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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0207601F: USAF Modeling and Simulation							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	28.062	27.161	21.638	0.000	21.638	24.830	24.074	24.753	25.947	Continuing	Continuing
674567: M&S Foundations	5.856	6.185	5.976	0.000	5.976	6.266	6.363	6.459	6.554	Continuing	Continuing
674991: Accelerated Acquisitions	4.754	5.146	4.676	0.000	4.676	5.252	5.332	5.413	5.493	Continuing	Continuing
675135: Warfighter Readiness	17.452	15.830	10.986	0.000	10.986	13.312	12.379	12.881	13.900	Continuing	Continuing

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

United States Air Force (USAF) Modeling & Simulation (M&S) Program Element (PE) is broken into four thrust areas: Modeling and Simulation Foundations, Accelerated Acquisition, New and Emerging Warfighting Capabilities, and Warfighter Readiness. It directly supports Air Force, Joint, Coalition composite training and rehearsal, concept development, and acquisition and testing through model and simulation development; as well as the integration of these across and within Live, Virtual, and Constructive (LVC) environments. This program focuses on support of Department of Defense (DoD) Training Transformation (T2), acquisition excellence initiatives, and foundational capabilities needed for interoperability, accessibility, reuse, and scalability. It allows the authoritative portrayal of new and emerging Air Force capabilities within Army, Navy, Marines, OSD, interagency, and coalition LVC environments; as well as reciprocating their capabilities within our Air Force LVC environments. LVC environments today are used as the most cost effective means to meet mission needs, the most practical means, and sometimes the only way.

In support of the DoD T2 initiative, USAF M&S program thrust areas develop and modernize models and simulations that are the constructive backbone of Air Force and Joint Training and Rehearsal. Once these models and simulations are developed, they are integrated across training LVC environments for use by Major and Combatant Commands. This development and integration is imperative to ensure that air, space, and cyberspace training and mission rehearsal activities are supported with realistic, interoperable, and readily available tools, data, and services. These, in turn, enable joint, coalition, and interagency training required to prepare forces for combat by generating the air and space picture for the Air and Space Operations Center (AOC), Joint Force Air Component Commander (JFACC), and Joint Force Commander in combat exercises; training over 30,000 personnel per year in exercises (e.g., Ulchi Freedom Guardian, Red & Blue Flags, Unified Endeavor, etc). These programs also provide the current foundational environment that enables warfighters to interact with high-fidelity tactical cockpit simulators, like 5th Gen and beyond, which replicate High Demand/Low Density platforms that are often unavailable for training due to real-world operations; while simultaneously linking it to warfighters using their current command and control systems 1,000 miles away and the constructive simulations being run from key operational wargaming and simulation centers worldwide. USAF M&S is integral to inter-agency Homeland Defense exercises chartered to train combat units tasked to protect the Homeland, including the National Capital Region (exercise Amalgam Arrow); generates equipment and manpower efficiencies by using simulations which reduce fuel consumption, aircraft wear and tear, and manpower costs.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2011 Air Force	<b>DATE:</b> February 2010
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>
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In support of the DoD drive to improve the effectiveness and efficiency of its enterprise-wide acquisition business processes, the USAF M&S PE develops and supports enhancements to models, simulations, tools, and the LVC infrastructure to provide for system-of-systems M&S capabilities across the lifecycle, reduce developmental costs, and minimize risks. These capabilities support the acquisition process from concept development through test and evaluation.

This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.

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

	<b><u>FY 2009</u></b>	<b><u>FY 2010</u></b>	<b><u>FY 2011 Base</u></b>	<b><u>FY 2011 OCO</u></b>	<b><u>FY 2011 Total</u></b>
Previous President's Budget	28.866	27.245	0.000	0.000	0.000
Current President's Budget	28.062	27.161	21.638	0.000	21.638
Total Adjustments	-0.804	-0.084	21.638	0.000	21.638
• 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	-0.804	-0.084	21.638	0.000	21.638

## **Change Summary Explanation**

The change between the FY 2011 President's previous and current budget is due to a reprogramming adjustments to meet higher Air Force priorities.

