

UNCLASSIFIED

EXHIBIT R-2 FY2001 RDT&E, N BUDGET ITEM JUSTIFICATION

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Naval Modeling and Simulation

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2222 Naval Modeling & Simulation	0	12,054	9,106	8,418	8,645	11,576	12,030	Cont	Cont

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Funds the efforts of Navy Modeling and Simulation (M&S) Management Office and the Department of the Navy Technical Support Group (TSG). Supports technical and management initiatives directed by Congress, DoD and SECNAV with the aim of bringing organization and focus to the development and use of M&S tools throughout Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S; represents Navy interests in Joint/other Agency. Funds efforts to define and coordinate execution of a Navy M&S program to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Efforts are organized around 4 product areas: (1) Engineering Studies and Analysis, to define the feasibility and applicability of proposed standards to Navy and to investigate service unique requirements for standards or guidance; (2) Products and Services, to develop the policy, standards, and common tools and services necessary to guide more efficient development and use of M&S across Navy; this includes development and management of the Navy M&S Information System (NMSIS), Navy counterpart to the DOD M&S Resource Repository, to provide a central M&S information resource to reduce stovepiped development, promote tool reuse and support informed M&S investment decisions; (3) M&S Quality Assurance Program, to establish and manage a disciplined process of model verification, validation and accreditation (VV&A) required by current directives; (4) Simulation Experiments, to test distributive simulation technology in fleet exercises, experiments, and pilot efforts which demonstrate and examine the value and limitations of proposed standards (such as High Level Architecture, HLA, and Simulation Based Acquisition, SBA) to mission and program requirements.

Note: In FY 2000 a Technical Change moves the Naval Modeling and Simulation X2222 Project from Program Element 0605853N to Program Element 0308601N in order to more accurately describe the Naval Modeling and Simulation Project.

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B. (U) PROGRAM CHANGE SUMMARY: FY 99 (SEE PE0605853N); FY 2000 Increase \$2,500K SPAWAR Modeling & Simulation Initiative; Decrease \$-67K Congressional Reduction, \$176K Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 Usc 638; FY 2001 Decrease \$-416K MUOS; SSP (Contract) -\$8K, NWCF Rates - Naval Research Laboratory -\$51K, NWCF Rates - NCCOSC -\$4K, NWCF Rates - NUWC +\$16K, NWCF Rates - NAWC +\$5K, SSP-NUWC Functionality Assessment -\$1K, SSP-NUWC Contract Efficiencies -\$3K, SSP-NAWC A-76 (Cost Reimb Savings) -\$11K, SSP-NAWC Functionality Assessment (Cost Reimb) -\$11K, ICC 0610 NSWC +\$2K, ICC 0612 NUWC +\$1K, ICC 0614 SPAWAR +\$1K, Nonpay Purchase Inflation -\$67K, Active Navy Ops -\$24K.

(U) OTHER PROGRAM FUNDING SUMMARY:

	FY1999	FY2000	FY2001
O&M,N PE0204662N/1C1C (Partial)			
	634	1,219	1,077

(SEE PE 0605853N)

(U) RELATED RDT&E: Not applicable.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

(U) N/A See PE0605853N

2. (U) FY 2000 PLAN:

- (U) (\$2,908) Engineering Studies and Analysis: Conduct engineering studies and analysis aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy and at investigating service unique requirements for standards or guidance. Individual study thrusts will focus on developing or evaluating approaches to optimize training, assessments and acquisition functional/mission objectives through more efficient development and use of M&S. Develop methodologies and standards for modeling communication networks and information systems with the overarching objective of facilitating the development of a core, reusable, communications M&S capability which supports the full range of architecture and engineering design and analysis requirements across Navy. Provide a Modeling and Simulation

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degree program through the Naval Postgraduate School, Modeling, Virtual Environments and Simulation (MOVES) curriculum.

- (U) (\$3,641) Products and Services: Continue development of common services, tools, and data bases. Develop and enhance the Navy Modeling and Simulation Information System (NMSIS), through an evolutionary process, integrating standards, standard models, standard data and connectivity to support all Naval assessments, training, acquisition and operational communities. Manage and maintain the Navy Modeling and Simulation Information System (NMSIS), as a central M&S information resource to reduce stovepiped development, promote standardization and reuse and support informed M&S investment decision making across Navy. Provide the necessary planning and coordination of M&S efforts across the Navy M&S Functional Areas, other Services, OSD, Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within the Navy. Provide annual updates to the Naval M&S Catalog, Master Plan, and Investment Strategy.
 - (U) (\$1,235) M&S Quality Assurance Program: Continue to implement and manage the M&S Quality Assurance development of the Verification, Validation, and Accreditation (VV&A) process and guidelines for modeling, simulation, and data. Continue implementation of the VV&A process and review on both new and legacy M&S plans and reports. Develop and maintain the Naval M&S VV&A repository. Establish and implement a VV&A training curriculum for developers and accreditors. Provide annual VV&A assessment to the CNO.
 - (U) (\$4,270) Simulation Experiments: Support Fleet Exercise simulation experiments and the application of distributed simulation to a wide variety of operational, research and development, training, test and evaluation exercises. Develop and integrate appropriate models and simulations into the Fleet Battle Experiments, FBEs. Develop a series of simulation projects to test and evolve the standards for models, interfaces, data, and tools necessary to enable the seamless access and use of operationally relevant M&S to support the range of Navy training, warfare assessments and acquisition requirements.
3. (U) FY 2001 PLAN:
- (U) (\$1,713) Engineering Studies and Analysis: Conduct engineering studies and analysis aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy and at investigating service unique requirements for standards or guidance. Individual study thrusts will focus on developing or evaluating approaches to optimize training,

