

UNCLASSIFIED

PE NUMBER: 0207601F

PE TITLE: USAF Modeling and Simulation

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	10.784	25.145	23.470	22.931	29.056	27.814	30.663	Continuing	TBD
4567 M&S Foundations	2.495	6.114	6.024	6.284	6.315	6.389	6.421	Continuing	TBD
4991 Accelerated Acquisitions	2.316	4.755	3.900	5.131	5.126	5.243	5.333	Continuing	TBD
5004 New and Emerging Capabilities	0.000	1.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5135 Warfighter Readiness	5.973	13.276	13.546	11.516	17.615	16.182	18.909	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

United States Air Force (USAF) Modeling & Simulation (M&S) was aligned into four thrusts to better support customer needs. This resulted in project 4567; which included the Executive Agent For Air/Space Natural Environment (ASNE) project for M&S Foundations (MSF); project 4991 for Accelerated Acquisitions (AA); project 5004 for New and Emerging Warfighting Capabilities (NEWC), and project 5135 for Warfighter Readiness (WR). The four thrusts enable the communities of interest to focus and prioritize the PE's next generation M&S capabilities.

Modeling & Simulation Foundations (MSF) provides realistic representations of friendly and threat warfighting capabilities, realistic representations of the natural environment where the warfighting capabilities exists, and an architecture framework to support developing representations that allow the easy and rapid integration of those representations into synthetic battlespaces. Accelerated Acquisitions (AA) connects combat system engineering sites within the Air Force-Integrated Collaborative Environment (AF-ICE), formally known as Joint Distributed Engineering Plant (JDEP), which replicates the Joint Force Combat system to create a network test-bed to assess Joint Battle Management, Command, Control, Communication, Computers and Intelligence. AA's objective is to improve interoperability of weapons systems and platforms through more rigorous interoperability evaluation in a replicated battlefield environment. AA provides the capability to improve Service and Joint system performance in a system-of-systems environment. New and Emerging Warfighting Capabilities (NEWC) focuses on future capabilities and force structure. Examples include Science and Technology, analysis, concept exploration and future wargaming. Models are being developed for a broad range of areas including acquisition, analysis, test and evaluation and training. Warfighter Readiness (WR) focuses on improving warfighting decision-making, execution, skills and processes using modeling and simulation. WR leverages AA, MSF, and Distributed Mission Operations/Training (mission rehearsal/training) programs to create the most efficient robust, collaborative M&S environment available.

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

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	18.693	30.541	24.347
(U) Current PBR/President's Budget	10.784	25.145	23.470
(U) Total Adjustments	-7.909	-5.396	
(U) Congressional Program Reductions		-6.031	
Congressional Rescissions	-0.239	-0.365	
Congressional Increases		1.000	
Reprogrammings	-7.245		
SBIR/STTR Transfer	-0.425		

(U) **Significant Program Changes:**

In FY05, the difference in the previous President's budget and the current President's budget is due to reprogramming within the Department of Defense to meet higher programming priorities.

In FY06, Congress removed \$6.031M from the Warfighter Readiness thrust, project 5135, due to excessive program growth and added \$1.000M to the New and Emerging Capabilities thrust, project 5004, for the Synthetic Theater Operations Research Model (STORM).

In FY07, the difference between the previous and current President's budget is due to higher programming priorities within the Department of Defense. One million was reprogrammed from Project 4991 to support the Testing in a Joint Environment initiative.

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT NUMBER AND TITLE

4567 M&S Foundations

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4567 M&S Foundations	2.495	6.114	6.024	6.284	6.315	6.389	6.421	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

M&S Foundations (MSF) focuses on integrating foundational capabilities needed to improve the usefulness, productivity, scalability and efficiency of M&S capabilities derived from Warfighter Readiness (WR), Accelerated Acquisitions (AA), and New and Emerging Warfighting Capabilities (NEWC). The efforts supporting the M&S Foundations thrust include both concept exploration and development.

MSF will provide standards and interfaces to be used by model developers to ensure model reuse. M&S Foundations will provide the capability to rapidly create realistic and accurate synthetic operational battlespaces to support the full spectrum of activities associated with mission preparation and acquisition of warfighting capabilities by providing appropriate component representations. Users will access readily available repositories of reusable, validated, and integrated synthetic components. Synthetic components will 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 will be based on a durable common architecture framework and common standards.

