

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19,407	30,361	21,895	20,139	18,108	13,161	9,389	Continuing	TBD
1008 National Air and Space Warfare Model (NASM)	13,744	22,316	14,258	12,465	11,396	6,296	2,397	Continuing	TBD
4567 Joint Modeling and Simulation System (JMASS)	5,663	6,832	6,314	6,329	5,342	5,465	5,566	Continuing	TBD
5004 Joint Model Transition (JMT)	0	392	404	411	418	420	425	Continuing	TBD
5005 Executive Agent For Air /Space Natural Environment	0	821	919	934	952	980	1,001	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>In FY02, Project 675004, Joint Model Transition (formerly known as Legacy Model Transition) and Project 675005, Executive Agent For Air/Space Natural Environment efforts transferred from PE 0308601F, Modeling & Simulation Support, Project 671011, Legacy Model Transition (LMT) and Project 674566, Executive Agent for Air/Space natural Environment, in order to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) A. Mission Description Provides RDT&E funding for major USAF Modeling and Simulation efforts such as the National Air and Space [Warfare] Model (NASM)-the air and space element of the Joint Simulation System (JSIMS); and the Joint Modeling and Simulation System (JMASS). JSIMS will be the sole readiness training simulation used by all CINCs, Services, NAFs and at all simulation centers to train Joint Force Commanders, Joint Task Force staffs, Components and their staffs, including Joint Force Air Component Commanders and Air Operations Center personnel. JMASS provides High Level Architecture (HLA)-compliant architecture for engagement level simulations.</p> <p>This PE also includes funding to support an organized growth and management of modeling and simulation (M&S) systems as the Air Force transitions from numerous legacy models and simulations to emerging DoD standard models and architecture. Numerous models currently exist and are being modified or developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as the Legacy</p>									

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(U) **A. Mission Description Continued**
 Model Transition) funds the upgrades to selected R&D models through a board process. The selection process allows the board to influence the direction of legacy model development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. The Executive Agent for Air & Space Natural Environment (ASNE) serves the M&S community as subject matter experts for ASNE M&S databases (including relevant standards), dynamic processes, and other applications. This enables the major Joint simulation systems (i.e., Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and Joint and Service component programs (i.e., Joint Strike Fighter (JSF), Ballistic Missile Defense Organization (BMDO), etc.) to represent the air and space natural environment rapidly, thoroughly, and consistently in a manner that promotes cost-effectiveness, ready access, interoperability, re-use, and confidence. Primary users will be unified commanders and service components for use in joint or service-specific exercises involving air, ground, sea, and space campaigns.

Provides funding for the development of the 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 Warfare System (JWARS) and support Quadrennial Defense Reviews. In addition, the Intelligent Flight Control System Simulation Research and Oklahoma City ALC Modeling and Simulation programs are funded in this PE.

(U) **B. Budget Activity Justification**
 Initiated in FY 94, 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. These funds also support development activities for the AF as executive agent for air/space natural environment and continued development and integration of AF models in the Joint Model Transition (JMT) program.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	17,624	25,345	21,895	
(U) Appropriated Value	18,024	25,345		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		5,500		
b. Small Business Innovative Research	-552			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	2,100			
e. Rescissions	-165	-484		
(U) Adjustments to Budget Years Since FY 2002 PBR				

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07 - Operational System Development		0207601F USAF Modeling and Simulation		
(U)	<u>C. Program Change Summary (\$ in Thousands) Continued</u>			
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U)	Current Budget Submit/FY 2003 PBR	19,407	30,361	21,895
(U)	<u>Significant Program Changes:</u>			<u>Total Cost</u>
	Significant Program Changes: In FY00, funding from PE 0604256F, Threat Simulator Development, was transferred into PE 0207601F in FY00 and FY01 for the Joint Modeling and Simulation (JMASS) program development.			TBD
	In FY02, Congress added \$5.5M for the Synthetic Theater Operations Research Model (STORM), Intelligent Flight Control System Simulation Research, and the Oklahoma City ALC Modeling and Simulation program. These programs will be realigned under Project 675004, Joint Model Transition.			

