

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	1,090	1,069	1,188	1,228	1,329	1,356	1,385	Continuing	Continuing
1011 Joint Model Transition (JMT) Program	0	357	371	390	396	406	414	423	Continuing	Continuing
4566 Executive Agent for Air/Space Natural Environment	0	733	698	798	832	923	942	962	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

This PE 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 funds the upgrades to selected R&D legacy 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. PE also contains O&M funding for the AF portion of Aggregate Level Simulation Protocol (ALSP); Data Standards; Advanced Connectivity; M&S Resource Repository (MSRR); model Verification, Validation, and Accreditation (VV&A); and High Level Architecture (HLA).

(U) B. Budget Activity Justification:

This program is in budget activity 7 - Operational System Development, because these funds support development activity for the AF as executive agent for air/space natural environment and continued upgrade of AF legacy models.

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

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) FY 1999 President's Budget	0	1,093	1,088	1,210	Continuing
(U) Appropriated Value		1,093			
(U) Adjustments to Appropriated Value					
a. Cong Reductions		-3			
b. SBIR					
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogramming					
(U) Adjustments to Budget Years Since FY 1999 PB			-19	-22	
(U) Current Budget Submit/FY 2000 PB	0	1,090	1,069	1,188	Continuing

(U) Significant Program Changes: Not Applicable.

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 1011
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
1011 Joint Model Transition (JMT) Program	0	357	371	390	396	406	414	423	Continuing	Continuing

(U) A. Mission Description

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 JMT Program supports the upgrade of R&D funded legacy models selected through a board process. The selection process allows the board to influence the direction of legacy model development and interation for the modeling and simulation community. Emphasis is placed on joint applicability and acceptance.

(U) FY 1998 (\$in Thousands):

(U) FY 1999 (\$ in Thousands):

- (U) \$ 164 Migate selected legacy analysis models to next generation joint models.
- (U) \$ 128 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).
- (U) \$ 25 Develop comprehensive DSM plans for selected acquisition programs.
- (U) \$ 40 Support planning, executing, reporting of selected AoA studies.
- (U) \$ 357 Total

(U) FY 2000 (\$in Thousands):

- (U) \$ 143 Migate selected legacy analysis models to next generation joint models.
- (U) \$ 100 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).
- (U) \$ 78 Develop comprehensive DSM plans for selected acquisition programs.
- (U) \$ 50 Support planning, executing, reporting of selected AoA studies.
- (U) \$ 371 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	0308601F Modeling and Simulation Support	1011
<p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none">- (U) \$ 118 Migate selected legacy analysis models to next generation joint models.- (U) \$ 100 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).- (U) \$ 122 Develop comprehensive DSM plans for selected acquisition programs.- (U) \$ 50 Support planning, executing, reporting of selected AoA studies.- (U) \$ 390 Total <p>(U) B. <u>Project Change Summary - Description of Significant Changes:</u> Not Applicable.</p>		
Project 1011	Page 4 of 12 Pages	Exhibit R-2A (PE 0308601F)

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 1011
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(U) C. Other Program Funding Summary (\$ in Thousands)
N/A

(U) D. Acquisition Strategy:
The funds are provided to the Office of Aerospace Studies (OAS), Kirtland AFB, NM, for contract actions in the development of the Next Generation Mission Model (NGMM), Joint Model Transition Plan, and Analysis of Alternatives (AoA) studies for analysis models and digital system models. OAS will oversee a prioritization process for contract selection and development effort.

(U) E. Schedule Profile

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Fund Next Generation Mission Model project activities	X				X				X				X			
(U) Fund selected AoA studies for standard analysis toolkit	X				X				X				X			
(U) Transition of current legacy models				X				X				X				X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 1011
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(U) A. Project Cost Breakdown (\$ in Thousands)

Joint Model Transition (JMT) Program	<u>FY1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Cost Categories				
(U) a. Contractor Support	0	292	292	311
(U) b. Program Management Support		25	30	30
(U) c. Travel		40	49	49
(U) Total	0	357	371	390

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

Performing Organizations:

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
Various	Various	Various			0	357	371	390	396	continuing	continuing

Support and Management Organizations

None

Test and Evaluation Organizations

None

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999			
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support				PROJECT 1011		
(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)										
Government Furnished Property: N/A										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
Subtotal Product Development				0	357	371	390	396	continuing	continuing
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project				0	357	371	390	396	continuing	continuing

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 4566
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4566 Executive Agent for Air/Space Natural Environment	0	733	698	798	832	923	942	962	Continuing	Continuing

(U) A. Mission Description

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.

(U) FY 1998 (\$ in Thousands):

(U) FY 1999 (\$ in Thousands):

- (U) \$ 283 Space weather model development
- (U) \$ 55 Production center model implementation
- (U) \$ 395 Air/Land battlefield integration
- (U) \$ 733 Total

(U) FY 2000 (\$ in Thousands):

- (U) \$ 118 Space weather development, prototyping, and integration
- (U) \$ 430 Production center implementation
- (U) \$ 150 Air/Land battlefield integration
- (U) \$ 698 Total

(U) FY 2001 (\$ in Thousands):

- (U) \$ 135 Space weather prototyping and integration
- (U) \$ 513 Production center implementation
- (U) \$ 150 Air/Land battlefield integration
- (U) \$ 798 Total

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 4566
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(U) **B. Project Change Summary - Description of Significant Changes:** Not Applicable.

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

(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 to support Joint and Service specific distributed simulation models. The majority of efforts are executed and managed through the DoD laboratory system.

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 4566
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(U) **E. Schedule Profile**

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Architecture – ESG IOC							X									
(U) Architecture - ESG FOC													X			
(U) Models – CSSMS FOC													X			
(U) Models – ISM IOC																X

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 4566
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(U) A. Project Cost Breakdown (\$ in Thousands)

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Cost Categories				
(U) a. Software Development	0	369	323	265
(U) b. Lab Overhead/Management		77	70	80
(U) c. Prototyping		262	280	428
(U) d. Travel		25	25	25
(U) Total	0	733	698	798

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program
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Product Development Organizations

Various	Various	Various			0	733	698	798	832	continuing	continuing
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Support and Management Organizations

None

Test and Evaluation Organizations

None

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308601F Modeling and Simulation Support	PROJECT 4566
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(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)

Government Furnished Property: N/A

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
Subtotal Product Development				0	733	698	798	832	continuing	continuing
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project				0	733	698	798	832	continuing	continuing