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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 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>				<b>PROJECT</b> 674567: <i>M&amp;S Foundations</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>
674567: <i>M&amp;S Foundations</i>	5.856	6.185	5.976	0.000	5.976	6.266	6.363	6.459	6.554	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
<b>A. Mission Description and Budget Item Justification</b> <p>Modeling and Simulation Foundations (MSF) focuses on integrating foundational capabilities needed to improve the usefulness, productivity, scalability and efficiency of Modeling and Simulation (M&amp;S) capabilities derived from the Warfighter Readiness (WR) thrust, the Accelerated Acquisitions (AA) thrust, and the New and Emerging Warfighting Capabilities (NEWC) thrust. MSF are the: standards, policies, procedures, architectures, and tools that enable the rapid and efficient composition of distributed environments to support both the warfighter needs and the US Air Force's (USAF) functional communities of: acquisition, training, planning, analysis, testing, training, education, and experimentation requirements. The efforts supporting the M&amp;S Foundations thrust include both concept exploration and development. Activities also include studies and analysis to support both current program planning and execution and future program planning. This also funds the USAF in its capacity as the Department of Defense (DoD) Modeling and Simulation Executive Agent (MSEA) for the Aerospace Natural Environment.</p> <p>MSF's objective is to establish a USAF Live-Virtual-Constructive-Integrated Architecture (LVC-IA) that provides a persistent network of constructive computer simulations, man-in-the-loop virtual simulators, and live forces/resources in an interoperable environment that supports USAF organizations and the functional communities. This objective will be achieved by MSF providing tools, standards and interfaces to be used by model developers and users to ensure efficiencies and model reuse. MSF provides the capability to rapidly and efficiently create realistic and accurate synthetic operational battlespaces to support the full spectrum of activities associated with concept development to acquisition and testing through composite training and mission rehearsal. This is done by providing appropriate authoritative data and component representations. With the capability generated via MSF, users will readily access available repositories of reusable, validated, and integrated synthetic components. Synthetic components include representations of operational battlespace entities (such as friendly and enemy assets) and representations of the natural environment that include the terrain, atmospheric and space weather effects; and energy and signal propagation effects. The rapid composition is based on a durable common architecture framework, policies, and common standards. MSF capability also supports: efficient, cost-effective verification, validation, and accreditation activity across all of the M&amp;S functional and organizational communities.</p> <p>As the DoD Air and Space Natural Environment Modeling and Simulation Executive Agent (ASNE MSEA), the Air Force coordinates all aspects of DoD M&amp;S related to representations of the air and space natural environment. The tools developed through this include the Environmental Scenario Generator, the Environmental Data Cube Support System, and the Space Weather Analysis. ASNE MSEA collaborates with other national partners to provide the USAF and DoD access to authoritative natural environment scenarios necessary for robust "What-if" mission planning and rehearsal and for realistic training, analysis, and acquisition. ASNE MSEA leads the development and execution of the DoD Integrated Natural Environment Authoritative Representation Process (INEARP) Concept of Operations.</p>											

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This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.						
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: M&S Foundations (MSF) Concept exploration/model development/model transition (LVC-IA, M&S Workforce)  FY 2009 Accomplishments: In FY 2009: Continued to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continued development of the Scenario Generation System, Cross Domain Solutions for USAFE and information operations modeling and simulation capabilities.  FY 2010 Plans: In FY 2010: Continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continue development of the Scenario Generation System.  FY 2011 Base Plans: In FY 2011: Will continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Will continue development of the Scenario Generation System. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.  FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.		4.881	5.190	4.985	0.000	4.985
MAJOR THRUST: Provide DoD M&S community with tools to search Air & Space Natural Environment (ASNE) scenarios; measure effects on weapon systems and subsystems and distribute tailored reusable dat...		0.975	0.995	0.991	0.000	0.991