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation				PROJECT 1008			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1008	National Air and Space Warfare Model (NASM)	13,744	22,316	14,258	12,465	11,396	6,296	2,397	Continuing	TBD	
<p>(U) <u>A. Mission Description</u> This program provides funds for Air Force and Joint wargaming architecture and model development, primarily in support of battlestaff training, education, and military operations. New simulation federate components are being developed by the NASM program to replace the existing Air Force standard Air Warfare Simulation (AWSIM) within the JSIMS system. NASM will expand the use and role of modeling and simulation (M&S) in support of operational and acquisition decision making, and increase the interoperability between Air Force and joint efforts such as Joint Synthetic Battlespace (JSB). NASM includes, but is not limited to, representation of the full range of AFM 1-1 missions to meet the needs of USAF MAJCOMs and Unified/Specified Command air components to train Air Component Commanders and their battle staffs. Additionally, NASM provides the JSIMS Civil Environment for accurate portrayal of strategic and cascading effects. Also, NASM is providing additional common components under JSIMS Alliance resources. Primary users will be the unified command air components, Commanders in Chief (CINCs), Joint Forces Air Component Commander's (JFACC), and Service components, as supported by the C2 Technology Interoperability Group, the Korean Air Simulation Center (KASC), and the Warrior Preparation Center (WPC) for use in joint exercises involving air, ground, and sea campaigns.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$10,240 Continue development of specific air objects to support JSIMS architecture (U) \$3,104 Continue NASM integration effort and operate the program management office (U) \$400 Upgrade Synthetic Theater Operations Research Model (STORM). (U) \$13,744 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$14,209 Continue development of specific air objects to support JSIMS architecture. (U) \$2,607 Continue NASM integration effort and operate the program management office (U) \$1,000 Upgrade STORM. This task will be realigned under Project 675004, Joint Model Transition. (U) \$4,500 Execute the Congressionally directed Intelligent Flight Control System Simulation and Oklahoma City ALC Modeling and Simulation programs. These tasks will be realigned under Project 675004, Joint Model Transition. (U) \$22,316 Total</p>											
Project 1008				Page 4 of 17 Pages				Exhibit R-2A (PE 0207601F)			

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$12,000 Continue development of specific air objects to support JSIMS architecture.</p> <p>(U) \$2,258 Continue NASM integration effort and operate the program management office</p> <p>(U) \$14,258 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p>FY2001 Congressional Plus-up of \$400K for STORM</p> <p>FY2002-2005 JSIMS \$21.6M added to align NASM program to JSIMS integrated master schedule to meet IOC requirements.</p> <p>In FY02, Congress added \$5.5M for the Synthetic Theater Operations Research Model (STORM), Intelligent Flight Control System Simulation Research, and the Oklahoma City ALC Modeling and Simulation program. These programs will be realigned under Project 675004, Joint Model Transition.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>FY 2004</u></th> <th style="width: 10%; text-align: center;"><u>FY 2005</u></th> <th style="width: 10%; text-align: center;"><u>FY 2006</u></th> <th style="width: 10%; text-align: center;"><u>FY 2007</u></th> <th style="width: 10%; text-align: center;"><u>Cost to</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u></p> <p>NASM provides the Air and Space software components of the Joint Simulation System (JSIMS). Resources are reviewed and measured against an Alliance program baseline, with the Earned Value and performance measurement reporting against the baseline accomplished on a monthly basis. The contract was selected by source selection and is a Cost Plus Award Fee (CPAF).</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 20%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 20%; text-align: center;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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) AF RDT&E								Continuing	Continuing	(U) Other APPN								Continuing	Continuing		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																									
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation				PROJECT 1008				
(U) <u>E. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Version 1.0 VRM Ready-for-Test											
(U)	IOC Version 1.0 Release 1QFY03											
(U)	Version 2.0 VRM Ready-for-Test 1QFY03											
(U)	Version 2.0 Release 2QFY04											
<p>NASM development schedule is aligned with the Joint Simulation System (JSIMS) Acquisition Program Baseline (APB) development schedule required to achieve Initial Operational Capability (IOC) in FY03 and Full Operational Capability (FOC) in FY05.</p>												
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0207601F USAF Modeling and Simulation			1008			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Software development					10,240		14,209		12,000	
(U)	Program Management/Contractor Support					3,104		2,607		2,258	
(U)	Congressional Add; Synthetic Theater Operations Research Model (STORM) upgrade					400		1,000			
(U)	Intelligent Flight Control System Simulation and Oklahoma City ALC Modeling and Simulation programs							4,500			
(U)	Total					13,744		22,316		14,258	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Raytheon (NASM)	TRN	3 Mar 97	74,541	74,541	17,135	10,075	14,209	12,000	Continuing	TBD
	Raytheon (AWSIM/R)	TRN	7 Apr 94	9,876	9,876	11,454	0	0	0	0	11,454
	Hughes (AWSIM/R)	TRN	2 Jun 94	4,676	4,676	4,059	0	0	0	0	4,059
	TRW (AFSOM)	TRN	12 Dec 97	39	39	39	0	0	0	0	39
	TRW (JSB)	Contract Mod	1 Nov 00	150	150	0	0	0	0	0	0
	SysSimSolutions (STORM)	Task Order	11 Aug 00	1,623	1,623	0	400	1,000	0	0	1,400
	Powerscene	Contract	Sep 00	700	700	0	0	0	0	0	0
	Breakaway Solutions	Contract Mod	Aug 01	0	0	0	165	0	0		165
	Intelligent Flight Control System Sim Research Task	TBD	TBD	2,500	2,500			2,500		Continuing	TBD
	Oklahoma City ALC Modeling and Simulation Task	TBD	TBD	2,000	2,000			2,000		Continuing	TBD
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
07 - Operational System Development										1008
PE NUMBER AND TITLE										
0207601F USAF Modeling and Simulation										
(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
Tech Eng Mgt Spt (TEMS)	Del Order	Various	15,413	15,413	8,082	1,809	1,215	1,008	Continuing	TBD
/ITSP										
MITRE	Contract Mod	Various	13,200	13,200	5,869	898	1,142	1,000	Continuing	TBD
Other*	Various	Various	19,180	19,180	17,112	397	250	250	Continuing	TBD
*Includes Prototype Contracts										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					32,687	10,640	19,709	12,000	TBD	TBD
Subtotal Support and Management					31,063	3,104	2,607	2,258	TBD	TBD
Subtotal Test and Evaluation										
Total Project					63,750	13,744	22,316	14,258	TBD	TBD

