

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2002</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/4</b>				R-1 ITEM NOMENCLATURE SHIP PRELIMINARY DESIGN AND FEASIBILITY STUDIES / PE 0603564N					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	<b>54.449</b>	<b>14.748</b>	<b>2.983</b>	<b>4.975</b>	<b>10.921</b>	<b>14.867</b>	<b>17.812</b>	<b>Continuing</b>	<b>Continuing</b>
Ship Feasibility Studies/S0408	<b>35.155</b>	<b>14.748</b>	<b>2.983</b>	<b>4.975</b>	<b>10.921</b>	<b>14.867</b>	<b>17.812</b>	<b>Continuing</b>	<b>Continuing</b>
Shipboard Simulation for USMC/22863	<b>19.294</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>19.294</b>
Quantity of RDT&E Articles	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>		
<p>A. (U) Mission Description and Budget Item Justification. Ship concepts, identified in PE 0603563N (Ship Concept Advanced Design) are transitioned to and further developed by this project after an approved Mission Needs Statement (MNS) and usually after an approved Milestone A (MS A) decision. This project performs the Ship Feasibility Studies required to address a specific Mission Needs Statement (MNS) and supports the Analysis of Alternatives (AOA) for new surface ships in the Navy Shipbuilding Plan. Under Acquisition Reform for new ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering process. This project performs impact studies of warfare, hull, mechanical and electrical subsystems on advanced ship designs; enhances ship/ship system design methodologies that support feasibility studies; develops and upgrades the engineering tools, especially ship synthesis models, used to support AOA studies and other engineering efforts accomplished during the feasibility study phase; evaluates advanced and alternative technologies and develops total ship concepts with these technologies to assess their suitability; develops the initial documentation and design methodology required by the government for the design of surface ships in the Shipbuilding Program in accordance with the requirements of the new DoD 5000.2 Instruction; supports the development of the Operational Requirements Document (ORD) and other documentation required at Program Initiation and accomplishes other efforts for future ship acquisitions in support of a Program Initiation. Ship Feasibility Study products include a description of the alternative ships' principal characteristics and mission critical subsystems, weight estimates, general arrangement sketches, technical risk assessments, and Life Cycle Cost estimate (LCCE) The objective of this project is to provide the decision makers with feasible, affordable alternatives to be selected for further development during the Contract Design phase under PE0604567N.</p> <p>B. (U) Description of Shipboard Simulation for Marine Corps Operations. Models and simulations of USMC operations and support are to be demonstrated and further developed as required by this project. This project will ensure interoperability between select amphibious ships and the embarked USMC forces in support of expeditionary warfare operations. Interoperability will be demonstrated through the use of modeling and simulation technology for pre-assault mission planning and rehearsals, just-in-time, embedded technical and tactical training of USMC forces afloat, cargo and munitions load out planning, cross-ARG, real time cargo visibility, survivability analysis and maritime logistics planning in support of Operational Maneuver From The Sea. Models will also enable operational planning for special operations such as humanitarian assistance and NEO missions. The use of modeling and simulation technology enables the avoidance of more costly and time consuming operational testing and evaluation. The objective is to maximize compatibility and interoperability between amphibious ships and USMC forces, and to maximize mission flexibility across various warfare areas.</p>									

