

**UNCLASSIFIED**

PE NUMBER: 0604735F  
 PE TITLE: Combat Training Ranges

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>May 2009</b>
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<b>BUDGET ACTIVITY</b> <b>05 System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604735F Combat Training Ranges</b>
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	15.541	27.971	29.718	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
2286 Combat Training Range Equipment	15.541	27.971	29.718	0.000	0.000	0.000	0.000	0.000	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 evolutionary upgrades to facilitate live/virtual/constructive connectivity and standardization across all platforms to include coalition, F-22A and F-35 aircraft, and interoperability for joint test/training exercises in varied environments.

The P5 Combat Training System (P5CTS), a collaborative development between USAF and USN, provides air combat training systems for both services at operational locations worldwide. Increments include hardware and software upgrades, an updated Real-Time Operating System, an encrypted Joint Tactical Radio System (JTRS) Advanced Data Link to facilitate interoperability in a multi-level security environment and training with F-22A and F-35, internal pod replacement subsystems, integration of new aircraft Operational Flight Programs, and the development of solutions to enable live virtual constructive capabilities.

This PE also includes the development of advanced threat emitters. The Joint Threat Emitter (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. JTE Increment 1 is currently in production. Consistent with the evolutionary acquisition strategy and documented ACC training requirements, development will continue with Increment 2 to provide a mobile double digit threat capability. Increases beginning in FY10 and extending across the FYDP enables the inclusion of a multi-target tracking capability to meet critical warfighter needs, while ensuring the development schedule meets warfighter development timeline. Future increments will continue to add additional capability to the warfighter's training ranges. This PE includes Legacy Range Threat Systems including Miniature Multiple Threat Emitter Systems-M3P (Mini-MUTES), Multiple Threat Emitter System (MUTES), Modular Threat Emitter (MTE) and Tactical Radar Threat Generator (TRTG) and Unmanned Modular Threat Emitter (UMTE) Systems, which are being considered for modernization that will extend the system's service life and allow for upgrades to antiquated components for increased reliability and capabilities. The FYDP funding allows for evolution of these potential upgrades.

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.

## Exhibit R-2, RDT&amp;E Budget Item Justification

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	17.546	28.047	17.652
(U) Current PBR/President's Budget	15.541	27.971	29.718
(U) Total Adjustments	-2.005	-0.076	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.076	
Congressional Increases			
Reprogrammings	-1.556		
SBIR/STTR Transfer	-0.449		
(U) <u>Significant Program Changes:</u>			
FY10 - \$12.576M in additional funding for P5CTS			

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

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BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE		
<b>05 System Development and Demonstration (SDD)</b>		<b>0604735F Combat Training Ranges</b>						<b>2286 Combat Training Range Equipment</b>		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
2286 Combat Training Range Equipment	15.541	27.971	29.718	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

**(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 evolutionary upgrades to facilitate live/virtual/constructive connectivity and standardization across all platforms to include coalition, F-22A and F-35 aircraft, and interoperability for joint test/training exercises in varied environments.

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BUDGET ACTIVITY <b>05 System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604735F Combat Training Ranges</b>	PROJECT NUMBER AND TITLE <b>2286 Combat Training Range Equipment</b>
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(U) <b><u>B. Accomplishments/Planned Program (\$ in Millions)</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue Air Combat Training Systems (ACTS) funding support for Range Instrumentation Systems to include the development, integration and testing of P5 Combat Training Systems (P5CTS) evolutionary upgrades to provide software/hardware upgrades, aircraft/pod integration, upgrades for range applications, interoperability improvements, encrypted communication, Joint Tactical Radio System (JTRS) compliant Advanced Data Link, 5th generation aircraft interoperability, simulations, security improvements, and interactive live-virtual-constructive capabilities.	10.976	17.449	14.812
(U) Continue Air Combat Training Systems (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), the Unmanned Modular Threat Emitter System (UMTE) and program operating, acquisition and engineering support.	4.565	10.522	14.906
(U) Total Cost	15.541	27.971	29.718