Air Force Director of Weather (AF/XOO-W) is designated as the DoD Air and Space Natural Environment Modeling and Simulation Executive Agent (ASNE MSEA). ASNE MSEA coordinates all aspects of DoD M&S related to representations of the air and space natural environment, ensuring air and space weather is properly represented in Joint and Service models, simulations, war games, and experiments. The ASNE MSEA part of this project primarily funds the following: Environmental Scenario Generator, Environmental Hypercube (pre-runtime rules-based weather effects), and Space Weather Analysis as required to support joint M&S program offices and activities like OSD Program, Analysis, and Evaluation; Air Force Studies and Analyses Agency; Joint Warfare Simulation; Joint National Training Capability; Distributed Mission Operations & Training; One Semi-Automated Force; Navy Probability of Raid Annihilation Assessment; Unified Engagement; Hazard Prediction and Assessment Capability; and Joint Expeditionary Force Experiment. Primary customers are combatant commanders, service components, and various DoD organizations conducting simulations and exercises involving air, ground, sea, and space assets. ASNE MSEA develops authoritative natural environment scenarios necessary for robust "What-if" mission planning and rehearsal and for realistic Training, Analysis, and Acquisition models and simulations. ASNE MSEA leads the development and execution of the DoD Integrated Natural Environment Authoritative Representation Process (INEARP) Concept of Operations.

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

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

	FY 2005	FY 2006	FY 2007
(U) MSF Concept exploration/model development/model transition	1.585	5.158	5.049
(U) Provide DoD M&S community with tools to search Air & Space Natural Environment scenarios; measure effects on weapon systems and subsystems and access tailored reusable databases	0.910	0.956	0.975
(U) Total Cost	2.495	6.114	6.024

Project 4567

R-1 Shopping List - Item No. 159-3 of 159-23

Exhibit R-2a (PE 0207601F)

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4567 M&S Foundations

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

<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(U) Not applicable

(U) D. Acquisition Strategy

Electronic Systems Center (ESC) at Hanscom AFB, MA and ASC, Wright Patterson AFB, OH will manage the acquisition and model development process for all M&S Foundation activities. All major contracts will be awarded after full and open competition.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4567 M&S Foundations

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> System Engineering and Technology Support	Various	Northrop Grumman, ESC, Hanscom AFB, MA	8.825							Continuing	TBD	TBD
Concept Exploration and Technology Support	Various	ASC, Wright Patterson AFB, OH	14.507	1.585	Oct-04	5.158	Oct-05	5.049	Oct-06	Continuing	TBD	TBD
ASNE	Various	Various	0.000	0.910	Oct-04	0.956	Oct-05	0.975	Oct-06	Continuing	TBD	TBD
Subtotal Product Development			23.332	2.495		6.114		6.024		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u> Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			23.332	2.495		6.114		6.024		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

