

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>February 2003</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>					
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	26,889	22,396	8,483	8,577	8,646	8,756	8,909	9,038	Continuing	TBD
1008 National Air and Space Warfare Model (NASM)	18,844	14,841	0	0	0	0	0	0	0	97,510
4567 Joint Modeling and Simulation System (JMASS)	6,832	6,245	6,164	5,257	5,329	5,419	6,970	7,109	Continuing	TBD
5004 Joint Model Transition (JMT)	392	400	403	412	410	414	0	0	Continuing	TBD
5005 Executive Agent For Air /Space Natural Environment	821	910	918	938	956	975	0	0	Continuing	TBD
5122 C4ISR Warfighting Integration	0	0	998	1,970	1,951	1,948	1,939	1,929	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(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 readiness training simulation used to train Combatant Commanders, 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.

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 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

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**07 - Operational System Development**

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**0207601F USAF Modeling and Simulation****(U) A. Mission Description Continued**

development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. AF is the Executive Agent for Air & Space Natural Environment (ASNE) which serves the M&S community as subject matter expert 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), Missile Defense Agency (MDA), 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. C4ISR Warfighting Integration will enable the oversight of the development and integration of M&S technologies to accurately portray C4ISR assets at USAF Wargaming & Simulation Centers. 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 Air Logistics Command (ALC) Modeling and Simulation programs are funded in this PE.

**(U) B. Budget Activity Justification**

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	25,345	21,895	8,483	
(U) Appropriated Value	30,845	21,895		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-2,559	-283		
b. Small Business Innovative Research	-720			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-620	784		
e. Rescissions	-57			
(U) Adjustments to Budget Years Since FY 2003 PBR				
(U) Current Budget Submit/FY 2004 PBR	26,889	22,396	8,483	TBD

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

(U) Significant Program Changes:

Not applicable.

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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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
1008 National Air and Space Warfare Model (NASM)	18,844	14,841	0	0	0	0	0	0	0	97,510

(U) **A. Mission Description**

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, Combatant Commanders, 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.

(U) **FY 2002 (\$ in Thousands)**

- (U) \$0 Accomplishment/Planned Program
- (U) \$13,369 Continued development of specific air objects to support JSIMS architecture.
- (U) \$2,607 Continued NASM integration effort and operate the program management office
- (U) \$1,000 Upgraded STORM. This task will be realigned under Project 675004, Joint Model Transition.
- (U) \$1,943 Executed the Congressionally directed Oklahoma City ALC Modeling and Simulation program. The funds were realigned under PE 78026F, PRAM project.
- (U) \$18,919 Total

(U) **FY 2003 (\$ in Thousands)**

- (U) \$0 Accomplishment/Planned Program
- (U) \$12,583 Complete VRM 1.0 Validation Test, continue development of VRM 2.0 air and space objects and process models to meet JSIMS integrated master development schedule; initial development of VRM 3.0 air and space objects and process models
- (U) \$2,258 Continue NASM integration effort and operate the program management office
- (U) \$14,841 Total

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BUDGET ACTIVITY

07 - Operational System Development

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0207601F USAF Modeling and Simulation

PROJECT

1008

(U) **A. Mission Description Continued**(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishment/Planned Program

(U) \$0 Total

(U) **B. Project Change Summary**

Not Applicable

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									Continuing	Continuing
(U) Other APPN									Continuing	Continuing

(U) **D. Acquisition Strategy**

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).

(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</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					*							
(U) Version 1.0 Validation Test								X				

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0207601F USAF Modeling and Simulation				1008		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
							<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	
(U)	Software development						13,369	12,583		0
(U)	Program Management/Contractor Support						2,607	2,258		
(U)	Congressional Add; Synthetic Theater Operations Research Model (STORM) upgrade						1,000			
(U)	Oklahoma City ALC Modeling and Simulation programs						1,943			
(U)	Total						18,919	14,841		0
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
	<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>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	Raytheon (NASM)	CPAF	3 Mar 97	74,541	74,541	17,135	13,312	12,583	0	0
	Raytheon (AWSIM/R)	CPAF	7 Apr 94	9,876	9,876	11,454	0	0	0	0
	Hughes (AWSIM/R)	CPAF	2 Jun 94	4,676	4,676	4,059	0	0	0	0
	TRW (AFSOM)	CPAF	12 Dec 97	39	39	39	0	0	0	0
	SysSimSolutions (STORM)	FFP	11 Aug 00	1,623	1,623	0	1,000	0	0	0
	Oklahoma City ALC	Various	Various	2,000	2,000	0	2,000	0	0	0
	Modeling and Simulation									
	Task									
	<u>Support and Management Organizations</u>									
	Tech Eng Mgt Spt (TEMS)	Del Order	Various	15,413	15,413	8,082	1,215	1,008	0	0
	/ITSP									
	MITRE	Contract Mod	Various	13,200	13,200	5,869	1,142	1,000	0	0
	Other*	Various	Various	19,180	19,180	17,112	250	250	0	0
	*Includes Prototype Contracts									
	<u>Test and Evaluation Organizations</u>									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT
07 - Operational System Development		0207601F USAF Modeling and Simulation				1008
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development		32,687	16,312	12,583	0	61,582
Subtotal Support and Management		31,063	2,607	2,258	0	35,928
Subtotal Test and Evaluation						
Total Project		63,750	18,919	14,841	0	97,510

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07 - Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT

4567

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4567 Joint Modeling and Simulation System (JMASS)	6,832	6,245	6,164	5,257	5,329	5,419	6,970	7,109	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. JMASS will conduct concept exploration of the Joint Synthetic Battlespace - AF (JSB-AF) to expand the use of models and simulations across multiple user communities to include Distributed Mission Operations (DMO).

