

UNCLASSIFIED

FY 2001 RDT&E,N Budget Item Justification Sheet

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROGRAM ELEMENT TITLE: SEW Architecture/Eng Support

(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
X0798 OTH Targeting	1,527	1,591	2,109	2,166	2,191	2,569	2,653	Cont.	Cont.
X2144 SEW Engineering	7,973	8,545	8,154	8,093	7,200	9,068	9,345	Cont.	Cont.
R2357 Maritime Battle Center	11,140	23,784	23,837	23,897	23,906	23,855	23,819	Cont.	Cont.
R2630 Adv Comm Info Tech	1,936	2,984	0	0	0	0	0	0	4,920
TOTAL	22,576	36,904	34,100	34,156	33,297	35,492	35,817	Cont.	Cont.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) contains four projects: Over-the-Horizon Targeting, Space and Electronic Warfare (SEW) Engineering, Maritime Battle Center, and Advanced Communications Information Technology (ACI). The projects are systems engineering non-acquisition programs with the objectives of developing, testing, and validating Naval Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures to support naval missions in Joint and Coalition Theater. The mission of this program element is carried out by multiple tasks that are used to ensure Naval C4ISR Command and Control Warfare (C2W) components of SEW are effectively integrated into the C4ISR architectures. The Program additionally ensures that (1) the composite operational capabilities of SEW systems (not the individual component systems) conform to the Naval C4ISR architecture as related to the objectives of National Defense Strategy and evolving joint visions and direction, such as Joint Vision 2010 (JV 2010), "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea," C4I For the Warrior, and the Defense Science Board Summer Study Task Force on Information Architecture for the Battlefield and are guided by CINC requirements; and (2) that SEW systems and systems integration effort involves leading-edge technology transfer of information processing technologies primarily through integration of government and commercial off-the-shelf (GOTS/COTS) products to enhance the Navy's operational capability, interoperability, flexible reconfiguration, as well as reduce costs. The Maritime Battle Center is a distributed organization consisting of concept development, experimentation and analysis coordinated by the Naval War College, and the Navy Warfare Development Command, and C4ISR technical and acquisition support coordinated by the Space and Naval Warfare Systems Command in FY99. For MBC, there will be a claimant change from Space and Naval Warfare Systems Command to Office of Naval Research, effective FY00. The MBC will also act as the Navy representative to the Joint Battle Center and the Battle Labs of other services.

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JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under DEMONSTRATION & VALIDATION because it develops and integrates hardware for experimental tests related to specific ship or aircraft applications. It also develops a virtual demonstration and validation environment across Navy for C4ISR.

B. (U) PROGRAM CHANGE FOR TOTAL P.E.:

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	19,804	35,170	35,912
- Appropriated Value		38,170	
- Execution Adjustments	3,283		
- Congressional Recission		- 204	
- Minor Program Adjustments		3,000	- 1,437
- Various Rate Adjustments	- 90		- 337
- SBIR/STTR Transfer	- 421	*	
- Strategic Sourcing Adjustment			- 38
- Program Adjustment		-1,062	
FY 2001 President's Budget Submission:	22,576	36,904	34,100

*\$112K is portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

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PROGRAM ELEMENT: 0604707N

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

(U) COST: (Dollars in Thousands)

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
X0798 OTH Targeting	1,527	1,591	2,109	2,166	2,191	2,569	2,653	Cont.	Cont.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Over-the-Horizon Targeting (OTH-T) program provides a virtual, global systems integration and test facility for Information Technology for the 21st Century (IT-21) C4ISR technology that supports the collection, transmission, correlation, and display of track data into a Common Operational Picture (COP) in support of warfighting requirements. This effort was originally undertaken to support targeting of over the horizon weapons such as the TOMAHAWK cruise missile. The common view of the battle space that was provided to the warfighter by OTH-T has been applied across the spectrum of warfare missions; however, the technology and doctrine on which it was based has changed radically in recent years. The result is that the first goal of the OTH-T program is to transition the OTH architectures and systems from older MIL STD technologies to COTS based technologies that support the network centric model of the Navy's plan to support JV 2010 implementing IT-21 technology. The second goal of the OTH-T program will be to support the integration of all C4I systems into warfighting capabilities which includes Year 2000 (Y2K) integration and testing. This support includes providing technical expertise afloat and ashore via a cadre of highly-trained Fleet Systems Engineers who ensure smooth integration of new capabilities to enhance OTH-T during major Fleet exercises and demonstrations which are used to validate and evaluate developed portions of configuration. The OTH-T program integration and testing in support of the warfighting capabilities will also include Y2K interoperability testing for both MIL-STD and IT-21 COTS equipment for submarines, surface, and land based components. Allied interoperability is an important issue for future naval operations, especially with the Navy initiative to expand Internet Protocol (IP) networking throughout the Fleet (IT-21 and Naval Intranet). Specific solutions do not exist to solve the IP connectivity issue with Allies. Funding will allow development of solutions for emerging Allied interoperability requirements. Data throughput will need to be increased for the exchange of larger sized files within the limitations of the HF medium. Funding will allow for further development of potential solutions for merging improved TCP/IP capability with ADNS and existing international standards (e.g.: STANAG 5066). Funding will also allow for development of subnet relay protocols which will provide for a significant improvement within battlegroups.