(U) <b><u>C. Other Program Funding Summary (\$ in Millions)</u></b>	<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>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Other Procurement, AF, Combat Training Ranges, 3080 BP83	78.480	40.684	31.474	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Initial Spares, 3080 BP86	0.867	0.887	0.911	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Total OPAF 3080, PEC 0207429F	79.347	41.571	32.372	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Aircraft Procurement, AF, Combat Training Ranges, 3010 BP19	15.424	15.580	15.430	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Initial Spares, 3010 BP16	1.336	1.277	1.663	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Total APAF 3010, PEC 0207429F	16.760	16.857	17.063	0.000	0.000	0.000	0.000	0.000	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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BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
<b>05 System Development and Demonstration (SDD)</b>				<b>0604735F Combat Training Ranges</b>					<b>2286 Combat Training Range Equipment</b>			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u>												
Cubic Defense Applications (P5CTS)	CPIF/FFP		10.029	0.700	Feb-08	4.584	Feb-09	4.777	Feb-10	Continuing	TBD	
SRI (P5CTS)	FFP		1.710	0.160	Feb-08	0.170	Apr-09	0.166	Apr-10	Continuing	TBD	
TBD (JTE Increment 2 )	CPFF		0.000	4.231	Feb-09	10.066	Dec-09	14.502	Feb-10	Continuing	TBD	
Rockwell-Collins, Inc (P5CTS)	FFP		3.097	2.700	Feb-08	2.700	Feb-09	2.000	Feb-10	Continuing	TBD	
Army JTRS-HMS (P5CTS)	FFP		1.925	4.200	Feb-08	6.400	Feb-09	5.000	Feb-10	Continuing	TBD	
National Security Agency (NSA)	FFP		0.245	0.100	Feb-08	0.250	Feb-09	0.200	Feb-10	Continuing	TBD	
Boeing - F15 SPO OFP (P5CTS)	FFP		2.218	0.230	Apr-08	0.260	Apr-09	0.165	Apr-10	Continuing	TBD	
Lockheed - F16 SPO OFP (P5CTS)	FFP		1.621	0.000	Apr-08	0.100	Apr-09	0.100	Apr-10	Continuing	TBD	
Subtotal Product Development			20.845	12.321		24.530		26.910		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
OO/ALC/LH, Hill AFB, UT	Various		1.800	0.334		0.456		0.410		Continuing	TBD	
AAC/689 ARSS, Eglin AFB, FL - Other	Various		12.975	1.006		1.120		1.160		Continuing	TBD	
AAC/689 ARSS, Eglin AFB - Direct Msn Spt	Various		8.211	1.780		1.815		1.188			12.994	
Subtotal Support			22.986	3.120		3.391		2.758		Continuing	TBD	0.000
Remarks:												
(U) <u>Test &amp; Evaluation</u>												
46 Test Wing, Eglin AFB FL	Various		1.089	0.100		0.050		0.050		Continuing	TBD	
Subtotal Test & Evaluation			1.089	0.100		0.050		0.050		Continuing	TBD	0.000
Remarks:												
(U) Total Cost			44.920	15.541		27.971		29.718		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  
0604735F Combat Training Ranges

PROJECT NUMBER AND TITLE  
2286 Combat Training Range Equipment



U.S. AIR FORCE

# CTR Schedule

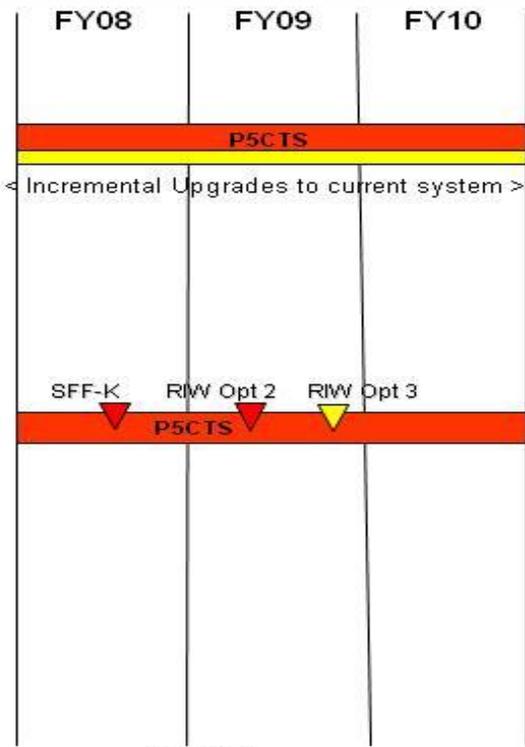
## P5CTS

P5 Combat Training System

Spiral 1 – NDI System with Incremental Software Updates

Spiral 2 & 3 – Internal Subsystem and Rack Mounted Subsystem are Navy development efforts only and are currently on hold .

