$1,710 Continue interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development - (U) \$1,000 Continue Joint Tactical Combat Training System (JTCTS) development - (U) \$926 Continue development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program offices - (U) \$4,175 Continue Mini-(MUTES) Multiple Threat Emitter System Modification Program (M3P) Advanced Threats - (U) \$2,252 Continue ASSET [ACTS (Air Combat Training System) Software Support Evaluation and Test] efforts - (U) \$463 Identified as a source for SBIR - (U) \$13,999 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$3,995 Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems - (U) \$317 Continue interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development - (U) \$205 Continue development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office - (U) \$1,703 Continue ASSET efforts - (U) \$6,220 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$3,962 Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems - (U) \$1,892 Continue interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development - (U) \$1,007 Continue development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office - (U) \$3,964 Continue M3P Advanced Threats - (U) \$1,845 Continue ASSET efforts - (U) \$12,670 Total <p>(U) B. <u>Budget Activity Justification:</u></p>		
Project 2286	Page 2 of 8 Pages	Exhibit R-2 (PE 0604735F)

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development			PE NUMBER AND TITLE 0604735F Combat Training Ranges			PROJECT 2286					
<p>This program is in budget activity 5 - Engineering and Manufacturing Development because the Combat Training Ranges (CTR) Program directly contributes to the effectiveness and survivability of US combat forces by developing range instrumentation and training systems to increase the effectiveness of the training spectrum from individual aircrew skill training to large-scale exercises.</p>											
(U) C. <u>Program Change Summary (\$ in Thousands)</u>											
		<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	Total <u>Cost</u>					
(U) Previous President's Budget (1999 PB)		19,131	14,581	12,984	14,011	Cont					
(U) Appropriated Value		20,331	14,581								
(U) Adjustments to Appropriated Value											
a. Congressional/General Reductions		-690	-582								
b. SBIR		-513									
c. Omnibus or Other Above Threshold Reprogram		-130									
d. Below Threshold Reprogramming											
(U) Adjustments to Budget Years Since FY 1999 PB				-6,764	-1,341						
(U) Current Budget Submit/ FY 2000 PB		18,998	13,999	6,220	12,670	Cont					
 (U) Significant Program Changes:											
FY00 reduced \$5,551 to better align expenditure and reduced by \$1,213 for higher Air Force priorities.											
FY01 reduced by \$1,341 for higher Air Force priorities.											
FY99 \$463 identified as a source for SBIR.											
 (U) D. <u>Other Program Funding Summary (\$ in Thousands)</u>											
		<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>	To <u>Compl</u>	Total <u>Cost</u>
(U) PE27429F: Appropriation: Other		15,557	24,024	19,569	31,038	28,738	27,980	34,919	33,486	Cont	Cont
Procurement, AF (OPAF) Program Title: Combat Training Ranges											

DATE
February 1999

BUDGET ACTIVITY
5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE
0604735F Combat Training Ranges

	<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>	To <u>Compl</u>	Total <u>Cost</u>
(U) PE27429F: Appropriation: Aircraft Procurement, AF (APAF), Program Title: Combat Training Ranges	9,751	454	17,410	19,409	19,880	20,473	20,597	21,017	Cont	Cont

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development						PE NUMBER AND TITLE 0604735F Combat Training Ranges						PROJECT 2286							
(U) E. <u>Acquisition Strategy:</u> The acquisition strategy is competitive, with cost plus contracts.																			
(U) F. <u>Schedule Profile</u>																			
		<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) Nellis Air Combat Training System (NACTS)																			
(U) Operational Fielding																			
						X													
(U) Initial Operational Capability (IOC) (Without Encryption Option)																			
							X												
(U) Advances Threats Development																			
(U) Initiate New Acquisition																			
	*																		
(U) Contract Award																			
			*																
(U) Preliminary Design Review (PDR)																			
					*														
(U) Critical Design Review (CDR)																			
						X													
(U) Field Testing																			
										X									
(U) Production Decision																			
												X							
(U) IOC																			
																	X		
(U) Joint Service Range Software Interoperability																			
(U) Joint Service AMRAAM 5.1 Software Upgrade																			
						X													
(U) Joint Service Tracking Instrumentation Subsystem Emulator (TISM) Program																			
						X													
(U) Digital Display System (DDS) Replacement with Advanced DDS (ADDS) Displays																			
(U) Joint Service Common Computational Computer System (CCS) Platform																			
																	X		