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X0798

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$147) Based on results of integration testing, developed capability functional description documents which were used by the programs of record to define system functional requirements that support these capabilities. Developed system interface standards where required. Provided a valid master configuration database in support of the new IT-21 Battle Group configurations.
- (U) (\$302) Conducted systems integration, interoperability, and Y2K testing using the facilities of the Land Based Test Network (LBTN) and Systems Integration and Test (expanded RLBS to validate IT-21 technologies prior to shipboard installation).
- (U) (\$474) Validated and verified the interoperability of architectures for new capabilities and supporting systems to the fleet. Worked with the fleet staffs and Naval Doctrine Command to develop policy and doctrine for operations of Naval Intranet (NI) in support of Network Centric Warfare ideology. Served as technical expert in researching the fleet's technical questions and providing information.
- (U) (\$399) Ensured joint interoperability of all systems on the NI by enforcing compliance with the Joint Technical Architecture and Y2K. Verified relevance, recommended modifications to, and maintained OTH-T specifications for support of distribution of the COP to maritime forces. The program's systems engineers made input into the SPAWAR advanced technology division to insure critical deficiencies are high priority during investigation of IT-21. Provided connectivity and conduct integration and interoperability testing to verify Y2K compliance and provided systems engineering expertise for both IT-21 and MIL-STD technologies.
- (U) (\$205) Provided software enhancements to the REPEAT software including adapting the software operationally to transfer Mission Data Updates through available data links.

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PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

2. (U) FY 2000 PLAN

- (U) (\$154) Based on results of integration testing, develop capability functional description documents which will be used by the programs of record to define system functional requirements that support these capabilities. Develop system interface standards where required. Provided a valid master configuration database in support of the new IT-21 Battle Group configurations.
- (U) (\$314) Conduct systems integration, interoperability, and Y2K testing using the facilities of the Land Based Test Network (LBTN) and Systems Integration Environment. (RLBTS has been expanded to validate IT-21 technologies prior to shipboard installation.)
- (U) (\$492) Validate and verify the interoperability of architectures for new capabilities and supporting systems to the fleet. Work with the fleet staffs and Naval Doctrine Command to develop policy and doctrine for operations of NI in support of Network Centric Warfare ideology. Serve as technical expert in researching the fleet's technical questions and providing information.
- (U) (\$417) Ensure joint interoperability of all systems on the NI by enforcing compliance with the Joint Technical Architecture and Y2K. Verify relevance, recommend modifications to, and maintain OTH-T specifications for support of distribution of the COP to maritime forces. The program's systems engineers will make input into the SPAWAR advanced technology division to insure critical deficiencies are high priority during investigation of IT-21. Provide connectivity and conduct integration and interoperability testing to verify Y2K compliance and provide systems engineering expertise for both IT-21 and MIL-STD technologies.
- (U) (\$214) Conduct integration testing of OTH-T and combat systems.

3. (U) FY 2001 PLAN

- (U) (\$246) Integrate code combination techniques developed during FY00 into internationally agreed HF data profiles for significant improvement in guarantee of delivery of email attachments in poor propagation conditions associated with the HF medium.

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PROJECT NUMBER: X0798

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

- (U) (\$271) Exploit and coordinate subnet relay protocols and multi-frequency band channels to provide greater data throughput in the HF and UHF Line-of-Site RF mediums.
- (U) (\$154) Based on results of integration testing, develop capability functional description documents which will be used by the programs of record to define system functional requirements that support these capabilities. Develop system interface standards where required. Provided a valid master configuration database in support of the new IT-21 Battle Group configurations.
- (U) (\$315) Conduct systems integration, interoperability, and Y2K testing using the facilities of the Land Based Test Network (LBTN) and Systems Integration Environment. (RLBTS has been expanded to validate IT-21 technologies prior to shipboard installation.
- (U) (\$493) Validate and verify the interoperability of architectures for new capabilities and supporting systems to the fleet. Work with the fleet staffs and Naval Doctrine Command to develop policy and doctrine for operations of NVI in support of Network Centric Warfare ideology. Serve as technical expert in researching the fleet's technical questions and providing information.
- (U) (\$416) Ensure joint interoperability of all systems on the NI by enforcing compliance with the Joint Technical Architecture and Y2K. Verify relevance, recommend modifications to, and maintain OTH-T specifications for support of distribution of the COP to maritime forces. The program's systems engineers will make input into the SPAWAR advanced technology division to insure critical deficiencies are high priority during investigation of IT-21. Provide connectivity and conduct integration and interoperability testing to verify Y2K compliance and provide systems engineering expertise for both IT-21 and MIL-STD technologies.
- (U) (\$214) Conduct integration testing of OTH-T and combat systems.

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X0798

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

(U) OTHER PROGRAM FUNDING SUMMARY:

(U) PE 0204660N, AGSAG 4B7N	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
	336	578	440	460	477	438	451

(U) RELATED RDT&E: (SEW) Architecture/Engineering Support program element is related to all Naval C4I related efforts.