(U) FY 2002 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program  
 (U) \$4,732 Continued JMASS Legacy Model Transition and Development  
 (U) \$2,100 Continued Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)  
 (U) \$6,832 Total

(U) FY 2003 (\$ in Thousands)

(U) \$0 Accomplishment/Planned Program  
 (U) \$4,145 Continued JMASS Legacy Model Transition and Development  
 (U) \$2,100 Continued Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)  
 (U) \$6,245 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishment/Planned Program  
 (U) \$3,314 Continue JMASS and Training Toolkit Legacy Model Transition and Development  
 (U) \$350 Continue Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)  
 (U) \$2,500 JSB-AF Concept Exploration  
 (U) \$6,164 Total

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07 - Operational System Development

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0207601F USAF Modeling and Simulation

PROJECT

4567

(U) **B. Project Change Summary**

Not applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									Continuing	Continuing
(U) Other APPN										

(U) **D. Acquisition Strategy**

All major contracts for JMASS model development will be awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</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) Implement JMASS Architecture at test facilities										X	X	X
(U) Develop/Extend enhanced AF system models										X	X	X
(U) JSB-AF Concept Exploration									X			X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development				0207601F USAF Modeling and Simulation					4567	
(U) A. Project Cost Breakdown (\$ in Thousands)										
				FY 2002		FY 2003		FY 2004		
(U) JMASS: Software Development/Interface Standards Development				6,682		6,095		6,014		
(U) JMASS: Travel				150		150		150		
(U) Total				6,832		6,245		6,164		
(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>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2002</u>
<u>Product Development Organizations</u>										<u>Budget</u>
Various		Various		N/A		N/A		N/A		<u>Budget</u>
<u>Support and Management Organizations</u>										<u>FY 2002</u>
<u>Test and Evaluation Organizations</u>										<u>FY 2003</u>
										<u>FY 2004</u>
										<u>Budget to</u>
										<u>Complete</u>
										<u>Total</u>
										<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project										

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07 - Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT

5004

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5004 Joint Model Transition (JMT)	392	400	403	412	410	414	0	0	Continuing	TBD

(U) **A. Mission Description**

Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) project (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.

Digital System Models (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) **FY 2002 (\$ in Thousands)**

- (U) \$0 Accomplishments/Planned Program
- (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.
- (U) \$392 Total

(U) **FY 2003 (\$ in Thousands)**

- (U) \$0 Accomplishments/Planned Program
- (U) \$100 Develop and integrate service models according to M&S architecture roadmap.
- (U) \$218 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).
- (U) \$82 Develop comprehensive Digital System Models (DSMs) and Simulations to support potential development programs.
- (U) \$400 Total

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**07 - Operational System Development**

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**0207601F USAF Modeling and Simulation**

PROJECT

**5004**(U) **A. Mission Description Continued**(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program

(U) \$100 Develop and integrate service models according to M&amp;S architecture roadmap.

(U) \$218 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).

(U) \$85 Develop comprehensive Digital System Models (DSMs) and Simulations to support potential development programs.

(U) \$403 Total

(U) **B. Project Change Summary**

Not applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									Continuing	
(U) Other APPN										

(U) **D. Acquisition Strategy**

The funds are provided to the Office of Aerospace Studies (OAS) and various vendors for the advancement and capability extension of Digital System Models (DSMs) and Simulations.

(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Joint Accreditation Support Activity (Phase 1)	*											
(U) Joint Accreditation Support Activity (Phase 2)			*									
(U) Develop Digital System Models (DSMs)				*				X				X
(U) Develop Next Generation Joint Models			*									
(U) Develop/Extend Enhance AF Models			*				X				X	
(U) Develop/Implement M&S Architecture						X				X		

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BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0207601F USAF Modeling and Simulation				5004	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
							<u>FY 2002</u>		<u>FY 2003</u>	<u>FY 2004</u>
(U)	Contractor Support						313		314	313
(U)	Program Management Suppor						32		35	38
(U)	Travel						47		51	52
(U)	Total						392		400	403
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various	N/A	N/A		392	400	403	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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						392	400	403	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project						392	400	403	TBD	TBD

Project 5004

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## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0207601F USAF Modeling and Simulation

PROJECT

5005

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5005 Executive Agent For Air /Space Natural Environment	821	910	918	938	956	975	0	0	Continuing	TBD

(U) **A. Mission Description**

Air Force Director of Weather (AF/XIW) 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.

