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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0207601F: <i>USAF Modeling and Simulation</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	26.221	21.638	23.091	-	23.091	20.928	21.407	21.871	22.139	Continuing	Continuing
674567: <i>M&S Foundations</i>	5.941	5.976	6.488	-	6.488	6.578	6.622	6.522	6.637	Continuing	Continuing
674991: <i>Accelerated Acquisitions</i>	4.617	4.676	5.235	-	5.235	5.308	5.388	5.466	5.563	Continuing	Continuing
675004: <i>New and Emerging Capabilities</i>	-	-	1.351	-	1.351	-	-	-	-	Continuing	Continuing
675135: <i>Warfighter Readiness</i>	15.663	10.986	10.017	-	10.017	9.042	9.397	9.883	9.939	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. 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 this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	27.161	21.638	24.830	-	24.830
Current President's Budget	26.221	21.638	23.091	-	23.091
Total Adjustments	-0.940	-	-1.739	-	-1.739
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.826	-			
• Other Adjustments	-0.114	-	-1.739	-	-1.739

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
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			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674567: M&S Foundations	5.941	5.976	6.488	-	6.488	6.578	6.622	6.522	6.637	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<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&S) capabilities derived from the Warfighter Readiness (WR) thrust, the Accelerated Acquisitions (AA) thrust, and the New and Emerging Warfighting Capabilities (NEWC) thrust. MSF is 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 MSF 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. 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&S functional and organizational communities. As the DoD Air and Space Natural Environment Modeling and Simulation Executive Agent (ASNE MSEA), the Air Force coordinates all aspects of DoD M&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>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: M&S Foundations (LVC-IA/M&S Workforce)							4.946	4.985	5.493	-	5.493
Description: Provide M&S Foundations (MSF) support to: Live, Virtual, and Constructive(LVC) - Integrating Architecture (IA), M&S Workforce, concept exploration, model development, and model transition effort.											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011				
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		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continue development of the Scenario Generation System.						
FY 2011 Plans: Certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and development of the Scenario Generation System. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.						
FY 2012 Base Plans: Certifies and accredits the Air, Space, and Cyberspace Constructive Environment (ASCCE) and development of the Scenario Generation System. Begins the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.						
FY 2012 OCO Plans: Title: Air & Space Natural Environment Description: 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 databases and products.		0.995	0.991	0.995	-	0.995
FY 2010 Accomplishments: Develops the Air and Space Natural Environment (ASNE) capabilities.						
FY 2011 Plans: Develop 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.						
FY 2012 Base Plans: Development of the Air and Space Natural Environment (ASNE) capabilities. Begins the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise.						
FY 2012 OCO Plans:						
Accomplishments/Planned Programs Subtotals		5.941	5.976	6.488	-	6.488

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>	

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

OAS, Kirtland AFB, NM manages the acquisition and incremental development process for all M&S Foundation activities. All major contracts will be awarded after full and open competition.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011		
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					

Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVC-IA/Workforce/Concept Refinement, Technology, services, and tools support	Various	Various:Various,	4.946	4.985	Oct 2010	5.493	Oct 2011	-		5.493	Continuing	Continuing	TBD
ASNE (Services, Tools, and Environmental support)	Various	Various:Various,	0.995	0.991	Oct 2010	0.995	Oct 2011	-		0.995	Continuing	Continuing	TBD
Subtotal			5.941	5.976		6.488		-		6.488			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Project Cost Totals			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
			5.941	5.976		6.488		-		6.488			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 674567: <i>M&S Foundations</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Live-Virtual-Constructive Integrated Architecture	1	2010	4	2016
M&S Workforce (Human Capital Strategy/Awareness & Culturization)	1	2010	4	2016
ASNE (National Data Centers/Tools and Services)	1	2010	4	2016

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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 674991: Accelerated Acquisitions			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674991: Accelerated Acquisitions	4.617	4.676	5.235	-	5.235	5.308	5.388	5.466	5.563	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.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Architecture & Links							0.147	0.155	0.174	-	0.174
Description: Continue communications architectures and network support											
FY 2010 Accomplishments: Supported 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 Plans:											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011			
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 674991: Accelerated Acquisitions				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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 2012 Base Plans: 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 2012 OCO Plans:						
Title: Event Coordination Description: Continue to support LVC events to assist in Air Force requirements definition, development and T&E activities FY 2010 Accomplishments: Supported 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 Plans: 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 2012 Base Plans: 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 2012 OCO Plans:		0.221	0.225	0.253	-	0.253
Title: M&S Tools Description: Develop, enhance and verify models, tools, data, simulations/stimulation environments for systems engineering and test activities FY 2010 Accomplishments:		3.474	3.505	3.970	-	3.970

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011		
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 674991: Accelerated Acquisitions		
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Supported 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 Plans: 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 2012 Base Plans: 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 2012 OCO Plans:					
Title: Joint Service Integration Description: Continue to support Joint Service integration & test FY 2010 Accomplishments: Supported 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 Plans: 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 2012 Base Plans: 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 2012 OCO Plans:	0.775	0.791	0.838	-	0.838
Accomplishments/Planned Programs Subtotals	4.617	4.676	5.235	-	5.235