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation	PROJECT 4567
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4567 Joint Modeling and Simulation System (JMASS)	5,663	6,832	6,314	6,329	5,342	5,465	5,566	Continuing	TBD

(U) **A. Mission Description**
 The Joint Modeling & Simulation System (JMASS) is a simulation support environment for the development, configuration, execution, and analysis of high fidelity, repeatable simulations with re-usable models-focus is tactical/engagement level simulations with the present concentration on electronic combat. JMASS is a full system software implementation of a modern object based simulation architecture. JMASS provides users with the tools to: Develop objects, assemble these objects into models, configure the models in a complete simulation, execute the simulation, and post process the simulation data. JMASS tools assist users in developing fully compliant objects; users concentrate on the models and analysis, not computer science.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$3,313 JMASS Legacy Model Transition and Development
 (U) \$2,100 Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)
 (U) \$250 JMASS Integration with Other Service Simulations
 (U) \$5,663 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$4,732 JMASS Legacy Model Transition and Development
 (U) \$2,100 Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)
 (U) \$6,832 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$4,214 JMASS Legacy Model Transition and Development
 (U) \$2,100 Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)
 (U) \$6,314 Total

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<p>(U) <u>B. Project Change Summary</u> PE 64256F, Threat Simulator Development, transferred \$2.1M in FY00 and FY01 for JMASS Joint Program Development.</p> <p>Also, JMASS funding was increased \$12.59M from FY02-FY07 to develop Blue and Threat system models and transition legacy functionality into the JMASS system.</p>																																																																							
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	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																														
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<p>(U) <u>D. Acquisition Strategy</u> All major contracts for JMASS model development will be awarded after full and open competition.</p>																																																																							
<p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="3" style="width:15%;"><u>FY 2001</u></th> <th colspan="3" style="width:15%;"><u>FY 2002</u></th> <th colspan="3" style="width:15%;"><u>FY 2003</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) Initial Delivery Completed</td> <td style="text-align: center;">*</td> <td></td> </tr> <tr> <td>(U) IOC Block I</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) IOC Block II</td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table>											<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Initial Delivery Completed	*												(U) IOC Block I					*								(U) IOC Block II												X
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>																																																																
	1	2	3	4	1	2	3	4	1	2	3	4																																																											
(U) Initial Delivery Completed	*																																																																						
(U) IOC Block I					*																																																																		
(U) IOC Block II												X																																																											
Project 4567			Page 10 of 17 Pages				Exhibit R-2A (PE 0207601F)																																																																

