

CLASSIFICATION:**UNCLASSIFIED****EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION**

DATE

February 2008

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RD TEN/BA 5**0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E**

COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	50.947	62.068	72.932	63.830	89.862	77.365	80.838
1803 / SHIP CONTRACT DESIGN	6.274	4.658	4.763	8.497	6.437	5.323	5.419
2198 / Live Fire Test & Evaluation	1.400	0.000	0.000	0.000	0.000	0.000	0.000
2465 / DC/Survivability	13.149	5.804	2.421	4.981	8.912	3.706	8.497
3108 / CVN 80 Total Ship Integration	0.000	0.000	0.000	0.000	41.738	47.701	47.701
3133 / Sea Base to Shore Connectors (Contract Des)	0.000	14.320	26.154	9.854	1.878	1.942	1.999
3179 / CVN-79 Total Ship Integration	0.000	26.420	37.523	38.084	27.946	16.971	15.990
4007 / CVN 21 LFT&E	7.271	3.130	2.071	2.414	2.951	1.722	1.232
4008 / CVN 78 Total Ship Integration	21.446	6.743	0.000	0.000	0.000	0.000	0.000
9999 / Congressional Add	1.407	0.993	0.000	0.000	0.000	0.000	0.000

A. MISSION DESCRIPTION:

This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development of engineering, programmatic and acquisition documentation including ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This PE also supports the Congressionally mandated Live Fire Test and Evaluation program for new ship designs.

Contract Design has traditionally been the engineering development of the technical and contractual definition of the ship design (including ship specifications and drawings) to a level of detail sufficient for shipbuilders to make a sound estimate of the construction cost and schedule. Additionally, the contract design packaged developed under this PE has provided the technical baseline from which the Navy selects the shipbuilder who then develops the detail design package required to support the construction and eventual delivery of the ship. This PE also supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions, and supports engineering planning and ship affordability studies.

Under Acquisition Reform for new design ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering Integrated Product and Process Development (IPPD) process extending through and after contract award. This serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, system programs, and suppliers. Government/Industry Integrated Product Team(s) (IPTs) will utilize the IPPD process to develop the design in an Integrated Product and Data Environment (IPDE). The design approach is part of an acquisition strategy that is based on commercial practices and incorporates a phased technical definition.

Project 3134 was realigned to PE 0208058N FY07 through FY11.

CLASSIFICATION:**UNCLASSIFIED****EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)**

DATE

February 2008

APPROPRIATION/BUDGET ACTIVITY

RDTEN/BA 5

R-1 ITEM NOMENCLATURE

0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E**B. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2007	FY 2008	FY 2009
Previous President's Budget: (FY 08 Pres Controls)	51.729	62.404	73.698
President's Budget: (FY 09 Pres Controls)	50.947	62.068	72.932
Total Adjustments	-0.782	-0.336	-0.766
Programmatic Adjustments			
Reprogramming	2.260		
Programmatic Adjustment	-1.170	-0.993	-0.780
SBIR	-1.872	0.000	
NWCF	0.000		0.014
Congressional Adjustment	0.000	0.597	
Total Adjustment	-0.782	-0.336	-0.766

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Project Cost	6.274	4.658	4.763	8.497	6.437	5.323	5.419	
RDT&E Articles Qty	0	0	0	0	0	0	0	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project supports development of all technical, programmatic and contractual documentation required for the acquisition of various ships in the Navy's Shipbuilding Program. The major effort is the engineering development of the technical and contractual definition of the ship's design (e.g. ship specifications and drawings), with sufficient details for the prospective shipbuilder to make a sound estimate of construction cost and schedule. It also serves as the technical definition from which the shipbuilder develops the shipbuilding detailed design and testing package required to build and test the ship. This funding also provides for Navy retention of unique ship design knowledge. It provides the Navy with a digital, ship design knowledge base, including lessons learned, required to ensure that a proper development, analysis and evaluation can be conducted of any current or future planned Navy ship. This data base will serve as the basis to evaluate and qualify any future ship design. Another area this project funds is the development of specific Navy ship criteria and standards for newly developed technologies. Additionally, as new laws are passed, new safety regulations and environmental criteria are developed and other legal/Congressional requirements identified, this project funds the translation into Navy ship design criteria and standards. This project also funds the translation of the traditional Ship Specifications into performance-based criteria, which will serve for the future acquisition of Navy Ship and supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions. This project also funds the research, development, test, and evaluation of shipyard workload and resource management tools. The funding in this project unit supports Cruiser Modernization Program. DDG Modernization Program effort does not start until FY10.