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assessments and acquisition functional/mission objectives through more efficient development and use of M&S. Develop methodologies and standards that will result in model and data reusability and interoperability through the formulation of a technical framework. These standards will support the full range of architecture and engineering design and analysis requirements across Navy. Provide a Modeling and Simulation degree program through the Naval Postgraduate School, Modeling, Virtual Environments and Simulation (MOVES) curriculum.

- (U) (\$3,183) Products and Services: Continue development of common services, tools, and data bases. Develop and enhance the Navy Modeling and Simulation Information System (NMSIS), through an evolutionary process, integrating standards, standard models, standard data and connectivity to support all Naval assessments, training, acquisition and operational communities. Manage and maintain the Navy Modeling and Simulation Information System (NMSIS), as a central M&S information resource to reduce stovepiped development, promote standardization and reuse and support informed M&S investment decision making across Navy. Provide the necessary planning and coordination of M&S efforts across the Navy M&S Functional Areas, other Services, OSD, Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within the Navy. Provide annual updates to the Naval M&S Catalog, Master Plan, and Investment Strategy.
- (U) (\$790) M&S Quality Assurance Program: Continue to implement and manage the M&S Quality Assurance development of the Verification, Validation, and Accreditation (VV&A) process and guidelines for modeling, simulation, and data. Continue to review both new and legacy M&S VV&A plans and reports. Develop and maintain the Naval M&S VV&A repository. Establish and implement a VV&A training curriculum for developers and accreditors. Provide annual VV&A assessment to the CNO.
- (U) (\$3,420) Simulation Experiments: Support Fleet exercises and experiments through the application of distributed simulation to a wide variety of operational, research and development, training, test and evaluation exercises. Develop and integrate appropriate models and simulations into the Fleet Battle Experiments, FBEs. Develop a series of simulation projects to test and evolve the standards for models, interfaces, data, and tools necessary to enable the seamless access and use of operationally relevant M&S to support the range of Navy training, warfare assessments and acquisition requirements.

C. (U) SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

Exhibit R-3 Cost Analysis (page 1)									Date FEB 2000			
APPROPRIATION/BUDGET ACTIVITY: 7				PROGRAM ELEMENT: 0308601N					PROJECT NAME AND NUMBER: Modeling & Simulation, X2222			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-99 Cost	FY-99 Award Date	FY-00 Cost	FY-00 Award Date	FY-01 Cost	FY-01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Navy M&S Info Sys Development	Various	Various	N/A	N/A	N/A	1768	TBD	1494	TBD	Cont.	Cont.	Cont.
Quality Assurance	Various	Various	N/A	N/A	N/A	1235	TBD	790	TBD	Cont.	Cont.	Cont.
Subtotal Product Development						3003		2284		Cont.	Cont.	Cont.
Remarks:												
M&S Services	Various	Various	N/A	N/A	N/A	1873	TBD	1689	TBD	Cont.	Cont.	Cont.
Subtotal Support						1873		1689		Cont.	Cont.	Cont.
Remarks												

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EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

Exhibit R-3 Cost Analysis (page 2)										Date: FEB 2000		
APPROPRIATION/BUDGET ACTIVITY: 7					PROGRAM ELEMENT: 0308601N					PROJECT NAME AND NUMBER: Modeling & Simulation, X2222		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-99 Cost	FY-99 Award Date	FY-00 Cost	FY-00 Award Date	FY-01 Cost	FY-01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Simulation Experiments	Various	Various	N/A	N/A	N/A	4270	TBD	3420	TBD	Cont.	Cont.	Cont.
Subtotal T&E						4270		3420		Cont.	Cont.	Cont.
Remarks												
Engineering Studies/Analyses	Various	Various		-	-	2908	TBD	1713	TBD	Cont.	Cont.	Cont.
Program Management										Cont.	Cont.	Cont.
Subtotal Management						2908		1713		Cont.	Cont.	Cont.
Remarks												
Total Cost				0		12054		9106		Cont.	Cont.	Cont.