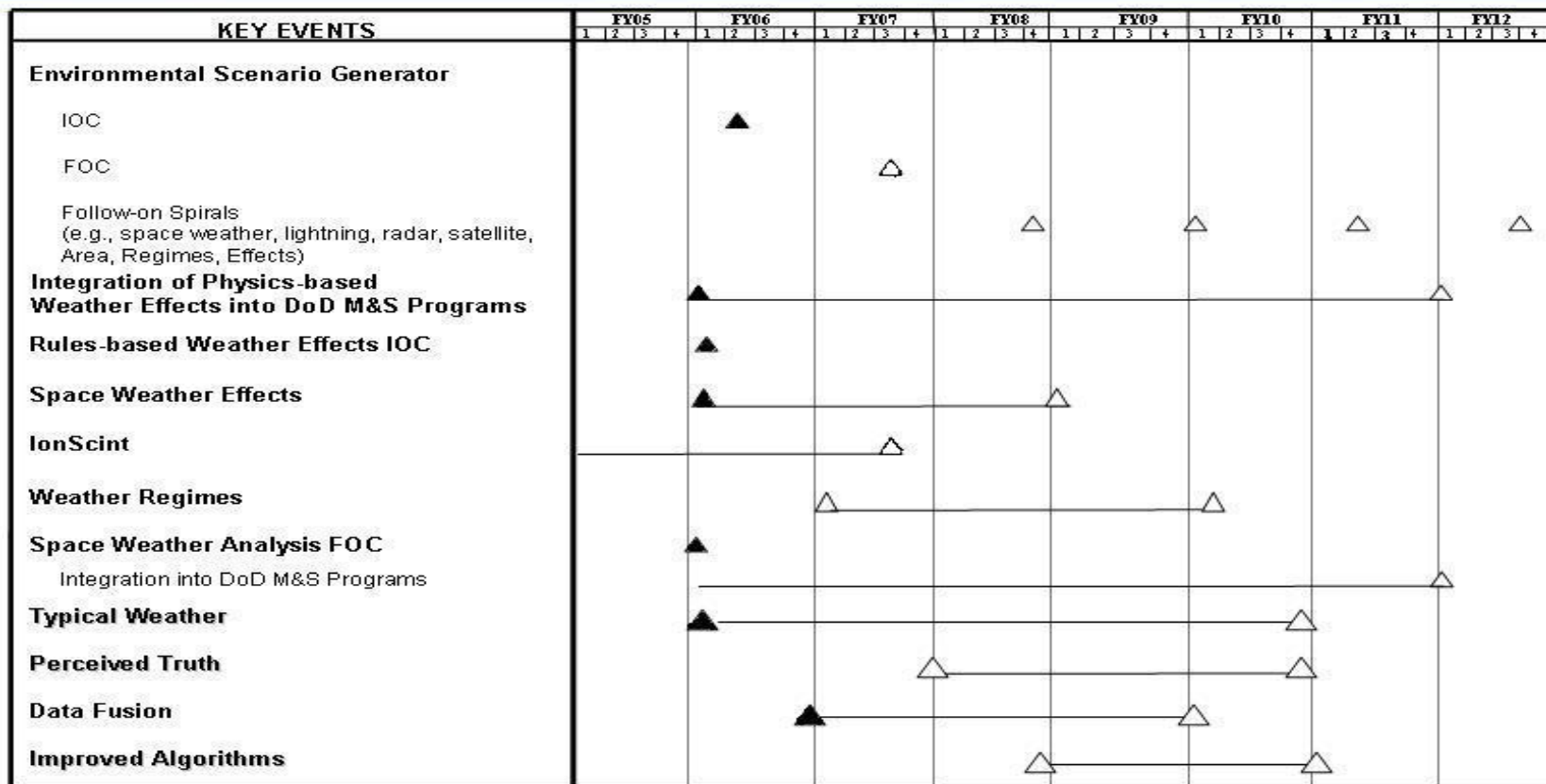
4567 M&S Foundations



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ASNE Schedule

U.S. AIR FORCE



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UNCLASS

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Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4567 M&S Foundations

Exhibit R-4: M&S Foundations (MSF)

	FY04				FY05				FY06				FY07				FY08				FY09				FY10				FY11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones			▲	★																												
Concept Refinement			★																													
Technology Development						★				★				☆				☆				☆				☆				☆		
Test & Eval										▲				△				△				△				△				△		
Delivery										★				☆				☆				☆				☆				☆		
Support																																

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4567 M&S Foundations

(U) Schedule ProfileFY 2005FY 2006FY 2007(U) MSF concept exploration/ refinement, development, and enhancement of next generation
modeling & simulation efforts

1-4Q

1-4Q

1-4Q

(U) Environmental Scenario Production Initial Operating Capability (IOC)

2Q

(U) Environmental Scenario Production Final Operating Capability (FOC)

3Q

(U) Rules-based Weather Effects IOC

1Q

(U) Space Weather Effects IOC

1Q

(U) IONScint FOC

3Q

(U) Space Weather Analysis FOC/Integration into DoD M&S programs

1-4Q

1-4Q

(U) Typical Weather

1-4Q

1-4Q

(U) Perceived Truth

4Q

(U) Data Fusion

4Q

1-4Q

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT NUMBER AND TITLE

4991 Accelerated Acquisitions

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4991 Accelerated Acquisitions	2.316	4.755	3.900	5.131	5.126	5.243	5.333	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

Accelerated Acquisitions (AA) focuses on reducing the time and resources required to provide material solutions to the Warfighter. Examples include more efficient and coordinated processes for design, development, test and evaluation, maintainability and sustainment.