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN				
B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
					FY 2007		FY 2008		FY 2009	
Accomplishments/Effort/Subtotal Cost					6.274		4.658		4.763	
RDT&E Articles Quantity					0		0		0	
Continued CG Modernization design and engineering efforts; continued government efforts for design products, data base development, specifications development, program planning, and system integration efforts for lead ship. Continued system integration efforts, baseline preliminary and detail design for combat systems, manning reduction studies, and improved embedded training efforts.										
C. OTHER PROGRAM FUNDING SUMMARY:										
Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost	
OPN 096000 CG Modernization	231.167	216.031	271.170	389.776	410.283	459.048	468.868	700.570	3,419.962	
WPN 422300 CG Modernization	18.396	23.402	45.168	52.413	54.127	55.160	56.224	52.630	374.235	
D. ACQUISITION STRATEGY: N/A										
E. MAJOR PERFORMERS: N/A										

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
CG Mod Electronic Systems Eng	C/CPAF	Lockheed Martin, Moorestown, NJ	7.235	3.774	FEB-07	2.158	NOV-07	2.263	NOV-08		15.430	0.000
Systems Integration and B/L Design	C/CPAF	Northrop Grumman	0.000	1.000	FEB-07	1.000	NOV-07	1.000	NOV-08		3.000	0.000
Subtotal Product Development			7.235	4.774		3.158		3.263		0.000	18.430	0.000
Remarks:												
Program / Engineering Spt	MISC	NSWC/SSES	0.800	1.000		1.000		1.000			3.800	0.000
Program / Engineering Spt	MISC	NSWC/DD	1.000	0.000		0.000		0.000		0.000	1.000	0.000
Program / Engineering Spt	MAC	CSC/BAE	2.000	0.500		0.500		0.500		0.000	3.500	0.000
Subtotal Support Costs			3.800	1.500		1.500		1.500		0.000	8.300	0.000
Remarks:												
Subtotal Test and Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
Subtotal Management Services			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
Total Cost			11.035	6.274		4.658		4.763		0.000	26.730	0.000

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE

February 2008

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDTEN/BA 5

0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E

1803/SHIP CONTRACT DESIGN

Fiscal Year	2007				2008				2009				2010				2011				2012				2013											
	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								
Acquisition Milestones																																				
CG Baseline 2 Contract Design																																				
CG Baseline 3 Contract Design																																				
CG Baseline 4 Contract Design																																				
Test & Evaluation Milestones																																				
Production Milestones																																				
CG Modernization: System Procurement Awards	▲				▲				▲				▲				▲				▲				▲				▲							
Deliveries									1								2								2											

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Continue CG Baseline 2 Engineering		1Q-4Q	1Q-4Q	1Q-2Q				
Continue CG Baseline 3 Engineering			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q	
Continue CG Baseline 4 Engineering						1Q-4Q	1Q-4Q	1Q-4Q
CGM PROCUREMENT AWARD								
CGM PROCUREMENT AWARD		1Q						
CGM PROCUREMENT AWARD		1Q						
CGM PROCUREMENT AWARD			1Q					
CGM PROCUREMENT AWARD			1Q					
CGM PROCUREMENT AWARD				1Q				
CGM PROCUREMENT AWARD				1Q				
CGM PROCUREMENT AWARD				1Q	1Q			
CGM PROCUREMENT AWARD					1Q			
CGM PROCUREMENT AWARD					1Q			
CGM PROCUREMENT AWARD						1Q		
CGM PROCUREMENT AWARD						1Q		
CGM PROCUREMENT AWARD						1Q		
CGM PROCUREMENT AWARD							1Q	
CGM PROCUREMENT AWARD							1Q	
CGM PROCUREMENT AWARD							1Q	
CGM PROCUREMENT AWARD								1Q
CGM PROCUREMENT AWARD								1Q
CGM PROCUREMENT AWARD								1Q

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 2198/Live Fire Test & Evaluation		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	1.400	0.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE February 2008
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 2198/Live Fire Test & Evaluation		
B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
		FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost		1.400	0.000	0.000
RDT&E Articles Quantity		0	0	0
C. OTHER PROGRAM FUNDING SUMMARY:				
D. ACQUISITION STRATEGY:				
E. MAJOR PERFORMERS:				