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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 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>			<b>PROJECT</b> 674567: <i>M&amp;S Foundations</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>	
<i>FY 2009 Accomplishments:</i> In FY 2009: Continued to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continued development of the Air and Space Natural Environment (ASNE) capabilities.											
<i>FY 2010 Plans:</i> In FY 2010: Continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continue development of the Air and Space Natural Environment (ASNE) capabilities.											
<i>FY 2011 Base Plans:</i> In FY 2011: Will continue to certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Will continue development of the Air and Space Natural Environment (ASNE) capabilities. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.											
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.											
Accomplishments/Planned Programs Subtotals						5.856	6.185	5.976	0.000	5.976	
<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 (4221): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>D. Acquisition Strategy</b>											
OAS, Kirtland AFB, NM manages the acquisition and model's incremental development process for all M&S Foundation activities. All major contracts will be awarded after full and open competition.											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Air Force		<b>DATE:</b> February 2010
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### 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:</b> PB 2011 Air Force											<b>DATE:</b> February 2010		
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 <b>Product Development (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Concept Refinement, Technology, services, and tools support	Various/ Various	Various Various	4.881	5.190	Oct 2009	4.985	Oct 2010	0.000		4.985	Continuing	Continuing	Continuing
ASNE (Services, Tools, and Environmental support)	Various/ Various	Various Various	0.975	0.995	Oct 2009	0.991	Oct 2010	0.000		0.991	Continuing	Continuing	Continuing
<b>Subtotal</b>			5.856	6.185		5.976		0.000		5.976			
<b>Remarks</b>													
			<b>Total Prior Years Cost</b>	<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			5.856	6.185		5.976		0.000		5.976			
<b>Remarks</b> Total Prior Years Cost may include only FY 2009 data.													

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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 7: *Operational Systems Development*