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

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Budget Item Justification
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FY 2001 RDT&E,N Program Element/Project Cost Breakdown

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BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X0798

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: OTH TARGETING

Exhibit R-3 Cost Analysis (page 2)										Date: Sep 99		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/4				PROGRAM ELEMENT 0604707N						PROJECT NAME AND NUMBER OTH Targeting X0798		
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
Program Management	Various	Various	1319	149	TBD	152	TBD	151	TBD	Cont.	Cont.	Cont.
System Test and Evaluation	Various	Various	3056	592	TBD	722	TBD	723	TBD	Cont.	Cont.	Cont.
Systems Engineering	Various	Various	764	312	TBD	234	TBD	234	TBD	Cont.	Cont.	Cont.
Interoperability Requirements	Various	Various	2792	474	TBD	483	TBD	1001	TBD	Cont.	Cont.	Cont.
Subtotal T&E			7931	1527		1591		2109		Cont.	Cont.	Cont.
Remarks												
Subtotal Management												
Remarks												
Total Cost			7931	1527		1591		2109		Cont.	Cont.	Cont.

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Project Cost Breakdown
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PROGRAM ELEMENT TITLE: SEW Architecture/Eng Support

(U) COST: (Dollars in Thousands)

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
X2144 SEW Engineering	7,973	8,545	8,154	8,093	7,200	9,068	9,345	Cont.	Cont.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Space and Electronic Warfare (SEW) Engineering is a non-acquisition engineering effort defined as the neutralization or destruction of enemy targets and the enhancement of friendly force battle management through integrated employment and exploitation of the electromagnetic spectrum and the medium of space. SEW Engineering encompasses efforts to ensure that 1) the composite operational capabilities of SEW systems (not the individual component systems) conform to the Naval C4ISR architecture as related to the National Defense Strategy and evolving joint visions and direction such as Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea," C4I for the Warrior, and the Defense Science Board Summer Study Task Force Report on Information Architecture for the Battlefield, and are guided by CINC requirements; 2) the systems support emerging fleet requirements as documented and necessitated through concepts such as Network Centric Warfare, Integrated Information Base, IT-21, and Naval Virtual Intranet; and 3) the SEW systems and systems integration effort involves leading edge technology transfer of information processing technologies primarily through integration of government and commercial off-the-shelf (GOTS/COTS) products to enhance the Navy's operational capability, interoperability, flexible reconfiguration, as well as reduce costs. SEW Engineering also provides the Navy support in the demonstration and integration of C4I systems developed by the services and by commercial vendors as part of the annual Joint Warrior Interoperability Demonstration (JWID) sponsored by the Joint Chiefs of Staff. Each JWID is designed to identify joint interoperability deficiencies, and to solicit solutions to these deficiencies from commercial industry. Additionally, JWID demonstrates these technologies for assessment by the warfighters from ongoing service efforts. Service participants benefit from the exposure to the new technologies, the assessments process, and the equipment that is left in place for further use and evaluation.

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$758) Developed plans for the integration of maturing system developments and military and commercial technologies that support the "Copernicus...C4ISR for the 21st Century" concept into the annual Joint Warrior Interoperability Demonstration (JWID). Plans incorporated the use of enhanced operational capabilities in key CINC priority areas and Joint Mission Area (JMA) Assessment Thrust Areas which included high-capacity communications, improved Command and Control Warfare (C2W), integrated landfight architecture, trusted systems/multi-level security, improved sensors/strike planning, common tactical/operational picture, theater air defense/force protection, and combat identification.
- (U) (\$384) Remainder of FY1998 Below Threshold Reprogramming (BTR) received in FY 1999 in support of the Maritime Battle Center to support the Fleet Battle Experiment "D" to build continued lessons learned from previous Fleet Battle Experiments. FBE "D" primary focus was the development of tactics, techniques and procedures supporting execution of Theater Air Defense and prevention of incursion by enemy Special Operations Forces. Completion of FBE "D" was a critical step toward successful preparation for the follow-on experiment, FBE "E".
- (U) (\$935) Generated the Copernicus Implementation Guidance, applying a web-based collaborative grid approach where programs/projects are synchronized across the claimancy/acquisition community. The current guidance requires redirection to incorporate emerging warfighter requirements and concepts. The shift from platform-centric warfare to network-centric warfare demands that new approaches are identified, matured, and tested with the warfighters and systems developers. The product was a validated and modeled methodology, based on web technology, whereby a matrix of capabilities are mapped to organizations and products, leading to prioritized and scoped C4ISR work elements for claimancy pursuits.

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$200) Augmented/updated/maintained the Overarching C4ISR Operational Requirements Documentation. The composite operational capabilities of C4ISR systems (not the individual component systems) were designed so that they conform to the Naval C4ISR architecture as it relates to the National Defense Strategy and evolving joint visions and direction such as Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea", C4I for the Warrior and the Defense Science Board Summer Study Task Force Report on Information Architecture for the Battlefield, and are guided by CINC requirements. As operational requirements changed, either through changes in mission, technological change, technical insertion into systems, or through systems integration efforts, these changes were reflected in the latest operational architectures. Additionally, supported related C4ISR architecture projects as they supported Theater and Battleforce C4ISR architectures.
- (U) (\$2,816) Enhanced and refined the C4ISR Planned Systems Design for the POM years. Continued to develop and validate a Naval C4ISR Architecture based on the multi-tier architecture framework of Operational, System, and Technical to support Naval missions in a Joint and Coalition Theater. Architectural development consisted of (1) assisting OPNAV, Navy Doctrine Command, and Fleet Commanders in the development of operation and overarching architectures and maintaining documentation describing the Systems Architectures; and (2) providing system architecture parameters, attributes, and characteristics necessary to ensure that Program Executives and Managers acquire systems that achieve the desired operational objectives. Participated with the Joint Battle Center and Naval Battle Laboratories to verify and validate systems architectures. The POM C4ISR Systems Architecture was enhanced. The "As-Is" C4ISR Systems Architecture was updated as appropriate. The decomposition of the overarching POM C4ISR Systems Architecture was accomplished. This involved breaking down the specifics of warfighter functions to lower levels of detail. From this, SPAWAR developed the "ring charts" for some Battle Groups/Amphibious Ready Groups, generic platform designs, and detailed designs for each platform. Sponsored and/or participated in related IPTs within the claimancy and throughout the Navy Department and DoD, as required; and participated in OSD and joint architectural working groups and panels. Defined an end-to-end process model to document the C4ISR systems development process and relationships among the systems development components.