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 2465/DC/Survivability		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Project Cost	13.149	5.804	2.421	4.981	8.912	3.706	8.497	
RDT&E Articles Qty	0	0	0	0	0	0	0	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The mission of the LHA Replacement (R) Program is an incremental development ship construction program designed to: provide a functional replacement for the LHA 1 Class ships which will reach the end of their extended service lives in consecutive years beginning in FY2009; ensure that the Amphibious Fleet remains capable of Expeditionary Strike Warfare in support of the Navy and Marine Corp's Global Concept of Operations (CONOPS) well into the 21st century; and provide for an affordable and sustainable amphibious ship development program. LHA(R) ships will provide forward presence and power projection as an integral part of Joint, interagency, and multi-national maritime expeditionary forces. Additionally, they will be designed to operate for sustained periods in transit to and operations in an Amphibious Objective Area to include the embarkation, deployment, and landing of a Marine Landing Force in an assault by helicopters and tilt rotors supported by Joint Strike Fighters.

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 2465/DC/Survivability				
B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
					FY 2007		FY 2008		FY 2009	
Accomplishments/Effort/Subtotal Cost					13.149		5.804		2.421	
RDT&E Articles Quantity					0		0		0	
Resolve low confidence areas in analytical models for Live Fire Test and Evaluation (LFT&E) concerns and continue the LFT&E surrogate test program.										
C. OTHER PROGRAM FUNDING SUMMARY:										
Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost	
SCN 304100 LHA(R) LEAD SHIP	1,131.121	1,377.414	14.310	70.000	0.000	0.000	0.000		2,508.535	
SCN 304100 LHA(R) LEAD SHIP (OUTFITTING)	0.000	0.000	0.000	13.694	22.643	24.403	2.042		55.050	
SCN 304100 LHA(R) LEAD SHIP (POST-DELIVERY)	0.000	0.000	0.000	0.000	0.000	23.347	0.000		15.820	
D. ACQUISITION STRATEGY:										
Acquisition strategy signed February 7, 2005 approved strategy for sole source to Northrup Grumman Ship Systems (NGSS) to incorporate previous LHD engineering, design and producability lessons-learned into LHA(R). Advanced Procurement contract for Long Lead-Time Material (LLTM) procurement and engineering support awarded July 05 with continuation of these efforts in FY06 prior to award of Detail Design and Construction (DD&C) contracton 1 June 2007.The Advance Procurement contract was subsumed by the FPI DD&C contract.										
E. MAJOR PERFORMERS:										
NGSS - Funds have been provided for preliminary and contract design including ship design management, design integration, hull systems engineering, machinery control, human system integration, mission systems and total ship survivability analysis for preliminary and contract design.										
CSC Corp. - Funds have been provided for preliminary and contract design. Specific efforts include ship design management, design integration, hull systems engineering, machinery control, human system integration, mission systems and total ship survivability analysis for preliminary and contract design.										
NSWC, Carderock (Bethesda, MD) - Funds have been provided for preliminary and contract design. Specific efforts include ship design management, design integration, hull systems engineering, machinery control, human system integration, mission systems and total ship survivability analysis for preliminary and contract design. Additionally, the activity will function as Live Fire Test and Evaluation (LFT&E) manager, perform/conduct surrogate tests and develop survivability analysis.										

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE					
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDTEN/BA 5		0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E						2465/DC/Survivability							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract			
Ship Design	Various	Various	86.559	0.000		0.000		0.000		0.000	86.559	0.000			
Subtotal Product Development			86.559	0.000		0.000		0.000		0.000	86.559	0.000			
Remarks:															
Subtotal Support Costs			0.000	0.000		0.000		0.000		0.000	0.000	0.000			
Remarks:															
Developmental Test & Evaluation	Reimb	Various	1.534	0.200	OCT-06	0.400	OCT-07	0.400	OCT-08	5.135	7.669	0.000			
Operational Test & Evaluation	Reimb	COMOPTEVOR	1.120	0.923	OCT-06	1.110	OCT-07	0.648	OCT-08	10.544	14.345	0.000			
Live Fire Test & Evaluation	Reimb	Various	24.086	8.800	OCT-06	4.273	OCT-07	1.284	OCT-08	12.217	50.660	0.000			
Enterprise Testing	Reimb	Various	0.000	0.000		0.000		0.000		0.000	0.000	0.000			
Subtotal Test and Evaluation			26.740	9.923		5.783		2.332		27.896	72.674	0.000			
Remarks:															
Program Management Support			4.261	3.151		0.021		0.089		0.000	7.522	0.000			
Travel			0.040	0.075		0.000		0.000		0.000	0.115	0.000			
Subtotal Management Services			4.301	3.226		0.021		0.089		0.000	7.637	0.000			
Remarks:															
Total Cost			117.600	13.149		5.804		2.421		27.896	166.870	0.000			