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

SAF/A6 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.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force										DATE: February 2011				
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 674991: Accelerated Acquisitions					
Product Development (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Architecture & Links	Various	Various:Various,	0.147	0.155	Nov 2010	0.174	Nov 2011	-		0.174	Continuing	Continuing	TBD	
Event Coordination	Various	Various:Various,	0.221	0.225	Nov 2010	0.253	Nov 2011	-		0.253	Continuing	Continuing	TBD	
Model, Tool, Data, Simulation Development & Verification	Various	Various:Various,	3.474	3.505	Nov 2010	3.970	Oct 2011	-		3.970	Continuing	Continuing	TBD	
Joint Service Integration	Various	Various:Various,	0.775	0.791	Nov 2010	0.838	Oct 2011	-		0.838	Continuing	Continuing	TBD	
Subtotal			4.617	4.676		5.235		-		5.235				
Support (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Test and Evaluation (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Management Services (\$ in Millions)					FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			4.617	4.676		5.235		-		5.235				
Remarks														

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & 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>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & 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>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Architecture & Link Support	1	2010	4	2016
Event development of LVC Events	1	2010	4	2016
Development and VV&A of models, tools, data, simulation/stimulation environments	1	2010	4	2016
Joint Integration & Test	2	2010	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
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 675004: New and Emerging Capabilities			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675004: New and Emerging Capabilities	-	-	1.351	-	1.351	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
The New and Emerging Capabilities are a collection of short-term, special M&S programs requiring rapid prototype and fielding. These capabilities meet Air, Space, or Cyberspace gaps identified by Air Force Major Commands, U.S. Combatant Commands, or Agencies; address Air Force core competencies; ensure Air Force's force structure or power projections are appropriately represented in DoD, Joint, and Service training, rehearsal, and assessments; ensure interoperability of simulations among weapon system programs; and field initial Air Force capabilities in support of Department of Defense priorities.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: JCAS Mobile Synthetic Training System							-	-	1.351	-	1.351
Description: Provides persistent, mobile, on-demand Battlefield Airman Training.											
FY 2010 Accomplishments:											
FY 2011 Plans:											
FY 2012 Base Plans:											
Provides persistent, mobile, on-demand Battlefield Airman Training, specifically Joint Terminal Attack Controller (JTAC) training, using synthetic Predator/Reaper imagery and/or Fighter/Bomber Advanced Targeting Pod feeds. Training will be accomplished on designated Air Force and Joint ranges and (e.g. Nellis Range Complex, Fort Irwin National Training Center, and Fort Polk Joint Readiness Training Center) and designated military operating areas using Live, Virtual and Constructive Integrated M&S.											
FY 2012 OCO Plans:											
Accomplishments/Planned Programs Subtotals							-	-	1.351	-	1.351

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675004: <i>New and Emerging Capabilities</i>	

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All contract in NEWC will use full and open competition.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>				PROJECT 675004: <i>New and Emerging Capabilities</i>						

Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
New and Emerging Capabilities	Various	Various:Various,	-	-		1.351	Oct 2011	-		1.351	0.000	1.351	1.351
Subtotal			-	-		1.351		-		1.351	0.000	1.351	1.351

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		1.351		-		1.351	0.000	1.351	1.351

Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675004: <i>New and Emerging Capabilities</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675004: <i>New and Emerging Capabilities</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
New and Emerging Capabilities	1	2012	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675135: Warfighter Readiness	15.663	10.986	10.017	-	10.017	9.042	9.397	9.883	9.939	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 Combat Commanders (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. 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 Air Force operational-level exercises.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Air, Space, and Cyberspace Constructive Environment (ASCCE)							9.101	9.486	9.040	-	9.040
Description: Air Force Modeling & Simulation Training Toolkit (AFMSTT) Modernization/Information Operations Suite (IOS)/Air Warfare Simulation (AWSIM)											
FY 2010 Accomplishments:											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force				DATE: February 2011	
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 Programs (\$ in Millions)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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 Plans: 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 2012 Base Plans: 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 2012 OCO Plans:					
Title: DMOI/Warfighter & JTTI Description: Distributed Mission Operations Integration (DMOI)/Warfighter & Joint Training Integration (JTTI) FY 2010 Accomplishments: DMOI/Warfighter & Joint Training Integration (JTTI) FY 2011 Plans: DMOI/Warfighter & Joint Training Integration (JTTI) FY 2012 Base Plans: DMOI/Warfighter & Joint Training Integration (JTTI) FY 2012 OCO Plans:	6.562	1.500	0.977	-	0.977
Accomplishments/Planned Programs Subtotals	15.663	10.986	10.017	-	10.017

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>				PROJECT 675135: <i>Warfighter Readiness</i>			

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

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.

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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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force										DATE: February 2011			
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					
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AFMSTT Modernization/ IOS (Air Warfare Simulation (AWSIM))	Various	ESC:Hanscom AFB, MA	9.101	9.486	Dec 2010	9.400	Dec 2011	-		9.400	Continuing	Continuing	TBD
DMOI/Warfighter & Joint Training Integration/JTTI	Various	ESC:Hanscom AFB, MA	6.562	1.500	Dec 2010	0.617	Dec 2011	-		0.617	Continuing	Continuing	TBD
Subtotal			15.663	10.986		10.017		-		10.017			
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			15.663	10.986		10.017		-		10.017			
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675135: <i>Warfighter Readiness</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207601F: <i>USAF Modeling and Simulation</i>	PROJECT 675135: <i>Warfighter Readiness</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Warfighter/Joint Training Integration	1	2010	4	2016
Information Operations Suite (IOS)	1	2010	4	2016
Joint Training Transformation Initiative (JTTI)	1	2010	4	2016
Air, Space, and Cyberspace Constructive Environment (ASCCE) Air Force Modeling & Simulation Training Toolkit (AFMSTT)	1	2010	4	2016

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