

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force** **DATE:** February 2010

<b>APPROPRIATION/BUDGET ACTIVITY</b>			<b>R-1 ITEM NOMENCLATURE</b>								
3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>			PE 0604735F: <i>Combat Training Ranges</i>								
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	12.241	22.718	36.905	0.000	36.905	29.934	20.389	20.577	20.758	Continuing	Continuing
652286: <i>Combat Training Range Equipment</i>	12.241	22.718	36.905	0.000	36.905	29.934	20.389	20.577	20.758	Continuing	Continuing

**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 realistic 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.

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force** **DATE:** February 2010

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604735F: <i>Combat Training Ranges</i>
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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.

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

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	27.971	29.718	0.000	0.000	0.000
Current President's Budget	12.241	22.718	36.905	0.000	36.905
Total Adjustments	-15.730	-7.000	36.905	0.000	36.905
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-15.730	-7.000	36.905	0.000	36.905

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 652286: *Combat Training Range Equipment*

Congressional Add: *Add to P5CTS budget with a Congressional Earmark for Mountain Home Air to Air Range Improvements.*

Congressional Add Subtotals for Project: 652286

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	0.000	3.000
	0.000	3.000
	0.000	3.000

**Change Summary Explanation**

FY09 reduced -3.405 by Omnibus reprogramming for higher AF priorities

FY09 reduced -6.000 CTR Recission

FY10 change represents -\$10M Congressional adjustment and +3M add for Mt Home AFB

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Air Force								<b>DATE:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0604735F: <i>Combat Training Ranges</i>				<b>PROJECT</b> 652286: <i>Combat Training Range Equipment</i>				
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
652286: <i>Combat Training Range Equipment</i>	12.241	22.718	36.905	0.000	36.905	29.934	20.389	20.577	20.758	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**A. Mission Description and Budget Item Justification**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Air Force							<b>DATE:</b> February 2010				
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0604735F: <i>Combat Training Ranges</i>			<b>PROJECT</b> 652286: <i>Combat Training Range Equipment</i>					
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>											
						<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	
<p><i>FY 2011 Base Plans:</i> In FY 2011: Complete SFF-K development. Complete evaluation, demonstration, and test effort. Deliver production representative hardware to Government.</p> <p><i>FY 2011 OCO Plans:</i> In FY 2011 OCO: N/A</p>											
Accomplishments/Planned Programs Subtotals						12.241	19.718	36.905	0.000	36.905	
						<b>FY 2009</b>	<b>FY 2010</b>				
<p>Congressional Add: Add to P5CTS budget with a Congressional Earmark for Mountain Home Air to Air Range Improvements.</p> <p><i>FY 2009 Accomplishments:</i> In FY 2009: N/A</p> <p><i>FY 2010 Plans:</i> In FY 2010: Add for P5CTS budget with a Congressional Earmark for Mountain Home Air to Air Range Improvements.</p>						0.000	3.000				
Congressional Adds Subtotals						0.000	3.000				
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• PE Not Provided (18755): <i>0207429F, Other Procurement, AF,</i>	40.684	61.170	22.622	0.000	22.622	30.501	36.643	35.269	24.525	0.000	0.000

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604735F: <i>Combat Training Ranges</i>	<b>PROJECT</b> 652286: <i>Combat Training Range Equipment</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
<i>Combat Training Ranges, OPAF BP83</i>											
• PE Not Provided (18767): <i>0207429F, Initial Spares, OPAF BP86</i>	0.887	0.895	0.904	0.000	0.904	0.920	0.936	0.659	0.643	0.000	0.000
<i>• PE Not Provided (18779): 0207429F, Aircraft Procurement, AF, Combat Training Ranges, APAF BP19</i>											
• PE Not Provided (18791): <i>0207429F, Initial Spares, APAF BP16</i>	15.575	15.381	15.376	0.000	15.376	28.990	30.519	22.408	14.552	0.000	0.000
• PE Not Provided (18791): <i>0207429F, Initial Spares, APAF BP16</i>	1.729	1.628	1.638	0.000	1.638	1.346	1.369	8.706	8.868	0.000	0.000

**D. Acquisition Strategy**

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

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Air Force</b>										<b>DATE: February 2010</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0604735F: <i>Combat Training Ranges</i>				<b>PROJECT</b> 652286: <i>Combat Training Range Equipment</i>					