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PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$892) Continued support to the Joint Technical Architecture/Standards development/documentation and implementation effort, and published periodic updates. Represented and coordinated Navy inputs into the Joint Technical Architecture developed in conjunction with both internal Naval and external service units and agencies including the and ASD(C3I) Joint Technical Architecture (JTA) Development Group (JTADG). Navy inputs to the JTA Version 3.0 were developed in accordance with direction from the Technical Architecture Steering Group (TASG) and the DoD Architecture Coordination Council (ACC). Coordinated the JTA standards and protocols with the DON CIO's Information Technology Standards Guidance (ITSG) document. Coordinated the implementation of JTA standards and protocols throughout the C4ISR systems development community. Provided appropriate design guidance and resulting data inputs into the Naval Architecture Database (NAD). Supported and coordinated NAD tools development for JTA products. Matured the Levels of Information Systems Interoperability (LISI) constructs as they relate to the JTA.
- (U) (\$1,988) Matured the Naval Architecture Database (NAD) to encompass, establish, and populate the dynamic systems model; analyzed the criteria and requirements for the operational system architecture functional transition; continued population of the data models; updated the Hierarchical Data Dictionary to reflect additional study inputs; and provided C4ISR inputs to the Maritime Battle Center (MBC) to provide test/experimentation development planning with other Navy and service organizations for the conduct of Naval and Joint experiments including Fleet Warfare Experiments, IT-21, Theater Air Defense (TAD) Battle Management C4I (BMC4I), etc. Products included expanded reference sets, a refined data model and schema, the addition of the SMIDB database, the Levels of Information Systems Interoperability Technical Reference Model, an expanded tool set, and documented relationships to related databases.

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PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

3. (U) FY 2000 PLAN:

- (U) (\$2,684) Develop plans for the integration of maturing system developments, military and commercial technologies that support enhanced operational capabilities in key CINC priority areas and Joint Mission Area (JMA) Assessment Thrust Areas into the annual Joint Warrior Interoperability Demonstration (JWID). Integration plans will include high-capacity communications, improved Command and Control Warfare (C2W), integrated landfight architecture, trusted systems/multi-level security, improved sensors/strike planning, common operational picture, collaborative planning, knowledge based systems, smart push-warrior pull data flow, theater air defense/force protection, and combat identification. In conjunction with all services, assess mature technologies and submit recommendation for rapid acquisition of technologies that provide solutions to the warfighter's problems.
- (U) (\$497) Generate a web-based collaborative grid approach where programs/projects are synchronized across the claimancy/acquisition community. The shift for the afloat part of the Navy, from platform-centric warfare to network-centric warfare, and the Naval Intranet for the land based portion of the Navy, demands that new approaches are identified, matured, and tested with the warfighters and systems developers. The product will be a validated and modeled methodology, based on web technology, whereby a matrix of capabilities are mapped to organizations and products, leading to prioritized and scoped C4ISR work elements for claimancy pursuits.
- (U) (\$1,094) Migrate the Overarching C4ISR Operational Requirements Documentation to a web-based, fully interactive, collaborative site, where requirements generators, systems developers, and other users requiring such data, can gain access to automated databases and accompanying tools. Continue support to the C4ISR portion of the Joint Technical Architecture/Standards development/documentation and implementation effort, and publish periodic updates. Represent and coordinate Navy inputs into the Joint Technical Architecture developed in conjunction with both internal Naval and external service units and agencies including the ASD(C3I) Joint Technical Architecture (JTA) Development Group (JTADG). Navy inputs to the C4ISR portion of the JTA Version 3.0 will be developed in accordance with direction from the Technical Architecture Steering Group (TASG) and the DoD Architecture Coordination Council (ACC). Coordinate the C4ISR JTA standards and protocols with the DON CIO's Information Technology Standards Guidance (ITSG) document. Coordinate the implementation of JTA standards and protocols throughout the C4ISR systems development community. Provide appropriate design guidance and resulting data inputs into the Naval Architecture Database (NAD). Support and coordinate NAD tools development for JTA products. Support the maturation of the Levels of Information Systems Interoperability (LISI) constructs as they relate to the JTA.