**R-1 ITEM NOMENCLATURE**

PE 0207601F: *USAF Modeling and Simulation*

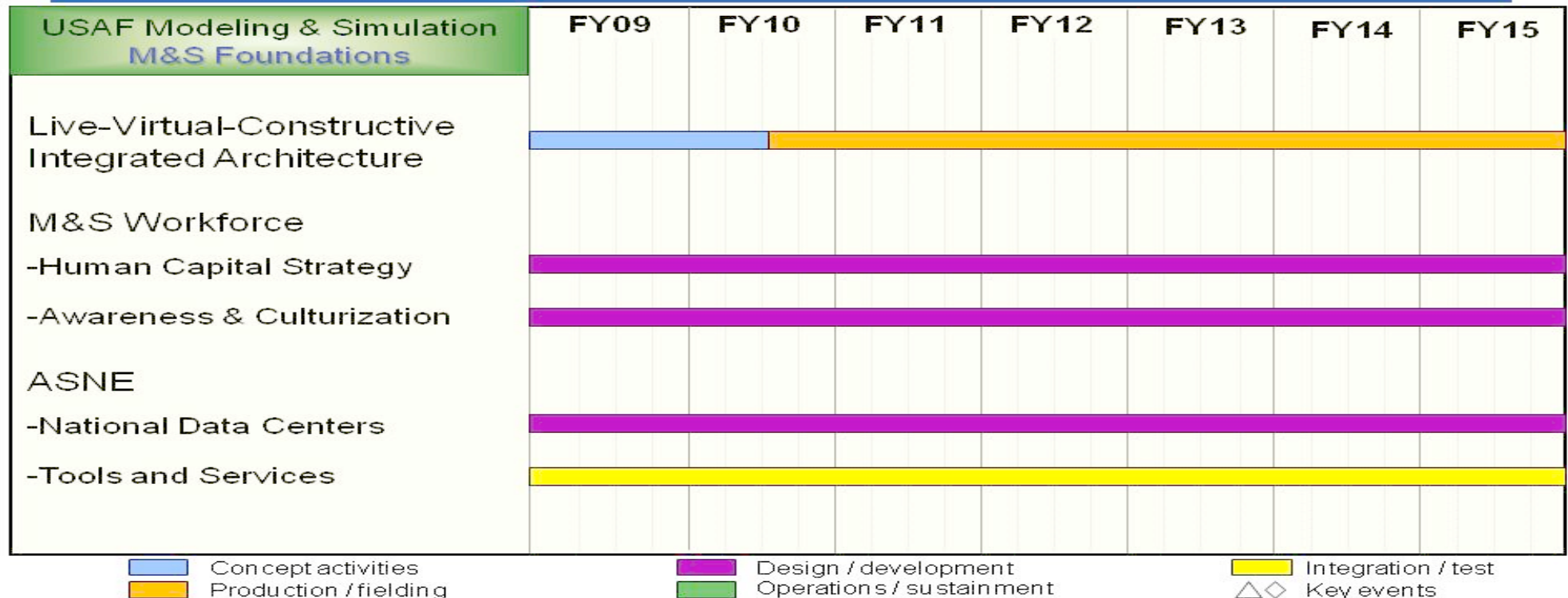
**PROJECT**

674567: *M&S Foundations*



## ***PE 27601F – USAF Modeling & Simulation M&S Foundations (Project 4567) Schedule***

**U.S. AIR FORCE**



***Integrity - Service - Excellence***

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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
Live-Virtual-Constructive Integrated Architecture	1	2009	4	2011
M&S Workforce (Human Capital Strategy/Awareness & Culturization)	1	2009	4	2011
ASNE (National Data Centers/Tools and Services)	1	2009	4	2011

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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674991: Accelerated Acquisitions	4.754	5.146	4.676	0.000	4.676	5.252	5.332	5.413	5.493	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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

Accelerated Acquisition (AA) focuses on fostering M&S tools, data, and infrastructure to enable high confidence acquisition of capabilities to support the joint warfighter. This includes Live-Virtual-Constructive (LVC) infrastructure, tools and processes supporting LVC events, and models, tools, data, simulations/stimulation to support requirements definition, systems engineering and test activities. Activities also include M&S support for studies and analysis to support both current program planning and execution and future program planning. These efforts will enable more efficient delivery of effective capabilities to the warfighter while reducing the time and resources required for design, development, test and evaluation, maintainability and sustainment.

A key objective is to improve interoperability of weapon systems and platforms through continuing, rigorous interoperability evaluation in a representative Joint Mission Environment. Additionally, AA activities seek to reduce risk associated with acquisition programs by influencing models, simulations, tools, data and infrastructure linking combat system engineering sites to facilitate concept exploration, development and assessment of systems in a net-centric mission context.

This provides the capability to improve both Service and Joint system performance in a system-of-systems environment. Connectivity established by the infrastructure builds upon existing Service and Joint combat system engineering and test sites, such as C4I hardware in the loop and computer-program-in-the-loop engineering sites (including design activities, software support activities, test & evaluation facilities and training commands). Development includes concept of operations, business rules, and procedures to enable acquisition managers to effectively use LVC capabilities.

These efforts enable accurately represented Command, Control, Communications, Computer, and Intelligence (C4I) networks for capability requirement definition, development, and testing activities to evaluate those systems for interoperability and integration into a joint environment. This will address interoperability issues by providing a means for discovering issues early on.

This project is in Budget Activity 7 - Operational System Development because it enhances operational system developments.

**B. Accomplishments/Planned Program (\$ in Millions)**

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue communications architectures and network support		0.150	0.147	0.155	0.000	0.155
<i>FY 2009 Accomplishments:</i> In FY 2009: Supported the development and maturation of collaborative processes and capabilities to support systems-of-systems assessments through modeling and simulation. This included: joint network collaboration capabilities, infrared capability, airborne network data-link representations, radio frequency jamming, requirements tractability processes and execution and analysis of a large partner air network assessment event.						
<i>FY 2010 Plans:</i> In FY 2010: Continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture.						
<i>FY 2011 Base Plans:</i> In FY 2011: Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).						
<i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Continue to support LVC events to assist in Air Force requirements definition, development and T&E activities		0.225	0.221	0.225	0.000	0.225