**Product Development (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cubic Defense Applications (P5CTS)	SS/FFP	Cubic Defense San Diego, CA	1.115	0.000		7.746	Mar 2011	0.000		7.746	Continuing	Continuing	0.000
SRI (P5CTS)	SS/FFP	GSA Mid Atl #3, Philadelphia PA	0.206	0.166	Feb 2010	0.166	Feb 2011	0.000		0.166	Continuing	Continuing	0.000
TBD (JTE Increment 2 )	C/CPFF	TBD TBD	1.537	14.121	Aug 2011	17.010	Aug 2011	0.000		17.010	Continuing	Continuing	0.000
Legacy L1 Upgrade	TBD/TBD	TBD TBD	2.136	0.000		0.000		0.000		0.000	0.000	2.136	0.000
Rockwell-Collins, Inc (P5CTS)	SS/CPFF	Rockwell-Collins, Inc Cedar Rapids, IA	0.000	4.400	Feb 2010	4.000	Feb 2011	0.000		4.000	Continuing	Continuing	0.000
Army Joint Tactical Radio System (JTRS-HMS) (P5CTS)	SS/CPAF	General Dynamics Scottsdale AZ	5.300	0.752	Feb 2010	4.398	Feb 2011	0.000		4.398	Continuing	Continuing	0.000
National Security Agency (NSA)	SS/FFP	NSA Ft George G. Meade, MD 20755	0.200	0.265	Feb 2010	0.250	Feb 2011	0.000		0.250	Continuing	Continuing	0.000
Boeing - F15 SPO OFF (P5CTS)	SS/FFP	Boeing St Louis, MO	0.000	0.000		0.100	Apr 2011	0.000		0.100	Continuing	Continuing	0.000
Lockheed - F16 SPO OFF (P5CTS)	SS/FFP	Lockheed Martin Ft Worth, TX	0.000	0.050	Apr 2010	0.100	Apr 2011	0.000		0.100	Continuing	Continuing	0.000
Booz Allen Hamilton (P5CTS)	SS/FFP	Booz Allen Hamilton Mclean, VA	0.353	0.150	May 2010	0.000		0.000		0.000	0.000	0.503	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force** **DATE:** February 2010

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**Product Development (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Weapons Sim Interface Upg	SS/FFP	Milted Corp Huntsville AL	0.191	0.000		0.000		0.000		0.000	0.000	0.191	0.000
JTRS Test and Evaluation Lab (JTEL)	SS/FFP	SPAWARSYCEN San Diego, CA	0.000	0.131	Jan 2010	0.000		0.000		0.000	0.000	0.131	0.000
Congressional Earmark - Range Improvements for MT (P5CTS)	TBD/TBD	TBD Mt Home	0.000	1.000		0.000		0.000		0.000	0.000	1.000	0.000
<b>Subtotal</b>			11.038	21.035		33.770		0.000		33.770			0.000

**Remarks**

**Support (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OO/ALC/LH, Hill AFB, UT	Various/ Various	TBD TBD	0.397	0.785		0.885		0.000		0.885	Continuing	Continuing	0.000
AAC/689 ARSS, Eglin AFB - Direct Msn Spt	Various/ Various	TBD TBD	0.631	0.723		2.100		0.000		2.100	0.000	3.454	0.000
<b>Subtotal</b>			1.028	1.508		2.985		0.000		2.985			0.000

**Remarks**

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**Test and Evaluation (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block I/II Flight Test, 46 Test Wing	Various/ Various	Eglin AFB FL	0.175	0.175	Mar 2010	0.150	Mar 2011	0.000		0.150	Continuing	Continuing	0.000
<b>Subtotal</b>			0.175	0.175		0.150		0.000		0.150			0.000

**Remarks**

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
	12.241	22.718		36.905		0.000		36.905			0.000

**Remarks**

Total Prior Years Cost may include only FY 2009 data.

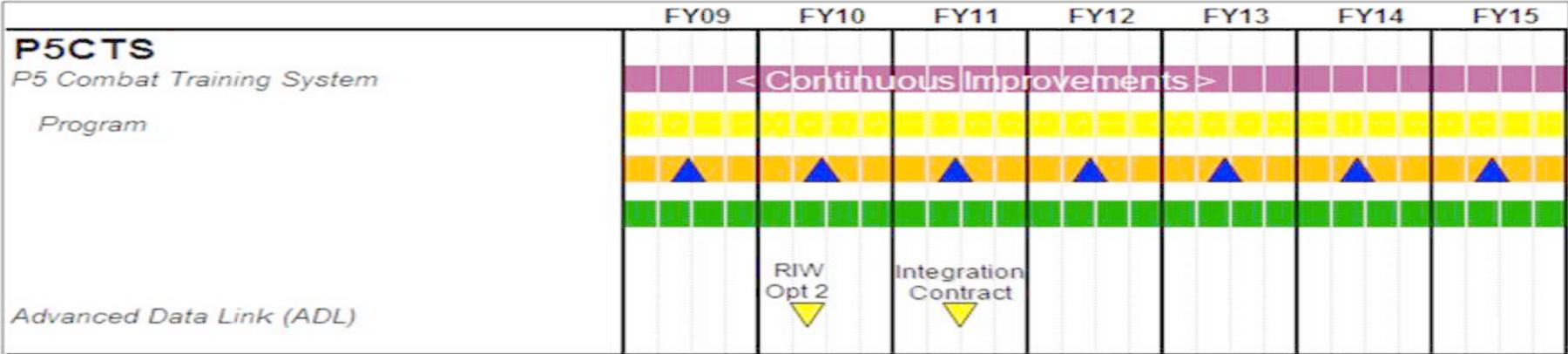
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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2011 Air Force</b>		<b>DATE:</b> February 2010
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# CTR Schedule