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PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$945) Enhance and refine the C4ISR Planned Systems Design for the POM years. Continue to develop and validate a Naval C4ISR systems design environment to support Naval missions in a Joint and Coalition Theater. Architectural development will consist of (1) assisting OPNAV, Navy Doctrine Command, and Fleet Commanders in the development of battlegroup-wide and hull specific designs, (2) maintaining documentation describing the Systems Architectures/shipboard and ashore configurations, and (3) providing system architecture parameters, attributes, and characteristics necessary to ensure that Program Executives and Managers acquire systems that achieve the desired operational objectives. Participate with the Joint Battle Center and Naval Battle Laboratories to verify and validate overall systems designs and detailed implementation designs. The decomposition of the overarching POM C4ISR Systems Architecture will be accomplished. This involves breaking down the specifics of warfighter functions to lower levels of detail. From this, SPAWAR can develop the "ring charts" for Battle Groups/Amphibious Ready Groups, generic platform designs, and detailed designs for each platform. These developed documents, coupled with control measures, will allow configuration management of installed designs. Sponsor and/or participate in related IPTs within the claimancy and throughout the Navy Department and DoD, as required, and participate in OSD and joint architectural working groups and panels. Define an end-to-end process model to document the C4ISR systems development process and relationships among the systems development components.
- (U) (\$640) Augment/update/maintain the Overarching C4ISR Operational Requirements documentation. The composite operational capabilities of C4ISR systems must be designed so that they conform to the Naval C4ISR architecture as it relates to the National Defense Strategy and evolving joint visions and direction such as Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea", C4I for the Warrior, and the Defense Science Board Summer Study Task Force Report on Information Architecture for the Battlefield, and are guided by CINC requirements. As operational requirements change, either through changes in mission, technological change, technical insertion into systems, or through systems integration efforts, these changes must be reflected in all applicable requirements documents. Additionally, support to related C4ISR projects as they define and maintain Theater and Battleforce C4ISR architectures must be maintained.

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PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$2,685) Develop the Navy's common repository for architectural and interoperability support, data integration, and systems design data and information. As part of the repository, the Naval Architecture Database (NAD) will encompass establishment and population of the dynamic systems model, analysis of the criteria and requirements for the operational system architecture functional transition, continuation of the population of the data models, update of the Hierarchical Data Dictionary to reflect Joint study inputs, and provision for C4ISR implementation of the Maritime Battle Center (MBC). This effort includes senior test engineers and laboratory coordinators to provide test/experimentation development planning with other Navy and service organizations for the conduct of Naval and Joint experiments including Fleet Warfare Experiments, JWID, IT-21, Theater Air Defense (TAD) Battle Management C4I (BMC4I), etc. Products include expanded reference sets, a refined data model and schema, the addition of the SMIDB database, the Levels of Information Systems Interoperability Technical Reference Model, an expanded tool set, and documented relationships to related databases.

4. (U) FY 2001 PLAN:

- (U) (\$2,613) Develop plans for the integration of maturing system developments, military and commercial technologies that support enhanced operational capabilities in key CINC priority areas and Joint Mission Area (JMA) Assessment Thrust Areas into the annual Joint Warrior Interoperability Demonstration (JWID). Integration plans will include high-capacity communications, improved Command and Control Warfare (C2W), integrated landfight architecture, trusted systems/multi-level security, improved sensors/strike planning, common operational picture, collaborative planning, knowledge based systems, smart push-warrior pull data flow, theater air defense/force protection, and combat identification. Field demonstrated and assessed Joint Chief of Staff mandated Golden Nuggets Technologies that will benefit operational forces with their immediate employment at sea or in the field.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$477) Continue development and of the web-based collaborative grid approach where programs/projects are synchronized across the claimancy/acquisition community. The shift for the afloat part of the Navy, from platform-centric warfare to network-centric warfare, and the Naval Intranet for the land based portion of the Navy, demands that new approaches are identified, matured, and tested with the warfighters and systems developers. The product will be a validated and modeled methodology, based on web technology, whereby a matrix of capabilities are mapped to organizations and products, leading to prioritized and scoped C4ISR work elements for claimancy pursuits. This web site will contain the results of technology insertion experiments and "lessons learned" from those trials, so that successes can be applied to similar systems enhancement attempts. Included will be software reuse experiments, hardware applications, and networking trials.
- (U) (\$964) Continue the migration of the Overarching C4ISR Operational Requirements Documentation to a web-based, fully interactive, collaborative site, where requirements generators, systems developers, and other users requiring such data, can gain access to automated databases and accompanying tools. Continue support to the C4ISR portion of the Joint Technical Architecture/Standards development/documentation and implementation effort, and publish periodic updates. Represent and coordinate Navy inputs into the Joint Technical Architecture developed in conjunction with both internal Naval and external service units and agencies including the and ASD(C3I) Joint Technical Architecture (JTA) Development Group (JTADG). Navy inputs to the C4ISR portion of the JTA Version 3.0 will be developed in accordance with direction from the Technical Architecture Steering Group (TASG) and the DoD Architecture Coordination Council (ACC). Coordinate the C4ISR JTA standards and protocols with the DON CIO's Information Technology Standards Guidance (ITSG) document. Coordinate the implementation of JTA standards and protocols throughout the C4ISR systems development community. Provide appropriate design guidance and resulting data inputs into the Naval Architecture Database (NAD). Support and coordinate NAD tools development for JTA products. Support the maturation of the Levels of Information Systems Interoperability (LISI) constructs as they relate to the JTA.
- (U) (\$907) Enhance and refine the C4ISR Planned Systems Design for the POM years. Continue to develop and validate a Naval C4ISR systems design environment to support Naval missions in a Joint and Coalition Theater. Architectural development will consist of (1) assisting OPNAV, Navy Doctrine Command, and Fleet Commanders in the development of battlegroup-wide and hull specific designs, (2) maintaining documentation describing the Systems Architectures/shipboard and ashore configurations; and (3) providing system architecture parameters, attributes, and characteristics necessary to ensure that Program Executives and Managers acquire systems that achieve the desired operational objectives. Participate with the Joint Battle Center and Naval Battle Laboratories to verify and validate overall