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: In FY 2009: Supported the development and maturation of collaborative processes and capabilities to support systems-of-systems assessments through modeling and simulation. This included: joint network collaboration capabilities, infrared capability, airborne network data-link representations, radio frequency jamming, requirements tractability processes and execution and analysis of a large partner air network assessment event.						
FY 2010 Plans: In FY 2010: Continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture.						
FY 2011 Base Plans: In FY 2011: Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).						
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Develop, enhance and verify models, tools, data, simulations/stimulation environments for systems engineering and test activities		3.591	4.003	3.505	0.000	3.505
FY 2009 Accomplishments: In FY 2009: Supported the development and maturation of collaborative processes and capabilities to support systems-of-systems assessments through modeling and simulation. This included: joint						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
network collaboration capabilities, infrared capability, airborne network data-link representations, radio frequency jamming, requirements tractability processes and execution and analysis of a large partner air network assessment event.  FY 2010 Plans: In FY 2010: Continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture.  FY 2011 Base Plans: In FY 2011: Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).  FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Continue to support Joint Service integration & test  FY 2009 Accomplishments: In FY 2009: Supported the development and maturation of collaborative processes and capabilities to support systems-of-systems assessments through modeling and simulation. This included: joint network collaboration capabilities, infrared capability, airborne network data-link representations, radio frequency jamming, requirements tractability processes and execution and analysis of a large partner air network assessment event.		0.788	0.775	0.791	0.000	0.791

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<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>	
<b>FY 2010 Plans:</b> In FY 2010: Continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture.											
<b>FY 2011 Base Plans:</b> In FY 2011: Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.).											
<b>FY 2011 OCO Plans:</b> In FY 2011 OCO: Not Applicable.											
Accomplishments/Planned Programs Subtotals						4.754	5.146	4.676	0.000	4.676	
<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 (4443): Activity Not Provided	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>D. Acquisition Strategy</b>											
SAF/XC provides oversight of the Accelerated Acquisition project. Various Air Force activities incrementally develop, verify, and validate models, tools, data and simulations/simulation environments. All major contracts will be awarded after full and open competition.											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674991: <i>Accelerated Acquisitions</i>
<p><b>E. Performance Metrics</b></p> <p>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.</p>		

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Air Force</b>											<b>DATE:</b> February 2010		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>				<b>PROJECT</b> 674991: <i>Accelerated Acquisitions</i>					
 <b>Product Development (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Architecture & Links	Various/ Various	Various Various	0.150	0.147	Nov 2009	0.155	Nov 2010	0.000		0.155	Continuing	Continuing	Continuing
Event Coordination	Various/ Various	Various Various	0.225	0.221	Nov 2009	0.225	Nov 2010	0.000		0.225	Continuing	Continuing	Continuing
Model, Tool, Data, Simulation Development & Verification	Various/ Various	Various Various	3.591	4.003	Nov 2009	3.505	Nov 2010	0.000		3.505	Continuing	Continuing	Continuing
Joint Service Integration	Various/ Various	Various Various	0.788	0.775	Nov 2009	0.791	Nov 2010	0.000		0.791	Continuing	Continuing	Continuing
<b>Subtotal</b>			4.754	5.146		4.676		0.000		4.676			
<b>Remarks</b>													
			<b>Total Prior Years Cost</b>	<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			4.754	5.146		4.676		0.000		4.676			
<b>Remarks</b> Total Prior Years Cost may include only FY 2009 data.													