Spiral 4 – Advanced Data Link (ADL)



Requirements Definition █ Actual Contract Award ▼ EMD █ Projected Contract Award ▼ Production █ Fielding ▲ Other Activity △

Exhibit R-4, RDT&E Schedule Profile

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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



U.S. AIR FORCE

# CTR Schedule

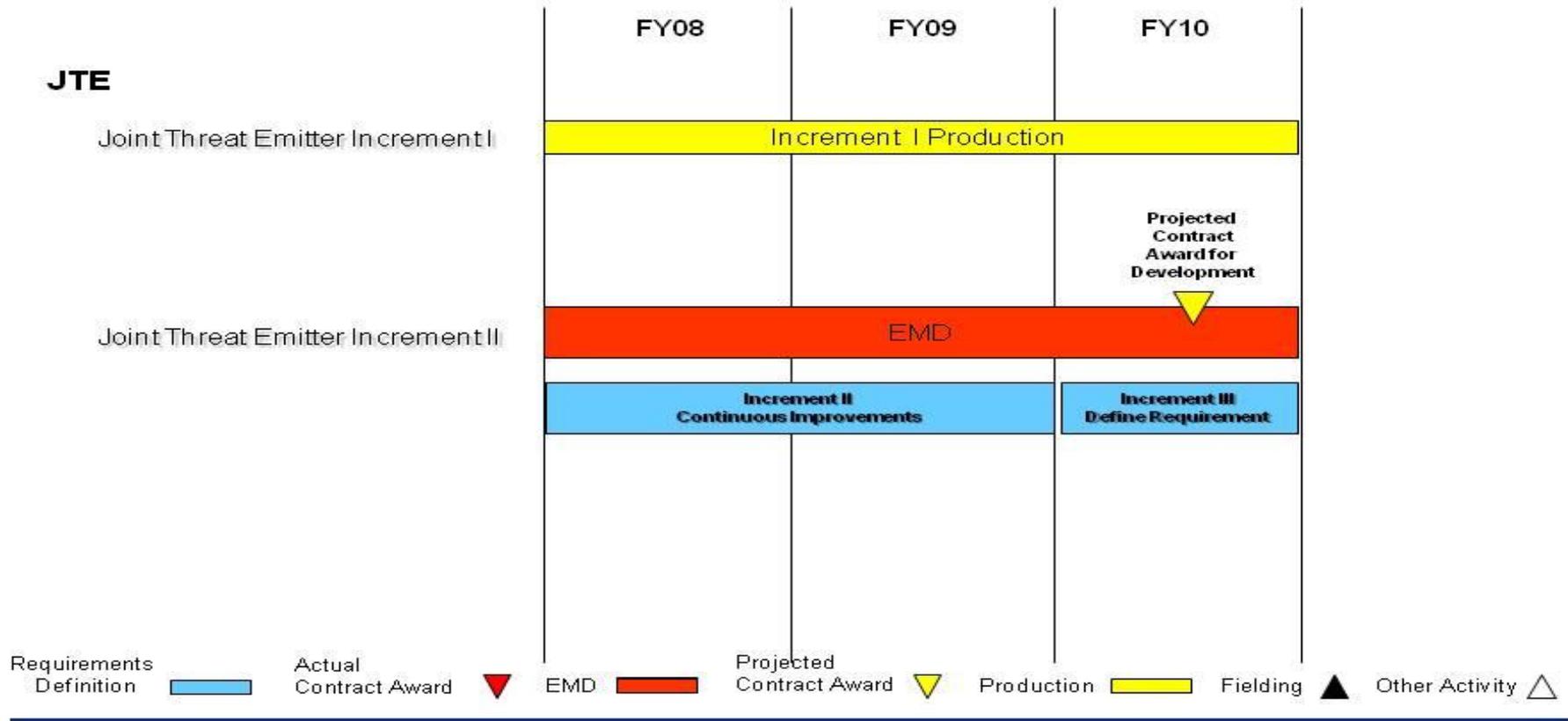


Exhibit R-4a, RDT&E Schedule Detail

DATE

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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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <b>Schedule Profile</b>			
(U) P5CTS Development			
(U) -- Small Form Factor K Radio (SFFK) Contract Award	3Q		
(U) -- Range Instrumentation Waveform (RIW) Contract Award		2Q	
(U) -- Advanced Data Link (ADL) Integration System Requirements Review		3Q	
(U) -- ADL Integration System Functional Review			1Q
(U) -- ADL Integration Preliminary Design Review			3Q
(U) JTE Development			
(U) --AFRL Antenna Risk Reduction		3Q	
(U) -- EMD Contract Award (Inc 2)			2Q