

UNCLASSIFIED

EXHIBIT R-2 FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

(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 | |
|------------------------|--|------------------|------------------|------------------|------------------|------------------|------------------|-------------|---------------|--|
| R0149 | International Cooperative RDT&E | | | | | | | | | |
| | 1,638 | 1,976 | 1,961 | 2,022 | 2,033 | 2,060 | 2,149 | CONT. | CONT. | |
| R1767 | Naval War College/Center for Naval Warfare Studies | | | | | | | | | |
| | 2,641 | 2,302 | 2,564 | 2,603 | 2,649 | 2,705 | 2,760 | CONT. | CONT. | |
| X2221 | Assessment Program | | | | | | | | | |
| | 8,513 | 12,875 | 13,119 | 13,323 | 13,011 | 13,274 | 13,557 | CONT. | CONT. | |
| X2222 | Naval Modeling & Simulation | | | | | | | | | |
| | 7,740 | 0 | 0 | 0 | 0 | 0 | 0 | | 14,768 | |
| W2347 | Test and Evaluation Modeling and Simulation | | | | | | | | | |
| | 0 | 198 | 0 | 0 | 0 | 0 | 0 | 198 | 198 | |
| TOTAL: | 20,532 | 17,351 | 17,644 | 17,948 | 17,693 | 18,039 | 18,466 | CONT. | CONT. | |

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) provides management and technical support for several national and international projects:

(U) Project R0149 provides program management, execution, and support to implement a broad range of cooperative naval research and development (R&D) initiatives with allied and friendly nations. Potential cooperative programs are pursued to fulfill established operational requirements, enhance U.S./allied interoperability and standardization, obtain unique foreign technologies, and reduce U.S. developmental and production costs.

(U) Project R1767 provides funding for Naval War College (NWC) research activities, which serve as a focal point, stimulus, and major source of strategic and campaign thought within the Navy. These efforts generate strategy and campaign alternatives, provide for evaluation through wargaming

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methodologies, and provide recommendations to the Chief of Naval Operations (CNO) and fleet commanders regarding the formulation and execution of strategy.

(U) Project X2221 provides analytical and management support for the Planning/Assessment process. This project supports the development of annual Integrated Warfare Architectures (IWARS)/Chief of Naval Operations Program Assessment Memorandum (CPAM)/Joint Warfighting Capability assessments which provide the analytical underpinnings and basis for programmatic decisions made by the Navy's top leadership regarding integration of Navy warfare/support requirements.

(U) Project X2222 provides the overarching policy, coordination and technical support for Naval modeling focus, coordination and oversight. It enhances development and execution of a coordinated Naval M&S program, including distributed simulation tool development, M&S incorporation with C4I systems and simulation. This project responds to Congressional guidance to improve modeling and simulation embedded training systems, and an orderly process of model Verification, Validation and Accreditation required by current directives.

(U) Project W2347 This project enhances the Test and Evaluation (T&E) efforts of the Navy by providing policy, coordination, and technical support for the Modeling and Simulation (M&S) program. The mission is to promote and standardize modeling and simulation for interoperability and re-use within and between programs and across the Research Development Test and Evaluation community.) Test and Evaluation Modeling and Simulation (TEMS) is required to reduce the cost, schedule, and risk of acquisition programs by supporting the early integration of M&S capabilities into the T&E process.

B. (U) PROGRAM CHANGE SUMMARY: FY99 Inflation Savings (-\$80K), LOCO GPSI (-\$71), SBIR (-\$289), CMIS (+\$110), IWARS (+\$867), Program Restoral (+\$2,000K), miscellaneous Departmental adjustments (+\$322K). FY00 changes include Congressional across the Board Reduction (-\$96K) and SSST Competitive adjustments (-\$2,001K), \$285 Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. FY01 changes are miscellaneous Departmental adjustments (-\$45K).

NOTE: PROJECT X2222 TRANSITIONS TO PE 0308601N IN FY2000.