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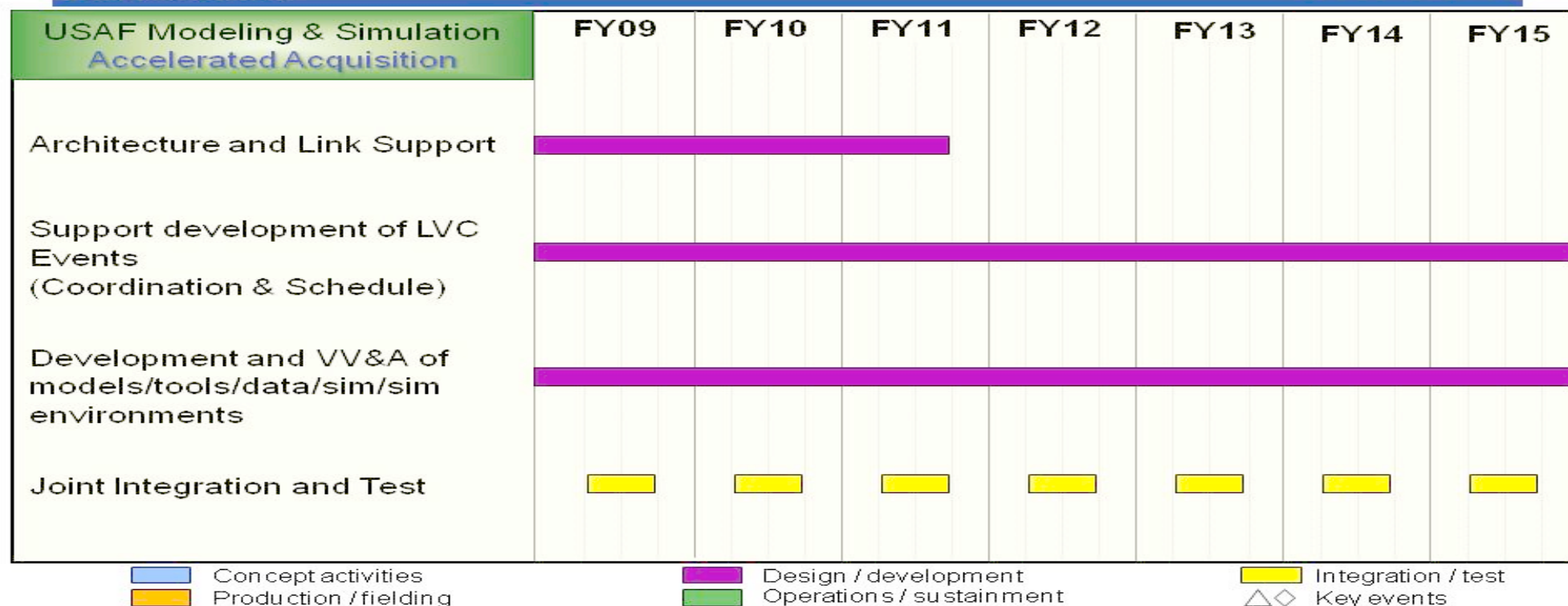
Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force DATE: February 2010

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: USAF Modeling and Simulation	<b>PROJECT</b> 674991: Accelerated Acquisitions
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## PE 27601F – USAF Modeling & Simulation Accelerated Acquisition (Project 4991) Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</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 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>	<b>PROJECT</b> 674991: <i>Accelerated Acquisitions</i>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Architecture & Link Support	1	2009	3	2011
Event development of LVC Events	1	2009	4	2011
Development and VV&A of models, tools, data, simulation/stimulation environments	1	2009	4	2011
Joint Integration & Test	2	2009	3	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0207601F: USAF Modeling and Simulation				PROJECT 675135: Warfighter Readiness			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675135: Warfighter Readiness	17.452	15.830	10.986	0.000	10.986	13.312	12.379	12.881	13.900	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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

Modeling and Simulation support to our Warfighter's Readiness is a United States Air Force (USAF) corporate imperative to ensure air, space, cyberspace training, and mission rehearsal activities are supported with realistic, interoperable, and readily available, tools, data, services and environments. Warfighter Readiness supports Department of Defense (DoD) Training Transformation (T2) and Joint National Training Capability (JNTC) along with the USAF priorities and core functions. It includes several complimentary programs, initiatives and areas for investment:

Warfighter and Joint Training Integration supports the Chief of Staff of the Air Force (CSAF) directed Live-Virtual-Constructive (LVC) Integration efforts and is a critical piece to the USAF's implementation of the Strategic Plan for Transforming DoD Training. The goal of LVC training and mission rehearsal is to prepare our warfighters for the full range of military operations and maintain the combat readiness levels required by the Combatant Commands (COCOMs). This can only be accomplished by training and rehearsing in realistic operational environments. These environments include live training ranges and virtual simulators enhanced with constructive entities. Specific training and mission rehearsal events can include some or all of these simultaneously; making the ability to integrate LVC capabilities a necessity.