R-1 SHOPPING LIST - Item No. 61-1 of 61-5

**Exhibit R-2, RDT&E Budget Item Justification**  
(Exhibit R-2, page 1 of 5)

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2002</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/4</b>		R-1 ITEM NOMENCLATURE SHIP PRELIMINARY DESIGN AND FEASIBILITY STUDIES / PE 0603564N	
B. Program Change Summary			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) FY 2002 President's Budget:	56.374	14.922	0.000
(U) Appropriated Value	56.896	14.922	0.000
(U) Adjustment to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	<u>-2.447</u>	<u>-0.174</u>	<u>2.983</u>
(U) FY 2003 Pres Budget Submit	54.449	14.748	2.983
<p>-(U) Funding: FY 2001 Adjustments: Shipboard Simulator for USMC (+\$20.000M), JCC(X) Analysis of Alternatives (-\$10.000M); - \$0.398M 7% Pro-Rate reduction; -\$0.124M Government Wide Recission and (-\$ 1.060M) SBIR Apr-27-01 reducion, (-\$0.723M) deferral and (-\$0.142M) for minor adjustments.  FY 2002 Adjustments: Minor adjustments (-\$0.174M) .  FY 2003 Adjustments: High Speed Vessel Studies (\$3.000M), and minor adjustments (-\$.017M).</p> <p>-(U) Schedule: None</p> <p>-(U) Technical: None</p>			

R-1 SHOPPING LIST - Item No. 61-2 of 61-5

**Exhibit R-2, RDT&E Budget Item Justification**

(Exhibit R-2, page 2 of 5)

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Budget Item Justification						DATE: <b>February 2002</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			R-1 ITEM NOMENCLATURE					
<b>RDT&amp; E, NAVY/BA4</b>	SHIP PRELIMINARY DESIGN/FEASIBILITY STUDIES			SHIP DEVELOPMENT (ADV) / S0408					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	<b>35.155</b>	<b>14.748</b>	<b>2.983</b>	<b>4.975</b>	<b>10.921</b>	<b>14.867</b>	<b>17.812</b>	<b>Continuing</b>	<b>Continuing</b>
Quantity of RDT&E Articles	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>		
<p>A. (U) Mission Description and Budget Item Justification. Ship concepts, identified in PE 0603563N (Ship Concept Advanced Design) are transitioned to and further developed by this project after an approved Mission Needs Statement (MNS) and usually after an approved Milestone A (MS A) decision. This project performs the Ship Feasibility Studies required to address a specific Mission Needs Statement (MNS) and supports the Analysis of Alternatives(AOA) for new surface ships in the Navy Shipbuilding Plan. Under Acquisition Reform for new ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering process. This project performs impact studies of warfare, hull, mechanical and electrical subsystems on advanced ship designs; enhances ship/ship system design methodologies that support feasibility studies; develops and upgrades the engineering tools, especially ship synthesis models, used to support AOA studies and other engineering efforts accomplished during the feasibility study phase; evaluates advanced and alternative technologies and develops total ship concepts with these technologies to assess their suitability; develops the initial documentation and design methodology required by the government for the design of surface ships in the Shipbuilding Program in accordance with the requirements of the new DoD 5000.2 Instruction; supports the development of the Operational Requirements Document (ORD) and other documentation required at Program Initiation and accomplishes other efforts for future ship acquisitions in support of a Program Initiation. Ship Feasibility Study products include a description of the alternative ships' principal characteristics and mission critical subsystems, weight estimates, general arrangement sketches, technical risk assessments, and Life Cycle Cost estimate (LCCE) The objective of this project is to provide the decision makers with feasible, affordable alternatives to be selected for further development during the Contract Design phase under PE0604567N.</p>									

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Budget Item Justification		DATE: <b>February 2002</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp; E, NAVY/BA4</b>	PROGRAM ELEMENT NAME AND NUMBER SHIP PRELIMINARY DESIGN/FEASIBILITY STUDIES	R-1 ITEM NOMENCLATURE SHIP DEVELOPMENT (ADV) / S0408
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS:</p> <p>(U) (\$19.993) Continued JCC(X) Feasibility Studies, AOA, ORD development and mission package and host platform definition. Funded JCC(X) requirements development process. Prepared documentation required for a Program Initiation decision.</p> <p>(U) (\$15.162) Began pre-Program Initiation AOA, feasibility studies, and ORD Development for LHA Replacement ships.</p> <p>2. (U) FY 2002 PLAN:</p> <p>(U) (\$9.868) Continue and complete JCC(X) Feasibility Studies, ORD development and mission package and host platform definition. Fund limited industry participation in JCC(X) requirements development process. Prepare documentation required for a Program Initiation decision.</p> <p>(U) (\$4.880) Continue and complete LHA Replacement Feasibility Studies. Prepare documentation required for a Program Initiation decision.</p> <p>3. (U) FY 2003 PLAN:</p> <p>(U) (\$ 2.983) Begin Pre-Program Initiation Studies for Navy High Speed Vessel (HSV) in support of the Navy force transformation process. To achieve rapid transformation, new joint battle force architectures, advanced ship concepts, technology development and operational demonstrations are required. Resources will be used for a robust Navy After Next (NAN) force architecture development effort that will support the study, analysis and testing of alternative, innovative force structure concepts, including advanced hull, machinery and payload concepts. The development and validation of concept and analysis tools will be done with these resources to support the Navy's short and long term future force strategic plan in a joint battle force context.</p>		