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

systems designs and detailed implementation designs. The decomposition of the overarching POM C4ISR Systems Architecture will be accomplished. This involves breaking down the specifics of warfighter functions to lower levels of detail. From this, SPAWAR can develop the "ring charts" for Battle Groups/Amphibious Ready Groups, generic platform designs, and detailed designs for each platform. These developed documents, coupled with control measures, will allow configuration management of installed designs. Sponsor and/or participate in related IPTs within the claimancy and throughout the Navy Department and DoD, as required and participate in OSD and joint architectural working groups and panels. Define an end-to-end process model to document the C4ISR systems development process and relationships among the systems development components.

- (U) (\$615) Augment/update/maintain the Overarching C4ISR Operational Requirements documentation. The composite operational capabilities of C4ISR systems must be designed so that they conform to the Naval C4ISR architecture as it relates to the National Defense Strategy and evolving joint visions and direction, such as Joint Vision 2010, "Copernicus...C4ISR for the 21st Century," "Forward...From the Sea", C4I for the Warrior and the Defense Science Board Summer Study Task Force Report on Information Architecture for the Battlefield, and are guided by CINC requirements. As operational requirements change, either through changes in mission, technological change, technical insertion into systems, or through systems integration efforts, these changes must be reflected in all applicable requirements documents. Additionally, support to related C4ISR projects as they define and maintain Theater and Battleforce C4ISR architectures must be maintained.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

- (U) (\$2,578) Enhance and develop the Navy's common repository for architectural and interoperability support, data integration, and systems design data and information. As part of the repository, the Naval Architecture Database (NAD) will encompass; establishment and population of the dynamic systems model, analysis of the criteria and requirements for the operational system architecture functional transition, continuation of the population of the data models and update the Hierarchical Data Dictionary to reflect Joint study inputs, and provision for C4ISR implementation of the Maritime Battle Center (MBC). This effort includes senior test engineers and laboratory coordinators to provide test/experimentation development planning with other Navy and service organizations for the conduct of Naval and Joint experiments including Fleet Warfare Experiments, JWID, IT-21, Theater Air Defense (TAD) Battle Management C4I (BMC4I), etc. Products include; expanded reference sets, a refined data model and schema, the addition of the SMIDB database, the Levels of Information Systems Interoperability Technical Reference Model, an expanded tool set, and documented relationships to related databases. Support additional user bases from the CINC Interoperability Program Office (CIPO), other Systems Commands, and Fleet users by providing comprehensive and authoritative databases for planning and programmatic information.
- B. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- C. (U) ACQUISITION STRATEGY: Not applicable.
- D. (U) SCHEDULE PROFILE: Not applicable.

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FY 2001 RDT&E,N Program Element/Project Cost Breakdown

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

Exhibit R-3 Cost Analysis (page 1)									Date: SEP 1999			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N				PROGRAM ELEMENT 0604707N					PROJECT NAME AND NUMBER SEW Engineering X2144			
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
Subtotal Product Development												
Remarks:												
SEW/C4I Technology Integration	Various	Various	4554							0	4554	4554
Systems A&E and Validation	Various	Various	10101							0	10101	10101
Systems Validation	Various	Various	1034							0	1034	1034
Systems Engineering			1850							0	1850	1850
Operational Requirements	Various	Various		200	TBD	1094	TBD	964	TBD	Cont.	Cont.	Cont.
Systems Design	Various	Various		2816	TBD	945	TBD	907	TBD	Cont.	Cont.	Cont.
Technical Standards	Various	Various		892	TBD	640	TBD	615	TBD	Cont.	Cont.	Cont.
Information Repository/Naval Architecture Database	Various	Various		1988	TBD	2685	TBD	2578	TBD	Cont.	Cont.	Cont.
C4ISR Capabilities	Various	Various		935	TBD	497	TBD	477	TBD	Cont.	Cont.	Cont.
Subtotal Support	Various	Various	17539	6831		5861		5541	TBD	Cont.	Cont.	Cont.
Remarks												

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Budget Item Justification
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FY 2001 RDT&E,N Program Element/Project Cost Breakdown

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: X2144

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: SEW ENGINEERING

Exhibit R-3 Cost Analysis (page 2)										Date: SEP 1999		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N				PROGRAM ELEMENT 0604707N						PROJECT NAME AND NUMBER SEW Engineering X2144		
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
SEW Engr/JWID	Various	Various	3815	758	N/A	2684	TBD	2613	TBD	Cont.	Cont.	Cont.
FY 1999 BTR/FBE-D				384								
Subtotal T&E	Various	Various	3815	1142	N/A	2684	TBD	2613	TBD	Cont.	Cont.	Cont.
Remarks												
Subtotal Management												
Remarks												
Total Cost			21354	7973		8545		8154		Cont	Cont.	Cont.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