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 2465/DC/Survivability			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Overarching Integrated Product Team								
Detail Design - Lead Ship		1Q - 4Q	1Q - 4Q					
Feasibility Studies - Lead Ship								
Milestone B / Program Review								
DAB Program Review		2Q						
Preliminary / Contract Design - Follow Ship		1Q - 4Q	1Q - 4Q	1Q				
Developmental Testing (A)								
Developmental Testing (B1)		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Vulnerability Assessment Report (VAR)		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Vulnerability Assessment Report (VAR #1 and #2)			4Q				3Q	
Survivability Assessment Report (SAR)								
Surrogate Testing								
Update TEMP				1Q				
Shipbuilding Contract Award - Lead Ship		3Q						
Lay Keel - Lead Ship			3Q					

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3133/Sea Base to Shore Connectors (Contract Des)		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	0.000	14.320	26.154	9.854	1.878	1.942	1.999
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(3133) Sea Base to Shore Connector- This program will meet the requirements of the Navy's Sea Base-to-Shore Connector initiatives and will provide an Over-the-Horizon, ship to objective amphibious lift capability as well as the capability to move across the beach. This project provides for the Systems Development and Demonstration package required for the solicitation for detail design/construction and test of the initial article. Test and evaluation of components and systems will also be completed under this project.

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APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 3133/Sea Base to Shore Connectors (Contract Des)			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
						FY 2007	FY 2008	FY 2009	
Accomplishments/Effort/Subtotal Cost						0.000	14.320	26.154	
RDT&E Articles Quantity						0	0	0	
<p>Start Technology Development in FY08: Reduces technology risk and determines the appropriate set of technologies to be integrated into a full system.</p> <p>Initiate preparation, in FY08, for start of Preliminary Design in FY09.</p> <p>Start the contract design package required for solicitation for detail design/construction and test of the initial article.</p> <p>Perform Test and Evaluation of components and system's initial articles.</p>									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
SCN PE 0204411N / Construction	0.000	0.000	0.000	0.000	217.080	0.000	215.881	4,158.000	4,590.961
RDT&EN PE 0603564N / Ship Preliminary Design	12.988	12.900	0.000	0.000	0.000	0.000	0.000	0.000	40.536
D. ACQUISITION STRATEGY:									
<p>FY06-07 - AoA, FY06-10 Concept Refinement, FY09-10 Preliminary Design/Contract Design, FY10-11 Systems Development,</p> <p>FY11-13 Production</p>									
E. MAJOR PERFORMERS:									
<p>Field Activities & Locations - Work Performed</p> <p>NSWC Carderock, Bethesda, MD</p> <p>Systems Engineering</p> <p>NSWC Panama City, FL</p> <p>Systems Engineering</p> <p>Contractors & Locations - Work Performed</p> <p>TBD</p> <p>Universities & Locations - Work Performed</p>									

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTEN/BA 5	0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	3133/Sea Base to Shore Connectors (Contract Des)