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149

**PROJECT TITLE : INTERNATIONAL
COOP RDT&E**

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 |
|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------|------------------|
| R0149 | 1,638 | 1,976 | 1,961 | 2,022 | 2,033 | 2,060 | 2,149 | CONT. | CONT. |

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides program management, execution, and support to implement a broad range of cooperative naval research and development (R&D) initiatives with allied and friendly nations. Potential cooperative programs are pursued to fulfill established operational requirements, enhance U.S./allied interoperability and standardization, obtain unique foreign technologies, and reduce U.S. developmental and production costs. Such efforts result in:

- (U) Development and negotiation of approximately 25 International RDT&E Agreements annually with allied and friendly nations.
- (U) Execution of over 300 information exchange annexes.
- (U) Participation in armaments cooperation for a including the Conference of NATO Armaments Directors groups (e.g., the NATO Naval Armaments Group), Senior National Representative (SNR) meetings, the Technical Cooperative Program and Scientific Committee National Representatives meetings.
- (U) Promote research initiatives at the NATO Supreme Allied Command Atlantic, Undersea Research Center (SACLANTCEN) in La Spezia, Italy in the areas of anti-submarine warfare (ASW), mine countermeasures (MCM), and littoral warfare.
- (U) Participation in the Engineering and Scientist Exchange Program (ESEP).

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149

PROJECT TITLE : INTERNATIONAL
COOP RDT&E

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$307) Continued to support Department of Navy (DoN) participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
- (U) (\$468) Continued to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate Data Exchange Agreements (DEAs) to target new technologies and expand, where appropriate, to include exchanges with Former Soviet Union (FSU) countries.
- (U) (\$519) Continued to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed International Agreements (Ias) for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
- (U) (\$100) Provided support to Acquisition Integrated Product Teams (IPTs) in evaluating international cooperative alternatives in development of DON programs as well as support to OSD International Cooperative Opportunity Group (ICOGs) regarding DON requirements and initiatives.
- (U) (\$16) Maintained a level of Navy participation in the ESEP at approximately three scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
- (U) (\$93) Continued to fund the efforts of System Commands (SYSCOMs) and laboratories in researching and negotiating international cooperative programs.
- (U) (\$135) Continued to fund DON efforts to promote research initiatives at the NATO SACLANTCEN in the areas of ASW, MCM, and littoral warfare.

R-1 Shopping List - Item No 141-4 of 141-19

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149

PROJECT TITLE : INTERNATIONAL
COOP RDT&E

2. (U) FY 2000 PLAN:

- (U) (\$470) Continue to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
- (U) (\$515) Continue to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.
- (U) (\$550) Continue to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
- (U) (\$75) Provide support to Acquisition IPTs in evaluating international cooperative alternatives in development of DON programs as well as support to OSD ICOGs regarding DON requirements and initiatives.
- (U) (\$291) Increase the level of Navy participation in the ESEP at approximately six scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
- (U) (\$75) Continue to fund the efforts of SYSCOMs and laboratories in researching and negotiating international cooperative programs.

3. (U) FY 2001 PLAN:

- (U) (\$500) Continue to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
- (U) (\$525) Continue to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.
- (U) (\$600) Continue to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
- (U) (\$75) Provide support to Acquisition IPTs in evaluating international cooperative alternatives in development of DON programs as well as support to OSD ICOGs regarding DON requirements and initiatives.

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149

PROJECT TITLE : INTERNATIONAL
COOP RDT&E

- (U) (\$186) Maintain a level of Navy participation in the ESEP at approximately six scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
- (U) (\$75) Continue to fund the efforts of SYSCOMs and laboratories in researching and negotiating international cooperative programs.