(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
R2357 Maritime Battle Center	11,140	23,784	23,837	23,897	23,906	23,855	23,819	Cont.	Cont.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the Maritime Battle Center (MBC) is to execute the Naval Warfare Innovation Process. The process takes concepts developed by the Strategic Studies Group and approved by the Chief of Naval Operations into Fleet Battle Experiments; conducts preliminary sub-scale experiments and technological demonstrations focused on the advanced engineering and operational system development of systems related to all conflict levels of Littoral Battlespace. The MBC environment is a network centric environment that links the existing "core" Naval facilities to the Marine Corps Warfighting Lab (MCWL), the Joint Battle Center/Federated Battle Lab, and technologists in industry and academia as appropriate. The MBC is essential to the evolution of combat capabilities since it is the engine for validating the new network centric warfare techniques in conjunction with the Sea Based Battle Laboratories (SBBL), Science & Technology (S&T) initiatives and other initiatives that originate with the operating forces. The MBC will support the early and sustained involvement of Joint Warfighters in refining the technology to meet the tactics, techniques, and procedures needed for 2010-2020 Littoral Battlespace. The MBC will have multiple roles since it is a crosscutting organization involved in several facets of concept, platform, weapons, weapon systems and Information Technologies (IT), Information System (IS) and Information Management (IM) systems development and integration. These include collaborative planning, operational experimentation planning and execution, technology transition/acquisition support, systems engineering, and integration, technology assimilation and operational demonstrations.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS

- (U) (\$1,261) FBE Analysis and Core Support: The management and administration of MBC activities included oversight of the experimental planning phase, the execution and collection phases, the analysis phase, and the output decision phase. This entailed the integration of many preliminary experiments and technology demonstrations coupled with the inputs of experienced military leaders, current warfighting CINCs, and technologists from industry and academia.
- (U) (\$973) Enabled Technical Development: Prior to any technology transition to the Numbered Fleet Commanders during the Fleet Battle Experiment (FBE) or Limited Objective Experiment (LOE). The technology utilized preliminary engineering experimentation to determine its compatibility and compliance with the Global Command and Control System (GCCS) architectures, IT 21 architectures, and the identification of high performance and interoperability issues. The objective of these preliminary experiments was to bring information superiority to Fleet operations while achieving a level of critical mass in the early identification of technologies with "production" potential. These technologies include commercially developed technologies in collaborative planning, interactive sharing, the correlation of decision data-reducing "decision time, and the exploration of dynamically managed circuits operating in sea, ground, and/or aerospace domains.
- (U) (\$7,414) FBE Direct Experimentation: The Numbered Fleet Commanders were designated experimentation leads for FBEs and LOEs. The Fleet Commander in the AOR where the experiment was held lead the F|BE series and designated their flagship as Sea Based Battle Laboratories (SBBL) that worked with the MBC Director in the conduct of the FBE. This enabled the Fleet to directly participate in the development of future Navy concepts and capabilities and provided the Fleet an opportunity to provide immediate feedback to the technologist and concept developer.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

- (U) (\$1,492) Technical Evaluation: MBC planed and participated in the planning of other services and joint commands of exercises and tests that involved the Navy experimentation process. Its core competency was fleet operations, exercise designs, costing, equipping and exercise analysis and overall evaluations with recommendations for future related activities. The technical operations also evaluated the results of Advanced Concept Technology Demonstrations (ACTDs), Joint Warrior Interoperability Demonstration (JWIDs), and Joint Battle Center (JBC) activities and determined the most expeditious paths to transition such concepts into actual and sustainable Naval warfighting capability. As innovative technologies emerged from the commercial section, the technical operations element devised insertion strategies for prototypes. Using existing resources, the components used to provide the required set of capabilities was generated and brought into operation for testing and analysis purposes. Navy laboratory support from all claimancies was tasked dependent on the requirements. Knowledge of laboratory capabilities and projected needs of such laboratories was inherent in this support. Joint exercise support supplied by maritime forces was also coordinated using this organizational function.
- 2. (U) FY 2000 PLAN:
 - (U) (\$4,887) FBE Analysis and Core Support: The management and administration of MBC activities includes oversight of the experimental planning phase, the execution and collection phases, the analysis phase, and the output decision phase. This entails the integration of many preliminary experiments and technology demonstrations coupled with the inputs of experienced military leaders, current warfighting CINCs, and technologists from industry and academia.
 - (U) (\$4,082) Enabling Technical Development: Prior to any technology transition to the Numbered Fleet Commanders during a Fleet Battle Experiment (FBE) or Limited Objective Experiment (LOE). The technology needs preliminary engineering experimentation to determine its compatibility and compliance with the Global Command and Control System (GCCS) architectures, IT 21 architectures, and the identification of high performance and interoperability issues. The objectives of these preliminary experiments is to bring information superiority to Fleet operations while achieving a level of critical mass in the early identification of technologies with "production" potential. These technologies include commercially developed technologies in collaborative planning, interactive sharing, the correlation of decision data-reducing "decision time, and the exploration of dynamically managed circuits operating in sea, ground, and/or aerospace domains.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