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE					
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDTEN/BA 5		0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E						3133/Sea Base to Shore Connectors (Contract Des)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract			
Primary Hardware Development	CPFF	Various	0.000	0.000		2.080	JAN-08	3.146	JAN-09	0.800	6.026	0.000			
Ancillary Hardware Development	CPFF	Various	0.000	0.000		0.877	JAN-08	3.035	JAN-09	0.250	4.162	0.000			
Component Development	CPFF	Various	0.000	0.000		1.320	JAN-08	3.200	JAN-09	0.300	4.820	0.000			
Ship Design	CPFF	Various	0.000	0.000		1.785	JAN-08	3.773	JAN-09	1.009	6.567	0.000			
Systems Engineering	CPFF	Various	0.000	0.000		1.900	JAN-08	3.200	JAN-09	0.700	5.800	0.000			
Subtotal Product Development			0.000	0.000		7.962		16.354		3.059	27.375	0.000			
Remarks:															
Developmental Support	WX	Various	0.000	0.000		1.300		1.650		1.250	4.200	0.000			
Software Development	CPFF	Various	0.000	0.000		0.700	JAN-08	1.750	JAN-09	1.050	3.500	0.000			
Integrated Logistics Support	CPFF	Various	0.000	0.000		0.275	JAN-08	0.500	JAN-09	0.500	1.275	0.000			
Studies & Analyses	FFP	Various	0.000	0.000		0.769		0.800		0.544	2.113	0.000			
Subtotal Support Costs			0.000	0.000		3.044		4.700		3.344	11.088	0.000			
Remarks:															
Developmental Test & Evaluation	CPFF	Various	0.000	0.000		0.804	JAN-08	1.375	JAN-09	2.500	4.679	0.000			
Operational Test & Evaluation	CPFF	Various	0.000	0.000		0.000	JAN-08	0.000	JAN-09	3.100	3.100	0.000			
Live Fire Teat & Evaluation	CPFF	Various	0.000	0.000		0.000	JAN-08	0.000	JAN-09	0.970	0.970	0.000			
Subtotal Test and Evaluation			0.000	0.000		0.804		1.375		6.570	8.749	0.000			
Remarks:															
Contractor Engineering Support	CPFF	Various	0.000	0.000		0.900	NOV-07	1.200	JAN-09	0.800	2.900	0.000			
Gov't Engineering Support	WX	NSWC	0.000	0.000		0.900		1.250		1.020	3.170	0.000			
Program Management Support	CPFF	Various	0.000	0.000		0.650	NOV-07	1.175	JAN-09	0.800	2.625	0.000			
Travel	TO	NAVSEA Travel	0.000	0.000		0.060		0.100		0.080	0.240	0.000			
Subtotal Management Services			0.000	0.000		2.510		3.725		2.700	8.935	0.000			
Remarks:															
Total Cost			0.000	0.000		14.320		26.154		15.673	56.147	0.000			

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE

February 2008

APPROPRIATION/BUDGET ACTIVITY
RD TEN/BA 5

PROGRAM ELEMENT NUMBER AND NAME
0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E

PROJECT NUMBER AND NAME
3133/Sea Base to Shore Connectors (Contract Des)

Fiscal Year	2007				2008				2009				2010				2011				2012				2013				
	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	
Acquisition Milestones				△ MSA												△ MS B													
Decision Reviews/ Contract Award	△ CD												△ CDR				△ Initial Prod Contract Award												
Concept/Tech Development									△																				
Initial Capabilities Document (ICD)	△ ICD																												
Analysis of Alternatives (AoA)	△	AoA	△																										
Concept Refinement		△																											
Capability Development Document (CDD)									△				△																
Technology Development									△																△				
Preliminary Design/ Contract Development											△					△													
System Development & Demonstration																	△								△				

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3133/Sea Base to Shore Connectors (Contract Des)			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Acquisition Milestones		4Q			4Q			
Contract Award (Construction)						1Q		
Concept / Tech development		1Q-4Q	1Q-4Q	1Q				
Initial Capabilities Document		1Q						
Analysis of Alternatives		1Q-3Q						
Concept Refinement		1Q-4Q	1Q-4Q					
Capability Development Document			3Q-4Q	1Q-4Q	1Q-2Q			
Technology Development			3Q-4Q	1Q-4Q	1Q-4Q	1Q		
Preliminary Design/Contract Design			4Q	1Q-4Q	1Q-3Q			
System Development & Demonstration					2Q-4Q	1Q		

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	0.000	26.420	37.523	38.084	27.946	16.971	15.990
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Development and related testing of CVN 78 class aircraft carrier specific technologies, the infusion of the ship technology base into existing and future aircraft carriers, and the potential realization of subsystem design capabilities not currently feasible. This project also funds the Contract Design efforts for the CVN 79. This project transitions the minimum sustaining technologies required to address obsolescence, critical survivability shortfalls as identified in CVN 78 class testing, future requirements, and technologies which did not mature in time to support the CVN 78. All systems developed in this project have the potential to support emerging requirements and other promising systems technologies for insertion into new aircraft carrier designs. The emphasis is directed toward developing ship hull, mechanical, propulsion, electrical, aviation, warfare systems, and combat support systems, sub-systems and components to maintain aircraft carrier affordability, manpower requirements, survivability, and operational capabilities and to meet the requirements of existing and pending regulations and statutes critical to the operation of future aircraft carriers. This project also encompasses those tasks required to develop the contract data package necessary to support CVN 79 procurement, including, but not limited to engineering support, programmatic and program support, logistics support, modeling and simulation, manpower and program related studies, and design support systems, such as the Integrated Digital Environment.