B. (U) Other Program Funding Summary

(U)RELATED RDT&E:

(U) P.E. 0603790D (Nunn Armaments Cooperation)

(U) P.E. 0605130D (Foreign Comparative Testing)

(U) P.E. 0603790N (NATO Cooperative Research and Development)

C. (U) Acquisition Strategy: Not Applicable

D. (U) Schedule Profile: Not Applicable

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R1767

PROJECT TITLE NWC Strategic
Studies Spt

(U) COST: (Dollars in thousands)

| PROJECT NUMBER & TITLE | FY 1999 ACTUAL | FY 2000 ESTIMATE | FY 2001 ESTIMATE | FY 2002 ESTIMATE | FY 2003 ESTIMATE | FY 2004 ESTIMATE | FY 2005 ESTIMATE | TO COMPLETE | TOTAL PROGRAM |
|--|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------|------------------|
| R1767 Naval War College/Center for Naval Warfare Studies | 2,641 | 2,302 | 2,564 | 2,603 | 2,649 | 2,705 | 2,760 | CONT. | CONT. |

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Naval War College (NWC) research activities serve as a focal point, stimulus, and major source of strategic and campaign thought within the Navy. These efforts generate strategy and campaign alternatives, provide for evaluation through wargaming methodologies, and provide recommendations to the Chief of Naval Operations (CNO) and fleet commanders regarding the formulation and execution of strategy.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$1,683) Conducted strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$871) Conducted major war games culminating in Global '99.
- (U) (\$87) Provided for selected NWC students to conduct advanced research projects.

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R1767

PROJECT TITLE NWC Strategic
Studies Spt

(U) FY 2000 PLAN:

- (U)(\$1,611) Conduct strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$627) Conduct major wargames culminating in Global '99.
- (U) (\$64) Provide for selected NWC students to conduct advanced research projects.

(U) FY 2001 PLAN:

- (U) (\$1,629) Conduct strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$819) Conduct major wargames culminating in annual Global Wargame, including maintenance of legacy Enhanced Naval Wargaming System and preparation for implementation of successor Joint Simulation System-Maritime.
- (U) (\$116) Provide for selected NWC students to conduct advanced research projects, including expanded opportunities for advanced research under the Mahan Scholars program.

- B. (U) Other Program Funding Summary: Not Applicable
- C. (U) Acquisition Strategy: Not Applicable
- D. (U) Schedule Profile: Not Applicable

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROJECT NUMBER: X2221

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT TITLE: Assessment Program

(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 |
|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------|------------------|
| X2221 Assessment Program | 8,513 | 12,875 | 13,119 | 13,323 | 13,011 | 13,274 | 13,557 | CONT. | CONT. |

- A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: X2221, Assessment Program provides analytical and management support to the Planning segment of the Navy Planning, Programming and Budgeting System (PPBS). This project supports the development of annual Integrated Warfare Architectures (IWARs) and Chief of Naval Operations Program Analysis Memoranda (CPAM) assessments, which provide analytical underpinnings/basis for programmatic decisions of the Navy's top leadership regarding the integration of all Navy warfare and support requirements. This program provides the Navy input to the Vice Chairman Joint Chiefs of Staff (VCJCS) led Joint Warfighting Capability Assessment (JWCA) process. Assessment program develops tools and analytical methodologies that assist in evaluating Navy programs and provides technical leadership for the analysis functional area of Naval Modeling and Simulation.

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DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221

PROJECT TITLE: Assessment Program

(U) PROGRAM ACCOMPLISHMENTS:

1. (U) FY 1999 ACCOMPLISHMENTS

- (U) (\$ 111) Developed, updated and maintained detailed level Navy Standard scenarios based on Defense Planning Guidance.
- (U) (\$ 110) Development of Congressional Information Management Systems (CIMS) which will track Congressional actions requested of the Department of the Navy.
- (U) (\$6,156) Developed Integrated Warfare Architectures (IWARs) and performed assessments and develop the Chief of Naval Operations Program Analysis Memoranda (CPAM). Areas of focus included; Air Dominance; Deterrence; Force Structure; Infrastructure; Manpower and Personnel; Training and Education; Power Projection; Readiness; Sea Dominance; Sensor Management/Information Superiority; Sustainment; Technology. Provided Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
- (U) (\$1,278) Continued to develop and accredit IWAR and CPAM - tools and improve analytic methodology.
- (U) (\$858) Using the standard simulation and database architecture developed by Naval Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools for the assessment process. Developed new tools that utilize models in the standard simulation and database architecture. Coordinated/supported Joint Analytical Model Improvement Program (JAMIP).