The Air, Space, and Cyberspace Constructive Environment (ASCCE) is the USAF's authoritative federation of constructive training models and tools realistically representing the tactical and operational capabilities the USAF brings to the Joint fight. It includes:

1) The Air Force Modeling and Simulation Training Toolkit (AFMSTT), which provides the authoritative representation of Air Force and Joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and COCOM battle staffs. The primary model in the AFMSTT is the Air Warfare Simulation (AWSIM).

2) The Information Operations Suite (IOS), which provides the authoritative representation of Air Force information operations. IOS is comprised of a suite of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during Joint and Service exercises and experimentations.

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0207601F: USAF Modeling and Simulation		PROJECT 675135: Warfighter Readiness				
Other capabilities, such as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) provide for Intelligence, Surveillance, and Reconnaissance (ISR) training and exercise support by using virtual simulators and constructive models for command and staff level training. These capabilities provide commanders, staffs, and operators with common training systems for the employment, tasking, exploitation and dissemination of imagery.								
The Joint Training Transformation Initiative (JTTI) is a CSAF and Chief of Staff of the Army initiative to improve air, space, and cyberspace power fidelity to the Battle Command Training Program (BCTP), a US Army training event for senior commanders and their staffs, as well as improving ground component fidelity to AF operational-level exercises.								
This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.								
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: AFMSTT Modernization/IOS (Air Warfare Simulation (AWSIM))				11.041	9.101	9.486	0.000	9.486
FY 2009 Accomplishments: In FY 2009: Continued to maintain and improve the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. Continued the development of USNORTHCOM/NORAD, and NORTHAF Distributed Mission Operations (DMO) capabilities. Additionally, continued development of Space DMO and Next Generation Threat Systems.								
FY 2010 Plans: In FY 2010: Continue to maintain, improve, certify, and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. Continue development of USNORTHCOM/NORAD, and NORTHAF Distributed Mission Operations (DMO) capabilities.								
FY 2011 Base Plans: In FY 2011: Will continue to maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals.								

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207601F: USAF Modeling and Simulation	PROJECT 675135: Warfighter Readiness			
B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: DMOI/Warfighter & Joint Training Integration (JTII)  FY 2009 Accomplishments: In FY 2009: Continued to maintain and improve the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. Continued the development of USNORTHCOM/NORAD, and NORTHAF Distributed Mission Operations (DMO) capabilities. Additionally, continued development of Space DMO and Next Generation Threat Systems.  FY 2010 Plans: In FY 2010: Continue to maintain, improve, certify, and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. Continue development of USNORTHCOM/NORAD, and NORTHAF Distributed Mission Operations (DMO) capabilities.  FY 2011 Base Plans: In FY 2011: Will continue to maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals.  FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.	6.411	6.729	1.500	0.000	1.500
Accomplishments/Planned Programs Subtotals	17.452	15.830	10.986	0.000	10.986

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force										DATE: February 2010	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>				<b>PROJECT</b> 675135: <i>Warfighter Readiness</i>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
			<b>FY 2011</b>	<b>FY 2011</b>	<b>FY 2011</b>					<b>Cost To</b>	
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>Base</b>	<b>OCO</b>	<b>Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Complete</b>	<b>Total Cost</b>
• PE Not Provided (4638): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>D. Acquisition Strategy</b> Electronic Systems Center (ESC) at Hanscom AFB, MA manages the Warfighter Readiness project. ESC incrementally develops, verifies and validates models, tools, data and simulations/simulation environments. All major contracts are awarded after full and open competition.											
<b>E. Performance Metrics</b> 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:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>					<b>PROJECT</b> 675135: <i>Warfighter Readiness</i>				
<b>Product Development (\$ in Millions)</b>														
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>				
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
AFMSTT Modernization/ IOS (Air Warfare Simulation (AWSIM))	Various/ Various	ESC Hanscom AFB, MA	11.041	9.101	Dec 2009	9.486	Dec 2010	0.000		9.486	Continuing	Continuing	Continuing	
DMOI/Warfighter & Joint Training Integration/JTTI	Various/ Various	ESC Hanscom AFB, MA	6.411	6.729	Dec 2009	1.500	Dec 2010	0.000		1.500	Continuing	Continuing	Continuing	
<b>Subtotal</b>			17.452	15.830		10.986		0.000		10.986				
<b>Remarks</b>														
			<b>Total Prior Years Cost</b>	<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>			17.452	15.830		10.986		0.000		10.986				
<b>Remarks</b> Total Prior Years Cost may include only FY 2009 data.														