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development							PE NUMBER AND TITLE 0604735F Combat Training Ranges							PROJECT 2286								
							<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) Joint Tactical Combat Training System (JTCTS)																						
(U) Begin Technical Evaluation													X									
(U) ASSET Facility													X									
(U) ADDS 4.0 AF/Navy Integration													X									
(U) ADDS 3.2 Beta Block 6 Development																					X	
(U) DDS Upgrade Air National Guard (ANG)																						X
* = Completed event																						
X = Planned event																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999				
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604735F Combat Training Ranges				PROJECT 2286			
(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) Nellis Air Combat Training System (NACTS)				3,246	0	0	0				
(U) Aircraft Interface Development				623	926	205	1,007				
(U) Advanced Threat Development				6,497	4,175	0	3,964				
(U) Joint Service Interoperability Improvements				1,593	1,710	317	1,892				
(U) ACTS (Air Combat Training System) Software Support Evaluation and Test (ASSETS) Efforts				1,095	2,252	1,703	1,845				
(U) Joint Tactical Combat Training Ranges (JTCTS)/Alpena Development				575	1,000	0	0				
(U) Combat Training Ranges Program Office Support				5,369	3,473	3,995	3,962				
(U) Identified as a source for SBIR					463						
(U) Total				18,998	13,999	6,220	12,670				
(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>
Identified as a source for SBIR							463				463
<u>Product Development Organizations</u>											
Cubic Defense (NACTS)	C/CPAF/FFP	Mar 95			31,149	3,246	0	0	0	0	34,395
Raytheon (JTCTS)	Navy Contr	Mar 95			2,500	575	1,000	0	0	0	3,075
ASI (ASSET)	CPAF	Sep 96			2,385	1,095	2,252	1,703	1,845	Cont	Cont
Project 2286				Page 6 of 8 Pages				Exhibit R-3 (PE 0604735F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604735F Combat Training Ranges					PROJECT 2286	
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
Harris Corp (Advanced Threats)	C/CPAF/FFP	May 98			380	6,497	4,175	0	3,964	Cont	463 Cont
Joint Interoperability Aircraft Interface	Navy Contract Through MOAs with ALCs & Aircraft SPO Contractors	Mar 97 Jun 96			3,429	1,593	1,710	317	1,892	Cont	Cont
Lockheed Martin (AMODSM)	Navy Contractor	FY95			2,880	0	0	0	0	0	2,880
<u>Support and Management Organizations</u>											
ASC/WMR, Eglin AFB, FL	Various				8,576	5,045	3,173	3,695	3,662	Cont	Cont
NAWC, China Lake, CA	Various				113	113	0	0	0	0	226
<u>Test and Evaluation Organizations</u>											
ASC/WMR, Eglin AFB, FL	Various				1,405	100	100	100	100	Cont	Cont
46 Test Wing, Eglin AFB, FL	Various				640	111	200	200	200	Cont	Cont

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BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT	
5 - Engineering and Manufacturing Development			0604735F Combat Training Ranges			2286	
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>							
Government Furnished Property: Not Applicable							
	Total						
	<u>Prior to</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	FY 1998	FY 1998	FY 1999	FY 2000	FY 2001	Complete	Program
Identified as a source for SBIR			463				
Subtotal Product Development	43,758	13,629	10,063	2,225	8,708	Cont	Cont
Subtotal Support and Management	8,689	5,158	3,173	3,695	3,662	Cont	Cont
Subtotal Test and Evaluation	2,045	211	300	300	300	Cont	Cont
Total Project	54,492	18,998	13,999	6,220	12,670	Cont	Cont