2. (U) FY 2000 PLAN:

- (U) (\$ 213) Develop, update and maintain detailed level Navy Standard scenarios based on Defense Planning Guidance.

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221

PROJECT TITLE: Assessment Program

- (U) (\$8,981) Develop Integrated Warfare Architectures (IWARs) and perform assessments and develop the Chief of Naval Operations Program Assessment Memorandum (CPAM). Areas of focus include Air Dominance; Deterrence; Force Structure; Infrastructure; Manpower Readiness; Sea Dominance; Sensor Management/Information Superiority; Sustainment; Technology. Provide Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
 - (U) (\$2,016) Continue to develop and accredit IWAR and CPAM tools and improve analytic methodology.
 - (U) (\$1,665) Using the standard simulation and database architecture developed by Naval Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Develop new tools that utilize models in the standard simulation and database architecture. Coordinate/support Joint Analytical Model Improvement Program (JAMIP).
3. (U) FY 2001 PLAN:
- (U) (\$212) Develop, update and maintain detailed level Navy Standard scenarios based on Defense Planning Guidance.
 - (U) (\$9,153) Develop Integrated Warfare Architectures (IWARs) and perform assessments and develop the Chief of Naval Operations Program Analysis Memoranda (CPAM). Areas of focus include Air Dominance; Deterrence; Force Structure; Infrastructure; Manpower and Personnel; Training and Education; Power Projection; Readiness; Sea Dominance; Sensor Management/Information Superiority; Sustainment; Technology. Provide Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
 - (U) (\$2,062) Continue to develop and accredit IWAR and CPAM tool and improve analytic methodology.

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221

PROJECT TITLE: Assessment Program

- (U) (\$1,692) Using the standard simulation and database architecture developed by Navy Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Develop new tools that utilize models in the standard simulation and database architecture. Coordinate/support Joint Analytical Model Improvement Program (JAMIP).
- B. (U) Other Program Funding Summary: Not Applicable
- C. (U) Acquisition Strategy: Not Applicable
- D. (U) Schedule Profile: Not Applicable

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EXHIBIT R-2A FY 2001 RDTE,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEB 2000

PROJECT NUMBER X2222

PROJECT TITLE: Navy Model & 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 | 7,740 | 0 | 0 | 0 | 0 | 0 | 0 | | 14,768 |

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. Effective FY98, efforts were 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 Joint Modeling and Simulation Systems (JMASS) 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.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

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EXHIBIT R-2A FY 2001 RDTE,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEB 2000

PROJECT NUMBER X2222

PROJECT TITLE: Navy Model &
Simulation

1. FY 1999 ACCOMPLISHMENTS

- (U) (\$1,373) Engineering Studies and Analysis: Developed and implemented the Navy strategy for the transition of Navy M&S to the OSD-mandated M&S interoperability standard, High Level Architecture (HLA). Led Navy HLA implementation planning, reported Navy compliance intentions to DoD and participated in the DoD HLA transition working group. Briefed Navy flags, intra and inter service forums on the issues and technical implications of Navy M&S compliance with HLA. Performed a set of study tasks that focused on the assessment of the adequacy of the Run Time Infrastructure (RTI) of the HLA. Developed a scriptable HLA test bed to provide the Navy with an independent method for evaluation of the HLA/RTI. Developed a set of attributes for designing modeling standards of communication networks and information systems. This was done in collaboration with the J6 Network Warfare Simulation (NETWARS) standards working group. Performed analysis of current operational communications infrastructure and derived a method to extract, process and archive information to support operational analysis capabilities through modeling and simulation. Developed an initial roadmap for migrating existing standalone training modeling capability into a more integrated, interoperable core suite of capability tailored to the Navy training requirements. The training study is directly applicable to the development of the M&S Investment Plan. Initiated and established a Modeling and Simulation degree program at the Naval Postgraduate School, Modeling, Virtual Environments and Simulation (MOVES) curriculum.