- Concept activities
- Design / development
- Integration / test
- Production / fielding
- Operations / sustainment
- Annual Pod Buys
- Actual Contract Award
- Projected Contract Award

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force  
BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

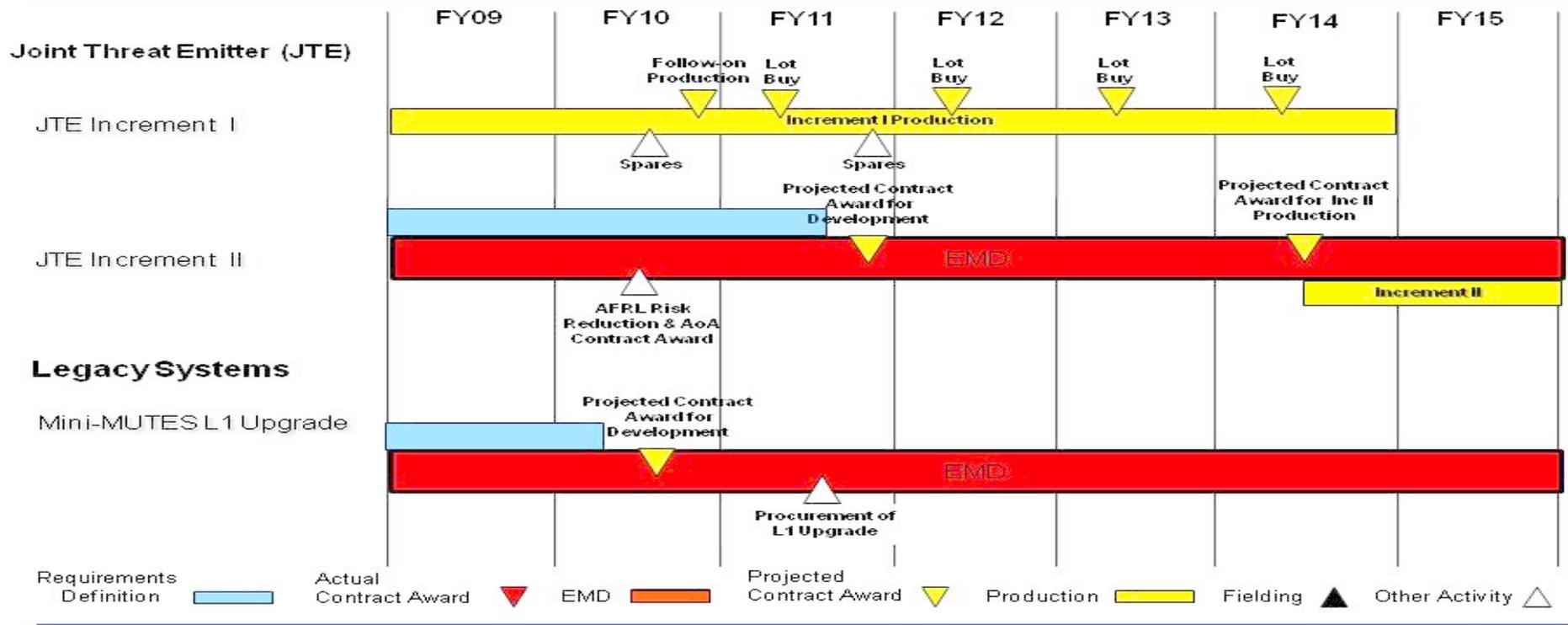
PE 0604735F: Combat Training Ranges

PROJECT

652286: Combat Training Range Equipment



# CTR Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2011 Air Force		<b>DATE:</b> February 2010
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
-- Small Form Factor K Radio (SFFK) Contract annual Award	2	2009	2	2011
-- Range Instrumentation Waveform (RIW) Task 3	2	2010	2	2010
-- Advanced Data Link (ADL) Integration System Requirements Review	2	2011	2	2011
--Air Force Research Laboratory (AFRL) Antenna Risk Reduction	3	2009	2	2010
--Air Force Research Laboratory (AFRL) Antenna Risk Reduction (1)	3	2010	3	2011
--Analysis of Alternative (AoA)	3	2010	1	2011
--Engineering and Manufacturing Development (EMD) Increment II	4	2011	4	2011
--Mini-MUTES L1 Upgrade	3	2010	3	2011

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