CLASSIFICATION:	UNCLASSIFIED
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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION	DATE February 2008
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APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration
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B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	26.420	37.523
RDT&E Articles Quantity	0	0	0

(U) CVN 78 Class Follow Ship Total Ship Integration:

The CVN 79 will incorporate advanced technologies to support efforts to address obsolescence, technology refresh, critical survival improvements, as well as continued improvements in manpower reduction and weight savings.

CVN 79 Total Ship Integration (TSI) will be accomplished through an IPPD contract with Northrup Grumman Newport News to incorporate technology advancements into the CVN 78 class baseline design. TSI efforts are focused on continued activities that integrate and optimize systems arrangements and design to maintain the Key Performance Parameters (KPPs) for weight and kg/service life allowance to the ORD threshold values. CVN 79 design efforts will provide required program management and logistics support.

(FY08): CVN 79 efforts will continue to reduce the ship acquisition cost through the establishment of the CVN 79 initial cost estimate supported by process initiatives, material selections, and lessons learned from the CVN 78 activities will be studied and analyzed to support the development of the CVN 78 class planning yard and life cycle support plan.

(FY09): Follow on efforts established under CVN 79 IPPD contract will transition for further development under the CVN 79 construction preparation contract. CVN 78 class testing, future requirements and other promising systems which did not mature in time for the CVN 78 will continue to be studied and reviewed.

C. OTHER PROGRAM FUNDING SUMMARY:

*Note: Only a portion of the funding in PE 0603570N is included in the CVN78 Class Program.

Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
SCN: 200100 Carrier replacement Program	1,106.950	3,145.026	3,926.439	1,494.646	1,444.373	2,513.230	3,171.707	Cont.	Cont.
PE 0603512N Carrier System Development	149.866	86.544	120.511	72.135	44.260	44.097	46.185	Cont.	Cont.
PE 0603570N Adv. Nuclear Power Systems	173.988	165.140	158.270	137.843	123.475	123.265	121.179	Cont.	Cont.

D. ACQUISITION STRATEGY:

The CVN 78 will be the first ship of the CVN 78 Class of aircraft carriers designed to replace USS Enterprise and the ships of the Nimitz Class. The CVN 78 will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system, advanced arresting gear system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration
<p>total ownership costs as compared to the Nimitz Class. Additionally, the following warfighting benefits will be realized: increased sortie generation rate, improved ship self defense capability, increased launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.</p> <p>E. MAJOR PERFORMERS: Northrop Grumman Newport News, Newport News, VA, Design/Component Development/Construction</p> <p>Naval Surface Warfare Center, Carderock, MD, Technology Design & Development</p> <p>Naval Surface Warfare Center, Dahlgren, Virginia, Technology Design & Development</p>		

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Total Ship Integration	CPAF	NGNN, VA	0.000	0.000		10.600	JAN-08	19.979	DEC-08	CONT	CONT	0.000
	WR	NSWC Carderock	0.000	0.000		2.510	JAN-08	4.642	OCT-08	CONT	CONT	0.000
	WR	NSWC Dahlgren	0.000	0.000		2.510	JAN-08	1.460	OCT-08	CONT	CONT	0.000
	WR	NAWCAD Pax River	0.000	0.000		1.155	JAN-08	0.135	OCT-08	CONT	CONT	0.000
	WR	SPAWAR	0.000	0.000		1.758	JAN-08	0.166	OCT-08	CONT	CONT	0.000
	CPFF	NAVSEA SEAPORT	0.000	0.000		3.690	JAN-08	5.315	DEC-08	CONT	CONT	0.000
	Various	Miscellaneous	0.000	0.000		3.197	JAN-08	5.826	DEC-08	CONT	CONT	0.000
	WR	NAVSEA, PMS 320	0.000	0.000		1.000	JAN-08	0.000		CONT	CONT	0.000
Subtotal Product Development			0.000	0.000		26.420		37.523		CONT	CONT	0.000
Remarks:												
Total Cost			0.000	0.000		26.420		37.523		CONT	CONT	0.000