- (U) (\$2,427) Products and Services: Developed and provided an initial operational implementation of the web-based Navy Modeling and Simulation Information System (NMSIS), the Naval component of the DoD M&S resource repository (part of the DoD M&S Framework). Updated and provided user assistance and support on the Naval M&S Catalog; added HLA and Y2K compliance information for Navy systems. Supported planning and technical coordination of efforts across Navy M&S Functional Areas, other Services, OSD, Joint Staff, and other agencies to develop policies and procedures for M&S standardization. Coordinated and chaired Navy's M&S Working Group and Navy Flag M&S Steering Group; participated in the Defense M&S Office's M&S working group and the DoD M&S Executive Council, including separate forums for training, assessments acquisition; and coordination of technical reviews of joint programs and initiatives (JSIMS, JWARS, JMASS and NETWARS). Participated in select OSD and industry sponsored symposia. Developed draft of DoD and SECNAV-required Navy M&S Investment Plan and developed and coordinated final review and approval of SECNAV Instruction for Navy M&S VV&A.

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EXHIBIT R-2A FY 2001 RDTE,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEB 2000

PROJECT NUMBER X2222

PROJECT TITLE: Navy Model &
Simulation

- (U) (\$800) M&S Quality Assurance Program: Continued 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. Provided technical review on M&S VV&A plans and reports and provided subject matter expertise and advice on how to meet Navy policy requirements within existing fiscal and programmatic constraints. Develop and implemented an initial version of a web-based VV&A Handbook aimed at supporting program managers across the Navy. Establish and implement a VV&A training curriculum for developers and accreditors. Provide annual VV&A assessment to the CNO.

- (U) (\$3,140) Simulation Experiments: Provided Navy share of Services' contribution to maintenance of the simulation protocol needed to use Joint Training Confederation simulations in Joint Task Force Exercises. Ensured simulation of Naval forces and supported Navy participation in Joint exercises; supported Ulchi Focus Lens, Synthetic Theater of War, and United Endeavor. Identified initial suite of existing M&S tools to offer near term relevance and application to the goals of the Maritime Battle Center (MBC) and the ongoing evaluation of systems and technologies in reoccurring Fleet Battle Experiments (FBE). Initiated development of a Virtual Missile Range to support training needs of the Third Fleet. Provided M&S support to the Focused Logistics Wargame for the purpose of determining the adequacy of logistics in support of Peacetime Presence Operation, Multiple Military Operations Other Than War (MOOTW), Small-Scale Contingency (SSC), and Major Theater War scenarios. Initiated development of a seamless, integrated, physically consistent, ocean environment representation. Initiated Phase II of Maritime Virtual Environmental Data Specification (MARVEDS), initial analysis and feasibility of approach to developing an Information model, data format, data dictionary, algorithms, techniques, and database management system that can define and mediate the environmental data required to enable a virtual prototype. This type of standard for simulation environments is critical to enabling Simulation Based Acquisition (SBA). Participated in OSD effort to develop a definition, functional description, and implementation plan for simulation-based acquisition.