AA's objective is to improve interoperability of weapon systems and platforms through more rigorous interoperability evaluation in a replicated battlefield environment. The AA thrust area includes the Air Force-Integrated Collaborative Environment (AF-ICE) which connects combat system engineering sites and replicates Joint Force Combat Systems to create a network testbed to assess network centric systems and Command, Control, Communication, Computers and Intelligence (C4I).

In addition, AA provides the capability to improve both Service and Joint system performance in a System-of-Systems environment. AF-ICE will use this network to build 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). AF-ICE will develop the concept of operations, business rules, and procedures to enable acquisition managers to effectively use the network. The AF-ICE initiative supports the Homeland Defense Testbed, Command & Control (C2) Constellation, Node Additions, and various other activities that use the network infrastructure located around the country.

The AF-ICE will coordinate activities involving Air Force engineering and test sites. AF-ICE will ensure that accurately represented C4I networks are established for system development and testing activities and will evaluate those systems for interoperability and integration into a joint environment.

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

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue communications architectures, links and operations support Air Force-Integrated Collaborative Environment (AF-ICE) activities	1.000	1.526	1.255
(U) Continue to expand existing Infrastructure to support AF-ICE activities to include the management, operations and test support along with contracted personnel to assist in DT/OT activities	1.000	1.500	1.156
(U) Provide event analysis support to product centers	0.316	0.829	0.589
(U) Develop and execute various simulations/stimulation environments for test events	0.000	0.900	0.900
(U) Total Cost	2.316	4.755	3.900

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4991 Accelerated Acquisitions

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

<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(U) Not applicable

(U) **D. Acquisition Strategy**

Air Force Material Command (AFMC) Wright-Patterson AFB will manage the acquisition and development process for the experimentation, integration, and site activation activities for AA. All major contracts will be awarded after full and open competition.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT NUMBER AND TITLE

4991 Accelerated Acquisitions

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u>												
HLD Testbed	Various	ESC Hanscom AFB, MA		0.220	Nov-04					Continuing	TBD	TBD
AF-ICE Core Development	Various	BOEING, ASC Wright-Patt AFB OH, ESC Hanscom AFB MA, AAC Eglin AFB FL		1.000	Oct-04	0.457	Nov-05	1.395	Nov-06	Continuing	TBD	TBD
AWSIM Support	T&M	NORTHROP GRUMMAN, ESC Hanscom AFB, MA		0.000		0.500	Nov-05			Continuing	TBD	TBD
AF-ICE Architecture Infrastructure	Various	ASC Wright-Patt AFB OH, ESC Hanscom AFB MA, AAC Eglin AFB FL		0.000		1.600	Nov-05	1.349	Nov-06	Continuing	TBD	TBD
HLD Testbed/AF-ICE Activities Support	C/CPFF	Solipsys, ESC Hanscom AFB, MA		0.000		0.200	Dec-05			Continuing	TBD	TBD
AF-ICE Domain Infrastructure	Various	ASC Wright-Patt AFB OH, ESC Hanscom AFB MA, AAC Eglin AFB FL		1.000	Dec-04	0.500	Dec-05	1.156	Jan-07	Continuing	TBD	TBD
AF-ICE Support	C/CPFF	RAYTHEON, ESC Hanscom AFB, MA		0.000		0.298	Dec-05			Continuing	TBD	TBD
Various	Various	Mitre, ESC Hanscom AFB, MA		0.000		0.300	Oct-05			Continuing	TBD	TBD
ITSP Support	Various	ESC Hanscom AFB, MA		0.096	Oct-04	0.500	Mar-06			Continuing	TBD	TBD
Subtotal Product Development			0.000	2.316		4.355		3.900		Continuing	TBD	TBD
Remarks:												

(U) Support

Project 4991

R-1 Shopping List - Item No. 159-11 of 159-23

Exhibit R-3 (PE 0207601F)

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4991 Accelerated Acquisitions

