

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-4</b>					R-1 ITEM NOMENCLATURE 0603564N/Ship Preliminary Design and Feasibility Studies			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	12.478	6.840	0.000	0.000	0.000	0.000	0.000	0.000
33096/Littoral Combat Ship	0.000	3.934	0.000	0.000	0.000	0.000	0.000	0.000
S0408/Ship Development (Adv)	12.478	2.906	0.000	0.000	0.000	0.000	0.000	0.000

**Defense Emergency Response Funds (DERF) Funds:** None

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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.

R-1 SHOPPING LIST - Item No. 54 - 1 of 54 - 16

UNCLASSIFIED

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 1 of 16)

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>		PROGRAM ELEMENT NUMBER AND NAME 0603564N/Ship Preliminary Design and Feasibility Studies			PROJECT NUMBER AND NAME S0408/Ship Development (Adv)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	12.478	2.906	0.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								

### A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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). These studies may also include operational measurements and trials on experimental ships, such as the High Speed Vessel (HSV), to insure ship technologies are applicable to future US Navy Ships. 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.

R-1 SHOPPING LIST - Item No. 54 - 2 of 54 - 16

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 2 of 16)

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603564N/Ship Preliminary Design and Feasibility Studie	PROJECT NUMBER AND NAME S0408/Ship Developemnt (Adv)																	
<b>B. Accomplishments/Planned Program</b>																			
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R-1 SHOPPING LIST - Item No. 54 - 3 of 54 - 16

UNCLASSIFIED

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R-1 SHOPPING LIST - Item No. 54 - 4 of 54 - 16

UNCLASSIFIED

# UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603564N/Ship Preliminary Design and Feasibility Studies	PROJECT NUMBER AND NAME S0408/Ship Development (Adv)		

**C. PROGRAM CHANGE SUMMARY:**

	FY 2002	FY 2003	FY 2004	FY 2005
Funding:				
Previous President's Budget (FY 03 Pres Controls) :	14.748	2.983	4.975	10.921
Current BES/President's Budget: (FY04 President Controls)	12.478	2.906	0.000	0.000
Total Adjustments	-2.270	-0.077	-4.975	-10.921
Summary of Adjustments				
Reprogrammings	-1.500		15.700	11.000
FY2002 SBIR (dtd 5-15-02)	-0.336			
FY 02 Actuals (30-Sept)	-0.363			
Minor Adjustments	-0.071	-0.077		
Realign HSV Lease Funding			-20.675	-21.921
Subtotal	-2.270	-0.077	-4.975	-10.921

Schedule:

Not Applicable.

  
  
  

Technical:

I Not Applicable.

R-1 SHOPPING LIST - Item No. 54 - 5 of 54 - 16

UNCLASSIFIED

Exhibit R-2a, RD TEN Project Justification  
(Exhibit R-2a, page 5 of 16)

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-4</b>		PROGRAM ELEMENT NUMBER AND NAME 0603564N/Ship Preliminary Design and Feasibility Studies			PROJECT NUMBER AND NAME S0408/Ship Development (Adv)				

  

**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) PE 0603563N (Ship Concept Advanced Design)										
(U) PE 0604567N (Ship Contract Design/Live Fire T&E)										

  

**E. ACQUISITION STRATEGY: \***

This is a non acquisition program that supports pre-milestone 1 efforts for potential ship acquisition programs.

  

**F. MAJOR PERFORMERS: \*\***

Naval Surface Warfare Center at Carderock, Maryland - Perform engineering review services, operational monitoring and trials, classification society rules review and validation - October 2002

  

\* Not required for Budget Activities 1,2,3, and 6  
 \*\* Required for DON and OSD submit only.

R-1 SHOPPING LIST - Item No. 54 - 6 of 54 - 16

UNCLASSIFIED

# UNCLASSIFIED

## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-4			0603564N/Ship Preliminary Design and Feasibility Studies			S0408/Ship Development (Adv)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
Systems Engineering	WR	NSWC Dahlgren, VA	12.072								12.072	
	WR	NSWC Carderock, MD	8.703	0.836							9.539	
	WR	NSWC Panama City	1.300								1.300	
	WR	NAVAIR	1.100								1.100	
	PD	SPAWAR	10.351								10.351	
	WR/Regn	Other Government	11.588								11.588	
	C/CPFF	Nichols Adv Marine, VA	15.380								15.380	
	Comp	J.J. McMullen, VA	6.184								6.184	
	Various	Other Contractor	32.469								32.469	
											0.000	
Subtotal Product Development			99.147	0.836		0.000		0.000		0.000	99.983	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-4</b>			PROGRAM ELEMENT 0603564N/Ship Preliminary Design and Feasibility Studies			PROJECT NUMBER AND NAME S0408/Ship Development (Adv)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WR	NSWC Carderock, MD	0.000	2.070							2.070	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	2.070		0.000		0.000		0.000	2.070	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel			0.025								0.025	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.025	0.000		0.000		0.000		0.000	0.025	
Remarks:												
Total Cost			99.172	2.906		0.000		0.000		0.000	102.078	
Remarks:												

R-1 SHOPPING LIST - Item No. 54 - 8 of 54 - 16

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis  
(Exhibit R-3, page 8 of 16)



UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:											
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
RDT&E, N / BA-4												0603564N/Ship Preliminary Design and Feasibility Studies												S0408/Ship Development (Adv)											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4							
Milestones		HSV Contract Award				△		HSV Delivery																											
Engineering Support																																			
Test & Evaluation																																			
Operational Test																																			
Production Milestones																																			

R-1 SHOPPING LIST - Item No. 54 - 9 of 54 - 16

\* Not required for Budget Activities 1, 2, 3, and 6

**UNCLASSIFIED**

**CLASSIFICATION:**

[illegible]

R-1 SHOPPING LIST - Item No. 54 - 10 of 54 - 16

**UNCLASSIFIED**

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 10 of 16)

# UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603564N/Ship Preliminary Design and Feasibility Studies				PROJECT NUMBER AND NAME 33096 - Littoral Combat Ship Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	3.934	0.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								

### A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project performs studies and analysis to address requirements for a future Navy focus mission, high speed ship. Included in this project is Analysis of Alternatives (AOA) studies and other engineering efforts to perform impact studies of warfare, hull, mechanical and electrical subsystems on advanced high speed ship designs. Also included is evaluation of advanced and alternative technologies and high speed ship concepts to assess their suitability in littoral environment. Products include initial requirements 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; including Operational Requirements Document (ORD) and other documentation required at Program Initiation.

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<b>B. Accomplishments/Planned Program</b>																			
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<div style="border: 1px solid black; padding: 5px; min-height: 60px;">Begin implementation of Technical Team responsible for providing expertise to evaluate/support high speed studies in the area of combat systems, HM&amp;E, C4ISR, and test and evaluation. The team consists of Government warfare centers, laboratories, universities and selected technical support contractors. This team will provide the engineering expertise to evaluate/support the industry-developed concepts and technology demonstrations of new system concepts and mission systems in order to reduce risk on components and subsystems. Begin development of test and evaluation master plan (TEMP).</div>																			
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RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">Begin Analysis of Alternatives (AOA). Develop operational context in which LCS will operate. This will include parametric studies, operational concept and missions, Threat Assessment, SHIP Concept Alternatives, and Cost and Manning Analysis and development of Operational Requirements Document (ORD),</div>																			
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R-1 SHOPPING LIST - Item No. 54 - 12 of 54 - 16

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification  
(Exhibit R-2a, page 12 of 16)

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603564N - Ship Preliminary Design and Feasibility Studies	PROJECT NUMBER AND NAME 33096 - LCS Development		

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 03 Pres Controls):	0.000	0.000	0.000	0.000
Current BES/President's Budget: (FY04 President Controls)	0.000	3.934	0.000	0.000
Total Adjustments	0.000	3.934	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions				
Reprogrammings		3.934		
Subtotal	0.000	3.934	0.000	0.000

Schedule:

See individual projects

Technical: TBD

R-1 SHOPPING LIST - Item No. 54 - 13 of 54 - 16

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Exhibit R-2a, RDTEEN Project Justification  
(Exhibit R-2a, page 13 of 16)

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>			PROGRAM ELEMENT NUMBER AND NAME 0603564N - Ship Preliminary Design and Feasibility Study			PROJECT NUMBER AND NAME 33096 - LCS Development			

  

**D. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
BLI 160000 (OPN)	0.000	0.000	0.000	0.000	0.000	0.000	360.000	830.000	CONT	CONT
BLI 212700 (SCN)	0.000	0.000	0.000	0.000	0.000	0.000	440.000	880.000		
0603561N	0.000	0.000	163.000	185.000	420.000	410.000	150.000	0.000		

  

**E. ACQUISITION STRATEGY:**

(U)The LCS acquisition strategy encompasses four phases: Phase I – Concept and Technology Development. Phase II - System Development and Demonstration. Phase III - Production and Deployment, Phase IV - Operations and Support

  

**F. MAJOR PERFORMERS:**

TBD.

R-1 SHOPPING LIST - Item No. 54 - 14 of 54 - 16

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>			PROGRAM ELEMENT PE 0603564N/Preliminary Design and Feasibility Studies			PROJECT NUMBER AND NAME 33096 - LCS Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>			PROGRAM ELEMENT 0603564N/Ship Preliminary Design and Feasibility Studies			PROJECT NUMBER AND NAME 33096 - LCS Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Developmental Test & Evaluation												
Developmental Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E												
Remarks:												
Contractor Engineering Support	GSA	ANTEON, Arlington, VA	0.000	0.978	1QFY03							
	GSA	Various	0.000	0.000	1QFY03							
Government Engineering Support	WR	NSWC/CD, Bethesda, MD	0.000	0.625	N/A							
	WR	NSWC/DD, Dahlgren, VA	0.000	1.592	N/A							
	WR	NSWC/PC, Panama City, FL	0.000	0.000	N/A							
	Various	Government Activities	0.000	0.000	N/A							
	WR	NAVAIR, Pax River, MD	0.000	0.075	N/A							
	WR	SPAWAR, San Diego, CA	0.000	0.075	N/A							
Program Management Support	Various	Various	0.000	0.389	N/A							
Travel			0.000	0.200								
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	3.934								
Remarks:												
Total Cost			0.000	3.934		0.000		0.000		0.000	CONT	
Remarks:												