

UNCLASSIFIED

PE NUMBER: 0604735F

PE TITLE: Combat Training Ranges

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604735F Combat Training Ranges
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	8.336	16.700	17.657	17.583	17.816	17.794	18.093	18.440	Continuing	TBD
2286 Combat Training Range Equipment	8.336	16.700	17.657	17.583	17.816	17.794	18.093	18.440	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Combat Training Range (CTR) Program Element (PE) provides equipment and support to Air Force units and combat training ranges for mission testing, training, and evaluation of aircrews, as well as the operational testing of weapon systems and tactics under simulated combat conditions. This PE provides funding for the development of electronic warfare training capabilities, telecommunications, instrumentation equipment/systems, and standards for the training ranges. The P5CTS is a cooperative development between USAF and USN (Navy TCTS) to provide air combat training systems for both services. The P5CTS will take a spiral acquisition approach to the development of improved Air Combat Training System (ACTS) capabilities for fielding at operational locations worldwide. It will provide capabilities to train aircrews "like we fight" in air-to-air, air-to-surface, and surface-to-air combat as well as electronic warfare. Additionally, P5CTS provides real-time monitoring and control of aircraft during large and joint force exercises, and small unit training, while recording events for post-mission debrief and analysis. Other P5CTS capabilities include: real-time kill notification/verification, system security initiatives to protect classified aircraft and armament systems information, integration of electronics, air-to-ground weapon simulations, and threat simulations. The P5CTS also includes ancillary ground system integration, location specific architecture, internal pod replacement subsystems, integration of new aircraft Operational Flight Programs, and the development of solutions to meet changing data link standards. Other efforts included in this PE are the integration of GREEN FLAG capabilities (previously known as Air Warrior) and the integration of advanced range instrumentation standards. GREEN FLAG provides close air combat support training for ground forces (US Army, USMC). This PE also includes the capabilities to facilitate live/virtual/constructive connectivity and standardization across all platforms to include the F/A-22 and F-35, and interoperability for joint test/training exercises.

This PE includes the development of advanced threat emitters. In FY02, the Advanced Threat Emitter System (ATES) incorporated other Service's requirements and evolved into the Joint Threat Emitter (JTE) system. The JTE continues the development of a comprehensive suite of threat signals for aircrew tactics and electronic combat training for simulated penetrations of hostile airspace. This program complements existing range threat simulators by emulating signals that simulate current and future air defense and threat radars. In FY04, the Threat Reaction Analysis Indicator System (TRAINS) underwent improvements to increase reliability, maintainability, availability, and functional capabilities, including Reactive Threats, Deceptive Analysis, and site electronic countermeasure information database capabilities. The TRAINS is an electronic combat analysis system that is paired with the Multiple Threat Emitter System (MUTES) and other Threat Emitter Systems to provide analysis of aircraft Electronic Countermeasure (ECM) responses to threat signals.

This program is in Budget Activity 5 - Systems Development and Demonstration because the CTR Program directly contributes to the effectiveness and survivability of US combat forces by providing training capabilities to simulate real combat conditions to prepare the warfighter for actual combat.

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(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	8.794	14.363	17.613	17.489
(U) Current PBR/President's Budget	8.336	16.700	17.657	17.583
(U) Total Adjustments	-0.458	2.337		
(U) Congressional Program Reductions				
Congressional Rescissions		-0.063		
Congressional Increases		2.400		
Reprogrammings	-0.253			
SBIR/STTR Transfer	-0.205			
(U) <u>Significant Program Changes:</u>				
\$2.337M - Congressional add for Green Flag (formerly Air Warrior)				

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604735F Combat Training Ranges				PROJECT NUMBER AND TITLE 2286 Combat Training Range Equipment		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
2286 Combat Training Range Equipment	8.336	16.700	17.657	17.583	17.816	17.794	18.093	18.440	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604735F Combat Training Ranges	PROJECT NUMBER AND TITLE 2286 Combat Training Range Equipment
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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Continue Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems to include the development and testing of: P5 Combat Training Systems (P5CTS) including software/hardware upgrades, and Joint Tactical Radio System (JTRS) compliant data link; aircraft/pod integration and upgrades for range applications; interoperability improvements with existing Air Force and Navy ranges including software, upgrades, weapons simulations, and security improvements; Combat Training Range (CTR) programs basic operating support, system acquisition and engineering support; integration of GREEN FLAG capabilities (previously known as Air Warrior); and advanced range instrumentation standards and capabilities.	7.263	13.888	12.196	12.177
(U) Continue ACTS funding support for Range Threat Systems which includes the development and testing of the Joint Threat Emitter (JTE) System, the Threat Reaction Analysis Indicator System (TRAINS), and program operating, acquisition, and engineering support.	1.073	2.812	5.461	5.406
(U) Total Cost	8.336	16.700	17.657	17.583