(U) FY 2000 PLAN: See PE0308601N

B. (U) Other Program Funding Summary:

O&M,N PE0204662N/1C1C (Partial)

FY 99

725

R-1 Shopping List - Item No 141-15 of 141-19

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDTE,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEB 2000

PROJECT NUMBER X2222

PROJECT TITLE: Navy Model &
Simulation

C. (U) Acquisition Strategy: Not Applicable

D. (U) Schedule Profile: Not Applicable

UNCLASSIFIED

EXHIBIT R-2A, RDT&E,N Project Justification

DATE FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

PROJECT NUMBER W2347

**PROJECT TITLE: Test Evaluation
Modeling &
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 |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------|------------------|
| W2347 Test and Evaluation Modeling and Simulation | 0 | 198 | 0 | 0 | 0 | 0 | 0 | 198 | 198 |

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project funding has been reduced based on higher Navy reprioritization requirements in FY2001 and out years. This project enhances the Test and Evaluation (T&E) efforts of the Navy by providing policy, coordination, and technical support for the Modeling and Simulation (M&S) program. The mission is to promote and standardize modeling and simulation for interoperability and re-use within and between programs and across the Research Development Test and Evaluation community. This also provides funds to incrementally establish the Joint Synthetic Test and Evaluation Battlespace (JSTEB) Joint Operational Requirements document. Test and Evaluation Modeling and Simulation (TEMS) is required to reduce the cost, schedule, and risk of acquisition programs by supporting the early integration of M&S capabilities into the T&E process.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: Budget Activity 6: This program is funded under Research, Development Test and Evaluation management support because it supports the operations and installations required for general research and development.

UNCLASSIFIED

EXHIBIT R-2A, RDT&E,N Project Justification

DATE FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROJECT NUMBER W2347

PROGRAM ELEMENT TITLE: Management, Technical & International Support

PROJECT TITLE: Test Evaluation Modeling & Simulation

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 PLAN:

- (U) (\$198) Provide minimum technical support to the Navy acquisition community using T&E modeling and simulation resources.

(U) B.. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

Related RDT&E

(U) P.E. 0604759N: Major T&E Investment

(U) P.E. 0605864N: Test and Evaluation Support

(U) C. ACQUISITION STRATEGY: Not Applicable

(U) D. SCHEDULE PROFILE: Not Applicable

UNCLASSIFIED

BUDGET ACTIVITY: 6

EXHIBIT R-3, FY2001 RDT&E Cost Analysis
 PROGRAM ELEMENT: 0605853N
 PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEB 2000
 PROJECT NUMBER W2347
 PROJECT TITLE: Test Evaluation
 Modeling &
 Simulation

| <u>Cost Categories:</u> | <u>Contract</u> | <u>Performing</u> | <u>Total</u> | <u>FY 1999</u> | | <u>FY 2000</u> | | <u>FY 2001</u> | | | <i>Target</i> <i>Value of</i> Contract | |
|--|-------------------|----------------------------------|------------------|----------------|--------------|----------------|--------------|----------------|--------------|-----------------|--|--------------|
| | <u>Method</u> | <u>Activity &</u> | <u>Prior Yrs</u> | <u>FY 1999</u> | <u>Award</u> | <u>FY 2000</u> | <u>Award</u> | <u>FY2001</u> | <u>Award</u> | <u>Cost to</u> | | <u>Total</u> |
| | <u>& Type</u> | <u>Location</u> | <u>Cost</u> | <u>Cost</u> | <u>Date</u> | <u>Cost</u> | <u>Date</u> | <u>Cost</u> | <u>Date</u> | <u>Complete</u> | | <u>Cost</u> |
| Subtotal Project Development | WX | NAWCAD, Patuxent River, MD | 0 | 0 | | 198 | 10/99 | | | 198 | 198 | |
| Remarks: Not Applicable | | | | | | | | | | | | |
| Subtotal Support | | | | | | | | | | | | |
| Remarks: Not Applicable | | | | | | | | | | | | |
| Subtotal Test & Evaluation: | | | | | | | | | | | | |
| Remarks: Not Applicable | | | | | | | | | | | | |
| Project Management | | | | | | | | | | | | |
| Subtotal Management: | | | | | | | | | | | | |
| Remarks: Not Applicable | | | | | | | | | | | | |
| Total Cost | | | 0 | 0 | | 198 | 10/99 | | | 198 | 198 | |