(U) **FY 2002 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program  
 (U) \$135 Continued Space Weather Prototyping and Integration  
 (U) \$527 Continued Production Center Integration  
 (U) \$159 Continued Air/Land Battlefield Integration  
 (U) \$821 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program  
 (U) \$0 Continued Develop/Extend Enhance AF Analytical Models  
 (U) \$350 Continued Space Weather Prototyping and Integration  
 (U) \$350 Continued Production Center Integration  
 (U) \$210 Continued Air/Land Battlefield Integration  
 (U) \$910 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program  
 (U) \$365 Continue Space Weather Prototyping and Integration  
 (U) \$343 Continue Production Center Integration  
 (U) \$210 Continue Air/Land Battlefield Integration

Project 5005

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Exhibit R-2A (PE 0207601F)

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UNCLASSIFIED

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207601F USAF Modeling and Simulation**

PROJECT

**5005**(U) **A. Mission Description Continued**(U) **FY 2004 (\$ in Thousands) Continued**

(U) \$918 Total

(U) **B. Project Change Summary**

Not applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									Continuing	
(U) Other APPN										

(U) **D. Acquisition Strategy**

All major contracts under ASNE will be awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ESG IOC		*										
(U) Weather Scenario Production IOC		*							X			
(U) Warfighter Weather Effects IOC				*								
(U) Weather Scenario Production FOC									X			
(U) Space Environmental Effects IOC			*								X	
(U) Ionospheric Effects FOC						X						
* - Completed												
X - Event												

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0207601F USAF Modeling and Simulation					5005	
(U) A. Project Cost Breakdown (\$ in Thousands)											
					FY 2002		FY 2003		FY 2004		
(U) Software Development					416		464		467		
(U) Lab Overhead/Management					90		120		125		
(U) Prototyping					290		296		291		
(U) Travel					25		30		35		
(U) Total					821		910		918		
(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>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2002</u>	
<u>Product Development Organizations</u>											
Various		Various		Various				821		910	
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
<u>Subtotals</u>								<u>Total Prior</u>		<u>Budget</u>	
								<u>to FY 2002</u>		<u>FY 2002</u>	
										<u>FY 2003</u>	
										<u>FY 2004</u>	
										<u>Budget to</u>	
										<u>Complete</u>	
										<u>Total</u>	
										<u>Program</u>	
Subtotal Product Development										821	
Subtotal Support and Management										910	
Subtotal Test and Evaluation										918	
Total Project										TBD	
										TBD	

Project 5005

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## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207601F USAF Modeling and Simulation**

PROJECT

**5122**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5122 C4ISR Warfighting Integration	0	0	998	1,970	1,951	1,948	1,939	1,929	0	0

(U) **A. Mission Description**

Oversee the development and integration of next generation M&S technologies supporting the accurate portrayal of C4ISR assets at USAF Wargaming and Simulation Centers. Conduct technical alignments and assessments of acquisition programs to ensure programs are accurately modeling C4ISR assets and their impact on the joint battlespace. Manage development of future C4ISR M&S roadmaps and sequencing plans to ensure programs are fully interoperable and integrate into a common Joint Synthetic Battlespace-AF (JSB-AF).

(U) **FY 2002 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Activity  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Activity  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Activity  
 (U) \$998 C4ISR Warfighter Integration  
 (U) \$998 Total

(U) **B. Project Change Summary**

Not applicable.

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

07 - Operational System Development

0207601F USAF Modeling and Simulation

5122

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										

(U) D. Acquisition Strategy

All major contracts under C4ISR Warfighting Integration will be awarded after full and open competition.

(U) E. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Integrate Core Structure - requirements development										X		

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
										February 2003
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT
07 - Operational System Development					0207601F USAF Modeling and Simulation					5122
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U) Software Development					0		0		768	
(U) Contractor Support									157	
(U) Program Management Support									73	
(U) Total					0		0		998	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<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>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2002</u>
										<u>Budget</u>
										<u>FY 2002</u>
										<u>Budget</u>
										<u>FY 2003</u>
										<u>Budget</u>
										<u>FY 2004</u>
										<u>Budget to</u>
										<u>Complete</u>
										<u>Total</u>
										<u>Program</u>
<u>Product Development Organizations</u>										
Det 4, AFC2TIG		1 Jan 90		N/A		N/A		0		0
								0		998
								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>to FY 2002</u>		<u>FY 2002</u>		<u>FY 2003</u>	
									<u>Budget</u>	
									<u>FY 2004</u>	
									<u>Budget to</u>	
									<u>Complete</u>	
									<u>Total</u>	
									<u>Program</u>	
<u>Subtotals</u>										
Subtotal Product Development					0		0		0	
Subtotal Support and Management									998	
Subtotal Test and Evaluation									TBD	
Total Project					0		0		0	
									998	
									TBD	
									TBD	

Project 5122

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