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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 7: Operational Systems Development

**R-1 ITEM NOMENCLATURE**

PE 0207601F: USAF Modeling and Simulation

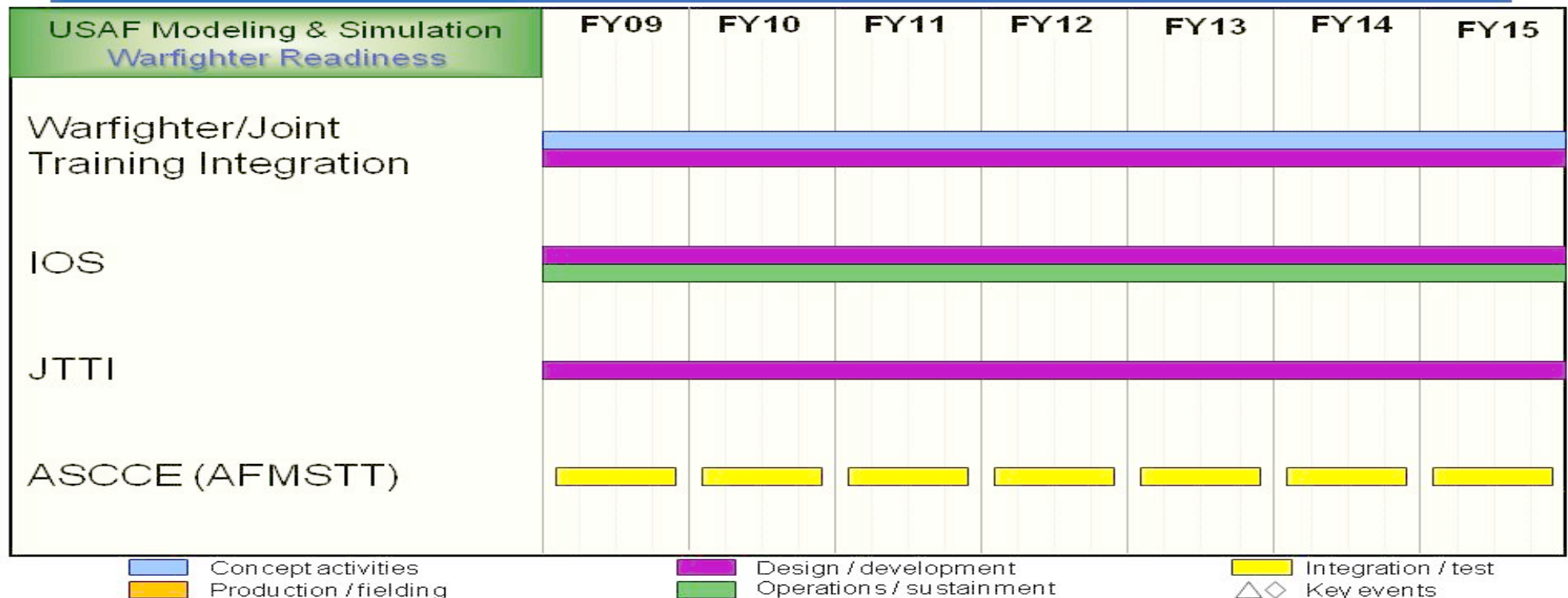
**PROJECT**

675135: Warfighter Readiness



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# PE 27601F – USAF Modeling & Simulation Warfighter Readiness (Project 5135) Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</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 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0207601F: <i>USAF Modeling and Simulation</i>	<b>PROJECT</b> 675135: <i>Warfighter Readiness</i>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Warfighter/Joint Training Integration	1	2009	4	2011
IOS	1	2009	4	2011
JTTI	1	2009	4	2011
ASCCE (AFMSTT)	1	2009	4	2011

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