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0207601F USAF Modeling and Simulation			4567		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	JMASS: Software Development					5,513	6,682	6,164		
(U)	JMASS: Travel					150	150	150		
(U)	Total					5,663	6,832	6,314		
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	Various (JMASS)	Various				5,663	6,832	6,314	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
<u>Subtotals</u>					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development					5,663	6,832	6,314	TBD	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project					5,663	6,832	6,314	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation				PROJECT 5004	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5004 Joint Model Transition (JMT)	0	392	404	411	418	420	425	Continuing	TBD
<p>In, FY2002, Project 675004, Joint Model Transition (JMT) efforts transferred from PE 0308601F, Modeling & Simulation Support, Project 671011, Legacy Model Transition (LMT) in order to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <u>A. Mission Description</u> Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as Legacy Model Transition) supports the development and upgrade of R&D 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 joint applicability and acceptance.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$156 Develop and integrate service analysis models into next generation joint models. (U) \$154 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM). (U) \$82 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs. DSMs digitally represent weapon system platforms and are used to evaluate existing platform capabilities against new threats, ability to upgrade weapon systems to satisfy new requirements, etc. Results of AoAs using DSMs are used as a decision tool to determine future weapon system developments and/or upgrades. (U) \$392 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$100 Develop and integrate service analysis models into next generation joint models (U) \$218 Develop extended/enhanced analytical capabilities for AF Standard Digital System Models to meet emerging analytical challenges; exploiting new and developmental analytical and technological methods and techniques supporting campaign, mission, and engagement-level operational analyses, experimentation, and decision support tools. This is a continuation of the requirements/cost-benefit analysis for the Next Generation</p>									
Project 5004	Page 12 of 17 Pages				Exhibit R-2A (PE 0207601F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation				PROJECT 5004		
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2003 (\$ in Thousands) Continued</u>										
Mission Model (NGMM).										
(U) \$86 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs. DSMs digitally represent weapon system platforms and are used to evaluate existing platform capabilities against new threats, ability to upgrade weapon systems to satisfy new requirements, etc. Results of AoAs using DSMs are used as a decision tool to determine future weapons system developments and/or upgrades.										
(U) \$404 Total										
(U) <u>B. Project Change Summary</u> Project transferred from PE 0308601F in FY02										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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) AF RDT&E								Continuing	Continuing	
(U) Other APPN										
(U) <u>D. Acquisition Strategy</u> The funds are provided to the Office of Aerospace Studies (OAS), GSA Heartland Contract for Analysis of Alternative Studies for analytical and digital system models and for the advancement and capability extension of analytic models and digital system models. AF/XOCA will oversee a prioritization process for contract selection and development effort.										
(U) <u>E. Schedule Profile</u>										
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4	
(U) Joint Accreditation Support Activity (Phase 1)						*				
(U) Joint Accreditation Support Activity (Phase 2)							X			
(U) Develop Digital System Models to support AoAs								X		
(U) Develop Next Generation Joint Models									X	
(U) Develop/Extend Enhance AF Analytical Models									X	
Project 5004										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development				0207601F USAF Modeling and Simulation			5004			
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Contractor Support					0		313		318
(U)	Program Management Suppor					0		32		35
(U)	Travel					0		47		51
(U)	Total					0		392		404
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various				392		404	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
<u>Subtotals</u>					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development						392	404	TBD	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project						392	404	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation				PROJECT 5005	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5005 Executive Agent For Air /Space Natural Environment	0	821	919	934	952	980	1,001	Continuing	TBD
<p>In FY2002, Project 675005, Executive Agent For Air/Space Natural Environment efforts transferred from PE 0308601F, Modeling & Simulation Support, Project 674566, Executive Agent for Air/Space Natural Environment to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <u>A. Mission Description</u> Air Force Director of Weather (AF/XOW) is designated as the DoD Modeling and Simulation Executive Agent (MSEA) for Air and Space Natural Environment (ASNE). This program provides funds for MSEA joint wargaming architecture, data base, model development support for Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and other joint M&S program offices. Primary users will be unified commanders and service components for use in joint exercises involving air, ground, sea, and space campaigns.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$135 Space Weather Prototyping and Integration (U) \$527 Production Center Integration (U) \$159 Air/Land Battlefield Integration (U) \$821 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$350 Space Weather Prototyping and Integration (U) \$359 Production Center Integration (U) \$210 Air/Land Battlefield Integration (U) \$919 Total</p> <p>(U) <u>B. Project Change Summary</u> Project transferred from PE 38601F in FY02</p>									
Project 5005			Page 15 of 17 Pages				Exhibit R-2A (PE 0207601F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation						PROJECT 5005			
(U) C. Other Program Funding Summary (\$ in Thousands)														
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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) AF RDT&E								Continuing			Continuing			
(U) Other APPN														
(U) D. Acquisition Strategy														
The Executive Agent for Air & Space Natural Environment will develop, prototype, and integrate the current suite of production and research grade models for Service and Joint distributed simulation models. The majority of efforts are executed and managed through the DoD laboratory system.														
(U) E. Schedule Profile														
				<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>			
			1	2	3	4	1	2	3	4	1	2	3	4
(U) ESG IOC								X						
(U) Weather Scenario Production IOC								X						
(U) Warfighter Weather Effects IOC										X				
(U) Weather Scenario Production FOC														X
(U) Space Environmental Effects IOC									X					
(U) Ionospheric Effects FOC											X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0207601F USAF Modeling and Simulation				5005		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Software Development					0		416		473
(U)	Lab Overhead/Management					0		90		120
(U)	Prototyping					0		290		296
(U)	Travel					0		25		30
(U)	Total					0		821		919
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various				821	919	Continuing		TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development							821	919	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project							821	919	TBD	TBD