CLASSIFICATION:		UNCLASSIFIED																														
		EXHIBIT R-4, SCHEDULE PROFILE																								DATE						
		February 2008																														
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																		
RD TEN/BA 5		0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E												3179/CVN-79 Total Ship Integration																		
Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	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				
Acquisition Milestones								CVN 78 DAB PR ▲																								
Propulsion Plant																																
EMALS		LLR CDR ▲						SYS CDR ▲																								
Advanced Arresting Gear				CDR 1 ▲				Conf Review ▲																								
Test & Evaluation Milestones																																
Development Test		DT A2 ▲						DT B1 ◆																								
Operational Test				OT B1 ▲				OTR OT B2 ▼																								
Operational Assessments																																
Contract Milestones																																
IPPD Contract																																
CP Contract																																
Construction Contract																																
Full Funding (\$ CN)								X																								

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Operational Tests OT-B1		1Q						
EMALSP PDR								
Advanced Arresting Gear CDR 1		3Q						
Developmental Tests DT A-2		1-2Q						
AAG Configuration Review			3Q					
EMALS LLR CDR		1Q						
EMALS System CDR		4Q						
Developmental Tests DT-B1		4Q	1-4Q	1-4Q				
Operational Tests OT-B2			1-4Q	1Q				
EMALS TRR 1(HALT/HCT)			3Q					
CVN 21 DAB PR			2-3Q			2Q		
AAG TRR 1 (IT)			4Q					
CVN 78 Construction Contract Award			3Q					
CVN 78 SCN Full Funding			1Q					
Developmental Tests DT-B2				4Q	1-4Q	1-3Q		
Operational Tests OT-B3					1-4Q	1Q		
EMALS TRR 2 (DT/OA)				1Q				
EMALS LRIP				4Q				
AAG TRR 2 (IT)				4Q				
Developmental Tests DT-B3						4Q	1-4Q	1-4Q
Operational Tests OT-B4							1-4Q	1Q
Developmental Tests DT-B4								
Operational Tests Readiness Reviews			2Q		1Q		1Q	
Operational Assessments		1-2Q		2-3Q		2-3Q		2-3Q
CVN 79 IPPD Contract Award		1Q						
CVN 79 CP Contract Award				1Q				
AAG MS C / LRIP					3Q			
CVN 80 IPPD Contract Award						1Q		
CVN 79 Construction Contract Award							1Q	
CVN 79 SCN Full Funding							1Q	

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL (CONTINUATION)						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
CVN 80 CP Contract Award								1Q

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Project Cost	7.271	3.130	2.071	2.414	2.951	1.722	1.232	
RDT&E Articles Qty	0	0	0	0	0	0	0	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project encompasses LFT&E efforts for the CVN78 class. Title 10, US Code, Section 2366, CVN 21 Operational Requirements Document (ORD) and the CVN 21 Test and Evaluation Master Plan , prescribe requirements for Live Fire Test and Evaluation (LFT&E). The purpose of LFT&E is to evaluate weapons and weapons systems in a realistic combat environment and to identify any mission threatening vulnerabilities early in the development process when there is time to take corrective action. The CVN 21 LFT&E Management Plan details the efforts, through testing and engineering analyses, to address potential design vulnerabilities.

The high unit cost of the CVN78 class and its shipboard systems preclude consideration of destructive testing of a full-up CVN 78 class hull with threats of the type that might be expected in combat. Consequently, the Navy must rely on other means to determine that CVN78 class ships will be able to survive and carry out its missions in the face of the threats identified in the CVN 21 System Threat Assessment Report.

The LFT&E strategy for the CVN78 class accounts for the uncertainty in its design features. The strategy assumes that as the program progresses through the stages of ship design, prior to the award of the construction contract, descriptive detail of CVN78 will increase and so will the ability to evaluate its survivability.