- (U) (\$13,439) FBE Direct Experimentation: The Numbered Fleet Commanders are designated experimentation leads for FBEs and LOEs. The Fleet Commander in the AOR where the experiment is held will lead the F|BE series and designate their flagship as Sea Based Battle Laboratories (SBBL) that will work with the MBC Director in the conduct of the FBE. This enables the Fleet to directly participate in the development of future Navy concepts and capabilities and provides the Fleet an opportunity to provide immediate feedback to the technologist and concept developer.
 - (U) (\$1,376) Technical Evaluation: MBC will plan and participate in planning by other services and joint commands of exercises and tests that involve the Navy experimentation process. Its core competency will be fleet operations, exercise designs, costing, equipping and exercise analysis and overall evaluations with recommendations for future related activities. The technical operations will also evaluate the results of Advanced Concept Technology Demonstrations (ACTDs), Joint Warrior Interoperability Demonstration (JWIDs), and Joint Battle Center (JBC) activities and determine the most expeditious paths to transition such concepts into actual and sustainable Naval warfighting capability. As promising innovative technologies emerge from the commercial section, the technical operations element will devise insertion strategies for prototypes. Using existing resources, the components needed to provide the required set of capabilities will be generated and brought into operation for testing and analysis purposes. Navy laboratory support from all claimancies will be tasked dependent on the requirements. Knowledge of laboratory capabilities and projected needs of such laboratories will be inherent in this support. Joint exercise support supplied by maritime forces will also be coordinated using this organizational function.
3. (U) FY 2001 PLAN:
- (U) (\$4,830) FBE Analysis and Core Support: The management and administration of MBC activities includes oversight of the experimental planning phase, the execution and collection phases, the analysis phase, and the output decision phase. This entails the integration of many preliminary experiments and technology demonstrations coupled with the inputs of experienced military leaders, current warfighting CINCs, and technologists from industry and academia.

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FY 2001 RDT&E,N Budget Item Justification

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

- (U) (\$3,229) Enabling Technical Development: Prior to any technology transition to the Numbered Fleet Commanders during a Fleet Battle Experiment (FBE) or Limited Objective Experiment (LOE). The technology needs preliminary engineering experimentation to determine its compatibility and compliance with the Global Command and Control System (GCCS) architectures, IT 21 architectures, and the identification of high performance and interoperability issues. The objectives of these preliminary experiments is to bring information superiority to Fleet operations while achieving a level of critical mass in the early identification of technologies with "production" potential. These technologies include commercially developed technologies in collaborative planning, interactive sharing, the correlation of decision data-reducing "decision time, and the exploration of dynamically managed circuits operating in sea, ground, and/or aerospace domains.
- (U) (\$14,435) FBE Direct Experimentation: The Numbered Fleet Commanders are designated experimentation leads for FBEs and LOEs. The Fleet Commander in the AOR where the experiment is held will lead the F|BE series and designate their flagship as Sea Based Battle Laboratories (SBBL) that will work with the MBC Director in the conduct of the FBE. This enables the Fleet to directly participate in the development of future Navy concepts and capabilities and provides the Fleet an opportunity to provide immediate feedback to the technologist and concept developer.
- (U) (\$1,343) Technical Evaluation: MBC will plan and participate in planning by other services and joint commands of exercises and tests that involve the Navy experimentation process. Its core competency will be fleet operations, exercise designs, costing, equipping and exercise analysis and overall evaluations with recommendations for future related activities. The technical operations will also evaluate the results of Advanced Concept Technology Demonstrations (ACTDs), Joint Warrior Interoperability Demonstration (JWIDs), and Joint Battle Center (JBC) activities and determine the most expeditious paths to transition such concepts into actual and sustainable Naval warfighting capability. As promising innovative technologies emerge from the commercial section, the technical operations element will devise insertion strategies for prototypes. Using existing resources, the components needed to provide the required set of capabilities will be generated and brought into operation for testing and analysis purposes. Navy laboratory support from all claimancies will be tasked dependent on the requirements. Knowledge of laboratory capabilities and projected needs of such laboratories will be inherent in this support. Joint exercise support supplied by maritime forces will also be coordinated using this organizational function.

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DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE
CENTER

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

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

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Budget Item Justification
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FY 2001 RDT&E,N Program Element/Project Cost Breakdown

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE CENTER

Exhibit R-3 Cost Analysis (page 1)										Date: SEP 1999		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N				PROGRAM ELEMENT 0604707N						PROJECT NAME AND NUMBER Maritime Battle Center R2357		
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
Subtotal Product Development												
Remarks:												
Subtotal Support												
Remarks												

R-1 Line Item No 80

Budget Item Justification
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FY 2001 RDT&E,N Program Element/Project Cost Breakdown

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 4

PROGRAM ELEMENT: 0604707N

PROJECT NUMBER: R2357

PROGRAM ELEMENT TITLE: SEW Architecture/Eng

PROJECT TITLE: MARITIME BATTLE CENTER

Exhibit R-3 Cost Analysis (page 2)										Date: SEP 1999		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N				PROGRAM ELEMENT 0604707N						PROJECT NAME AND NUMBER Maritime Battle Center R2357		
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
System Test and Evaluation	Various	Various	2551	9879		18897		19007		CONT	CONT	CONT
Subtotal T&E			2551	9879		18897		19007		CONT	CONT	CONT
Remarks												
Program Management	Various	Various	280	1261		4887		4830		CONT	CONT	CONT
Subtotal Management			280	1261		4887		4830		CONT	CONT	CONT
Remarks												
Total Cost			2831	11140		23784		23837		CONT	CONT	CONT

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