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>								
(U) Other Procurement, AF, Combat Training Ranges, 3080 BP83	30.359	36.797	19.854	20.235	20.684	20.985	21.396	21.819	Continuing	TBD
(U) Initial Spares, 3080 BP86	0.832	0.828	0.873	0.896	0.918	0.933	0.951	0.970	Continuing	TBD
(U) Total OPAF, PEC 0207429F	31.191	37.625	20.727	21.131	21.602	21.918	22.347	22.789	Continuing	TBD
(U) Aircraft Procurement, AF, Combat Training Ranges, 3010 BP19	26.918	7.634	15.529	15.780	16.048	16.152	16.495	16.824	Continuing	TBD
(U) Initial Spares, 3010 BP16	1.409	1.168	1.592	1.639	1.678	1.700	1.733	1.768	Continuing	TBD
(U) Total APAF, PEC 0207429F	28.327	8.802	17.121	17.419	17.726	17.852	18.228	18.592	Continuing	TBD

(U) **D. Acquisition Strategy**

The acquisition strategy is competitive, with cost plus and fixed price contracts.

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Exhibit R-3, RDT&E Project Cost Analysis

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05 System Development and Demonstration (SDD)										0604735F Combat Training Ranges		2286 Combat Training Range Equipment			
(U) Cost Categories	Contract	Performing	Total	FY 2006	FY 2006	FY 2007	FY 2007	FY 2008	FY 2008	FY 2009	FY 2009	Cost to	Total Cost	Target	
(Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Method & Type</u>	<u>Activity & Location</u>	<u>Prior to FY 2006 Cost</u>	<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>	<u>Complete</u>		<u>Value of Contract</u>	
(U) <u>Product Development</u>															
Sverdrup (P5CTS)	CPAF			0.122	Mar-06	1.361	Nov-06	1.600	Nov-07	1.817	Nov-09	Continuing	TBD		
Colsa/BTAS Corp (P5CTS)	CPAF			0.329	Oct-05	0.506	Oct-06	0.900	Nov-07	1.028	Nov-09	Continuing	TBD		
Cubic Defense Applications (P5CTS)	CPIF/FFP			1.604	Feb-06	3.838	Feb-07	3.878	Feb-08	2.032	Feb-09	Continuing	TBD		
Standard Research International (P5CTS)	FFP			0.257	Dec-05	0.100	Aug-07	0.160	Feb-08	0.170	Apr-09	Continuing	TBD		
Modern Technologies Corp (JTE)	CPAF			0.051	May-06	2.079	Apr-07	4.643	Mar-08	4.639	Mar-09	Continuing	TBD		
E W Systems (TRAINS)	FFP			0.617	Aug-06	0.352	Jun-07	0.360	Mar-08	0.362	Mar-09	Continuing	TBD		
Rockwell-Collins (P5CTS)	FFP			0.200	Feb-06	2.000	Feb-07	1.300	Feb-08	1.500	Feb-09	Continuing	TBD		
Army JTRS-Cluster 5 (P5CTS)	FFP			0.725	Jan-06	0.700	Feb-07	1.500	Feb-08	1.500	Feb-09	Continuing	TBD		
Navy (P5CTS)	FFP			0.000		0.000						Continuing	TBD		
National Security Agency (NSA)	FFP			0.000		0.245	Feb-07	0.250	Feb-08	0.250	Feb-09	Continuing	TBD		
Quint Networking Tech	FFP					0.100	Mar-07						0.100		
GREEN FLAG (Formerly Air Warrior)	T&M			2.696	Apr-06	2.337	Apr-07						5.033		
Boeing - F15 SPO OFP (P5CTS)	FFP			0.200	Apr-06	0.407	Apr-07	0.450	Apr-08	0.270	Apr-09	Continuing	TBD		
Lockheed - F16 SPO OFP (P5CTS)	FFP			0.000		0.100	Apr-07	0.120	Apr-08	0.360	Apr-09	Continuing	TBD		
Subtotal Product Development			0.000	6.801		14.125		15.161		13.928		Continuing	TBD	0.000	
Remarks:															
(U) <u>Support</u>															
SAF/AQX	Various			0.052		0.800		0.800		0.800		Continuing	TBD		
OO/ALC/LH, Hill AFB, UT	Various			0.353		0.381		0.458		0.405		Continuing	TBD		
AAC/689 ARSS, Eglin AFB, FL	Various			0.881		1.294		1.138		1.450		Continuing	TBD		
Subtotal Support			0.000	1.286		2.475		2.396		2.655		Continuing	TBD	0.000	
Remarks:															
(U) <u>Test & Evaluation</u>															
46 Test Wing, Eglin AFB FL	Various			0.249		0.100		0.100		1.000		Continuing	TBD		
Subtotal Test & Evaluation			0.000	0.249		0.100		0.100		1.000		Continuing	TBD	0.000	
Remarks:															
(U)															
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:															
(U) Total Cost			0.000	8.336		16.700		17.657		17.583		Continuing	TBD	0.000	

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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PROJECT NUMBER AND TITLE
2286 Combat Training Range Equipment