46th Test Squadron	Project	Various			0.400	Nov-05		Continuing	TBD	TBD
Subtotal Support	Order		0.000	0.000	0.400		0.000	Continuing	TBD	TBD
Remarks:										
(U) <u>Test & Evaluation</u>									0.000	
Subtotal Test & Evaluation			0.000	0.000	0.000		0.000	0.000	0.000	0.000
Remarks:										
(U) <u>Management</u>									0.000	
Subtotal Management			0.000	0.000	0.000		0.000	0.000	0.000	0.000
Remarks:										
(U) Total Cost			0.000	2.316	4.755		3.900	Continuing	TBD	TBD

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4991 Accelerated Acquisitions



U.S. AIR FORCE

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AF-ICE Schedule

KEY EVENTS	FY05				FY06				FY07				FY08				FY09				FY10				FY11				FY12				
	1	2	3	+	1	2	3	+	1	2	3	+	1	2	3	+	1	2	3	+	1	2	3	+	1	2	3	+	1	2	3	+	
AF-ICE CORE development	▲																															▽	
Architecture infrastructure					▲																												
Domain infrastructure development & integration	▲					▼					▽	▽																					
Industry infrastructure development & integration					▲																												
ICE Breakers (AF-ICE Events)						▲			▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽
Joint Service development & integration										△																							

UNCLASS

1

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

4991 Accelerated Acquisitions

(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Event planning, development, integration, and infrastructure support

3-4Q

1-4Q

1-4Q

(U) AF-ICE events

4Q

1-4Q

(U) Joint Service support

3Q

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

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February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

5004 New and Emerging Capabilities

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5004 New and Emerging Capabilities	0.000	1.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

New and Emerging Warfighting Capabilities (NEWC) focuses on future capabilities and force structure. Examples include Science & Technology, analysis, concept exploration and futures wargaming. Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training.

In FY06, this Program Element (PE) contains the Congressional add that enables the development of Synthetic Theater Operations Research Model (STORM). STORM will replace the current Air Force theater level campaign model, THUNDER, with enhanced capability to feed aerospace representation in the joint analysis efforts and support Quadrennial Defense Reviews.

No activity is currently planned for FY07.

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

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Develop STORM	0.000	1.000	0.000
(U) Total Cost	0.000	1.000	0.000

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(U) Not Applicable

(U) **D. Acquisition Strategy**

All major contracts for model development were awarded after full and open competition.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT NUMBER AND TITLE

5004 New and Emerging Capabilities

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> STORM development	T&M	AFSAA, Rosslyn, VA				1.000				Continuing	TBD	TBD
Subtotal Product Development			0.000	0.000		1.000		0.000		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u> Subtotal Support			0.000	0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:										Continuing	TBD	TBD
(U) <u>Test & Evaluation</u> Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:										Continuing	TBD	TBD
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:										Continuing	TBD	TBD
(U) Total Cost			0.000	0.000		1.000		0.000		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

5004 New and Emerging Capabilities

STORM

	FY06	FY07	FY08	FY09
Storm Development				

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Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