R-1 SHOPPING LIST - Item No. 61-2 of 61-5

**Exhibit R-2, RDT&E Budget Item Justification**  
(Exhibit R-2, page 2 of 5)

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Budget Item Justification

DATE:

**February 2002**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

R-1 ITEM NOMENCLATURE

**RDT& E, NAVY/BA4**

SHIP PRELIMINARY DESIGN/FEASIBILITY STUDIES

SHIP DEVELOPMENT (ADV) / S0408

C. (U) Other Program Funding Summary: Not applicable.

(U) Related RDT&E:

(U) PE 0603563N (Ship Concept Advanced Design)

(U) PE 0604567N (Ship Contract Design/Live Fire T&E)

D. (U) Acquisition Strategy: Not applicable.

This is a non acquisition program that supports pre-Milestone I efforts for potential ship acquisition programs.

E. (U) Schedule Profile:

Program Milestones

FY 2001

FY 2002

FY2003

4Q LHA Replacement MS A

3Q JCC(X) Program Initiation

Engineering Milestones TBD - Milestone schedule is established at Program Initiation.

T&E Milestones See individual ship acquisition program documentation.

Contract Milestones See Individual ship acquisition program documentation.

R-1 SHOPPING LIST - Item No. 61-3 of 61-5

**Exhibit R-2, RDT&E Project Justification**

(Exhibit R-2, page 3 of 5)

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2002</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
<b>RDT&amp;E,N/4</b>			Ship Prelim Design & Feasibility Studies/0603564N			Ship Development (ADV)/S0408						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	WR	NSWC Dahlgren, VA	9.592	1.780		0.700	Various			Cont.	Cont.	N/A
	WR	NSWC Carderock, MD	1.480	6.383	Various	1.425	Various			Cont.	Cont.	N/A
	WR	NSWC Panama City	0.000	1.300	Various					Cont.	Cont.	N/A
	WR	NAVAIR	0.000	0.800	Various	0.300	Various			Cont.	Cont.	N/A
	PD	SPAWAR	3.030	5.321	Various	2.000	Various			Cont.	Cont.	N/A
	WR/Reqn	Other Government	10.558	1.615	Various			1.5	Various	Cont.	Cont.	N/A
	C/CPFF	Nichols Adv Marine, VA	2.280	9.975	Various	3.125	Various			Cont.	Cont.	N/A
	Comp	J.J. McMullen, VA	5.857	0.327	Various					Cont.	Cont.	N/A
	Various	Other Contractor	19.165	7.594	Various	7.173	Various	1.463	Various	Cont.	Cont.	N/A
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			51.962	35.095		14.723		2.963		Cont.	Cont.	N/A
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 61-4 of 61-5

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 4 of 5)

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2002</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
<b>RDT&amp;E,N/4</b>			Ship Prelim Design & Feasibility Studies/0603564N				Ship Development (ADV)/S0408					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel				0.060		0.025		0.020		Cont.	Cont.	N/A
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.060		0.025		0.020		Cont.	Cont.	N/A
Remarks:												
Total Cost			51.962	35.155		14.748		2.983		Cont.	Cont.	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 61-5 of 61-5

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 5 of 5)

**UNCLASSIFIED**