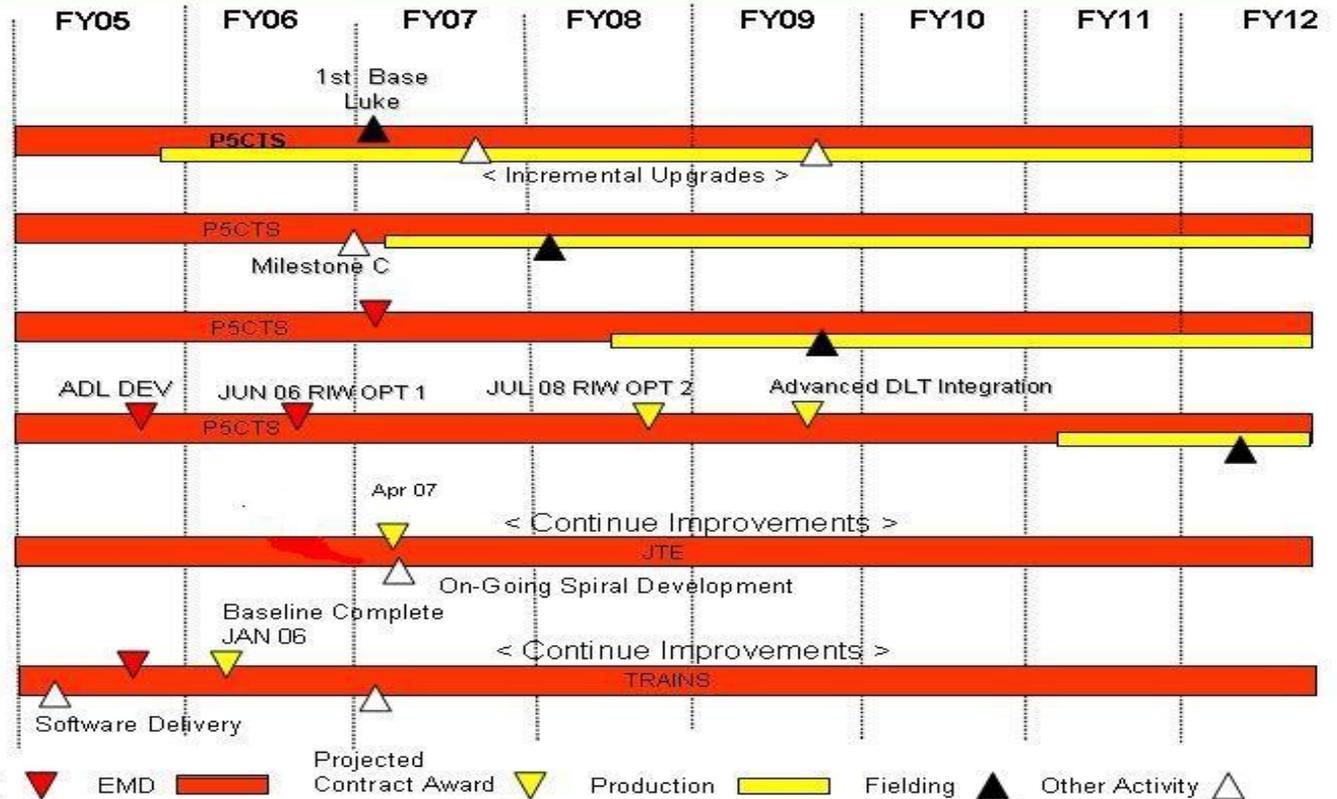


U.S. AIR FORCE

CTR Schedule

P5CTS

P5 Combat Training System
Spiral 1 – NDI System with Incremental Software Updates
Spiral 2 – Internal Subsystem Development
Spiral 3 – Rack Mounted Subsystem
Spiral 4 – Advanced Data Link



JTE

Joint Threat Emitter Program

TRAINS

Threat Reaction Analysis Indicator System

Requirements Definition Actual Contract Award EMD Projected Contract Award Production Fielding Other Activity

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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2007
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(U) <u>Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) P5CTS Development				
(U) - Spiral I (Non-Developmental Item System w/Software Incremental Updates)	1-4Q	1-4Q	1-4Q	1-4Q
(U) - Spiral II (Internal Subsystem Development)	1-4Q	1-4Q	1-4Q	1-4Q
(U) - Spiral III (Rack Mounted Subsystem)		1-4Q	1-4Q	1-4Q
(U) - Spiral IV (Advanced Data Link)	1-4Q	1-4Q	1-4Q	1-4Q
(U) JTE Development				
(U) -- Initial Developmental Contract Award	3Q			
(U) -- Spiral Development and Continue Improvements		3Q	1-4Q	1-4Q
(U) Threat Reaction Analysis Indicator System (TRAINS)				
(U) -- Contract Award	4Q	3Q		
(U) Software Delivery				
(U) -- Continue Improvements	1-4Q	1-4Q		