5004 New and Emerging Capabilities

(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Storm development

1-4Q

Exhibit R-2a, RDT&E Project Justification								DATE February 2006	
BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT NUMBER AND TITLE 5135 Warfighter Readiness		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5135 Warfighter Readiness	5.973	13.276	13.546	11.516	17.615	16.182	18.909	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		
<p>(U) A. Mission Description and Budget Item Justification</p> <p>Warfighter Readiness (WR) focuses on putting the Warfighter in a simulated environment to improve warfighting decision-making, execution, skills and processes. Examples include operational training, mission rehearsal, operational decision-making, mission execution, concept development and wargaming.</p> <p>WR includes the Air and Space Constructive Environment (ACE), which is the constructive back plane for live and virtual assets to work within for Distributed Mission Operations (DMO). Distributive Mission Operations (DMO) is the Air Force's contribution to the Joint National Training Concept (JNTC). WR's capabilities provided within the environment are the AF's contribution to the Joint Training Confederation's battle staff training environment used to support Combatant Commanders, Joint Task Force, and component commander staff readiness training. The capabilities support Joint/Service exercises including, but not limited to: Joint National Training Concept (JNTC), Yama Sakura, Reception, Staging, Onward-movement & Integration (RSO&I), Ulchi Focus Lens, Roving Sands, Austere Challenge, Flexible Leader, Blue Flag, Joint Expeditionary Force Experiment, and Red/Virtual Flag.</p> <p>Other capabilities will provide for Intelligence, Surveillance, and Reconnaissance (ISR) training and exercise supported by using a virtual ISR system for command and staff level training. The simulation provides commanders, staffs and operators with a common training system for the employment, tasking, exploitation and dissemination of imagery. The environment also provides models simulating electronic combat, electronic warfare, targeting, ISR representation, and intelligence integral to the Air and Space Operations Center training.</p> <p>WR also includes the Air Force Modeling & Simulation Training Toolkit (AFMSTT) modernization. AFMSTT provides: the Air Warfare Simulation System (AWSIM) which interfaces to Command, Control, Communications, Computers, and Intelligence (C4I) to Theater Battle Management Core System (TBMCS) and the Graphical Input Aggregate Control (GIAC), the Logistics Simulation (LOGSIM), the Intelligence Management Controller Node (IMCN), the AWSIM Analysis Tool (AAT), and the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS). AFMSTT's capabilities require modernization to support Air Force Title X requirements.</p> <p>In addition, project 675135 supports the Joint Model Transition (formerly known as Legacy Model Transition) which supports the development and upgrade of models selected through a board process. The selection process allows the board to influence the direction of model development and integration for the modeling and simulation community. Emphasis is placed on standardization, integration, capabilities improvement, joint applicability and acceptance.</p> <p>This program is in Budget Activity 7 - Operational System Development because it provides RDT&E funding for major USAF Modeling and Simulation efforts.</p>									

Exhibit R-2a, RDT&E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

5135 Warfighter Readiness

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) AFMSTT Modernization	5.600	9.801	8.000
(U) Distributed Mission Operations Integration (DMOI)	0.000	2.975	4.846
(U) Perform JMT cost-benefit analysis, develop and integrate models, simulations and interface standards	0.373	0.350	0.500
(U) Aggregate Level Simulation Protocol (ALSP)	0.000	0.150	0.200
(U) Total Cost	5.973	13.276	13.546

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Not applicable									

(U) **D. Acquisition Strategy**

Electronic Systems Center (ESC) at Hanscom AFB, MA will manage full and open acquisition and model development process for all WR activities.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT NUMBER AND TITLE

5135 Warfighter Readiness

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u>												
AFMSTT	Various	ESC, Hanscom AFB, MA		5.600	Dec-04	9.801	Jan-06	8.000	Dec-06	Continuing	TBD	TBD
DMOI	Various	ESC, Hanscom AFB, MA				2.975	Jan-06	4.846	Dec-06	Continuing	TBD	TBD
JMT	Various	General Services Administration (GSA)and Office of Aerospace Studies (OAS), Kirtland AFB, NM		0.373	Feb-05	0.350	Dec-05	0.500	Dec-06	Continuing	TBD	TBD
ALSP	Various	ESC, Hanscom AFB, MA				0.150	Dec-05	0.200	Dec-06	Continuing	TBD	TBD
Subtotal Product Development			0.000	5.973		13.276		13.546		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u>												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	5.973		13.276		13.546		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

5135 Warfighter Readiness

Exhibit R-4: Warfighter Readiness (WR)

	FY04				FY05				FY06				FY07				FY08				FY09				FY10				FY11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AFMSTT Modernization							★				★			☆			☆			☆				☆				☆				
DMO Integration										★			☆			☆			☆				☆				☆					
JMT							★				★			☆			☆			☆												
ALSP										★			☆			☆																

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Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and
Simulation

PROJECT NUMBER AND TITLE

5135 Warfighter Readiness

(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) AFMSTT Modernization

1-4Q

1-4Q

1-4Q

(U) DMOI Development

1-4Q

1-4Q

(U) JMT-perform cost-benefit analysis, develop and integrate models, simulations and interface standards according to Modeling & Simulation Strategic Plan (MSSP) and architecture.

1-4Q

1-4Q

1-4Q

(U) ALSP Development

1-4Q

1-4Q