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE February 2008	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
					FY 2007		FY 2008		FY 2009
Accomplishments/Effort/Subtotal Cost					7.271		3.130		2.071
RDT&E Articles Quantity					0		0		0
<p>(U) FY07: Completing susceptibility assessment of the CVN 78 class. Continue to resolve low confidence areas in analytical models for LFT&E concerns and continue to conduct LFT&E surrogate test program. This includes the conduct of one test of an underwater protection features (innerbottom structure), the conduct of network recoverability tests on the ex-USS SHADWELL, and deliver the CVN 21 Program Vulnerability Assessment Report #3 . Initiate survivability modeling improvements. Continue with analytical bridge work between scaled model test results and analytical correlations. Update and develop new SVM/ASAP, Dynamic System Mechanics advanced Simulation (DYSMAS) & FSSIM models based on test results. Prepare to test full and scaled surrogate model targets as required by TEMP 1610 and the LFT&E Management Plan.</p> <p>(U) FY 08: The focus is towards improving the computer models, through the Verification, Validation and Accreditation (VV&A) process, used in susceptibility assessments of the CVN 78 class. Continue to resolve low confidence areas in analytical models for LFT&E concerns and continue to conduct LFT&E surrogate test program. Initiate the CVN 21 Vulnerability Assessment Report #3 UPDATE including any survivability modeling improvements. Continue with analytical bridge work between scaled model test results and analytical correlations. VV&A SVM, DYSMAS & FSSIM models for VAR 3 UPDATE. Investigate feasibility of conducting weapons effect test using a decommissioned aircraft carrier to fulfill the requirements of the full ship shock trial.</p> <p>(U) FY 09: Continue CVN 21 Vulnerability Assessment Report #3 UPDATE including any survivability modeling improvements. Plan/conduct weapons effect test using a decommissioned aircraft carrier to fulfill the requirements of the full ship shock trial.</p>									
C. OTHER PROGRAM FUNDING SUMMARY:									
*Note: Only a portion of the funding in PE 0603570N is included in the CVN78 ClassProgram.									
Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
BLI 200100 Carrier Replacement Program	1,106.950	3,145.026	3,926.439	1,494.646	1,444.373	2,513.230	3,171.707	Cont.	Con't
PE 0603512N Carrier System Development	149.866	86.544	120.511	72.135	44.260	44.097	46.185	Cont.	Cont.
PE 0603570N Adv. Nuclear Power Systems	173.988	165.140	158.270	137.843	123.475	123.265	121.179	Cont.	Cont.
D. ACQUISITION STRATEGY:									
The CVN 78 will be the first ship of the CVN 78 Class of aircraft carriers designed to replace USS Enterprise and the ships of the Nimitz Class.The CVN 78 will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system, advanced arresting gear system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the Nimitz Class. Additionally, the following warfighting benefits will be realized: increased sortie generation rate, improved ship self									

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E
<p>defense capability, increased launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.</p> <p>E. MAJOR PERFORMERS: NSWC Carderock Maryland; NSWC Carderock, Philadelphia Pennsylvania; NSWC Indian Head; NSWC Dam Neck Virginia; NSWC Dahlgren Virginia; NSWC Corona; NUWC Newport RI, NAWC Paxtuxent River, Virginia; SPAWARS San Diego California; SPAWARS Charleston SC; NRL; Aberdeen Test Center; OPTEVFOR; NGNN, CSC, MPR; Raytheon</p>		

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Live Fire Test & Evaluation	WR	NSWC Carderock, MD	28.763	5.701	JUL-07	2.685	JAN-08	1.051	DEC-08	CONT	CONT	0.000
	CPAF	NGNN	4.729	1.570	NOV-06	0.285	JAN-08	0.906	DEC-08	CONT	CONT	0.000
	WR	Miscellaneous	0.000	0.000		0.160	JAN-08	0.114	DEC-08	CONT	CONT	0.000
Subtotal Test and Evaluation			33.492	7.271		3.130		2.071		CONT	CONT	0.000
Remarks:												
Total Cost			33.492	7.271		3.130		2.071		CONT	CONT	0.000

CLASSIFICATION:		UNCLASSIFIED																														
		EXHIBIT R-4, SCHEDULE PROFILE																								DATE						
		February 2008																														
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																
RDTEN/BA 5				0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E												4007/CVN 21 LFT&E																
Fiscal Year	2007				2008				2009				2010				2011				2012				2013							
	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				
Acquisition Milestones								CVN 78 DAB PR ▲																CVN 79 DAB PR ▲								
Propulsion Plant	-----																															
EMALS		LLR CDR						SYS CDR ▲				TRR 1 ▲				TRR 2 ▲																
Advanced Arresting Gear			CDR 1 ▲					Conf Review ▲				TRR 1 ▲				TRR 2 ▲																
Test & Evaluation Milestones																																
Development Test		DT A2						DT B1								DT B2												DT B3				
Operational Test		OT B1						OT B2								OT B3												OT B4				
Operational Assessments																																
Contract Milestones																																
IPPD Contract		CVN 79 IPPD Contract Award ▲																														
CP Contract								CVN 78 Construction Contract Award ▲																								
Construction Contract								CVN 79 CP Contract Award ▲																								
Full Funding (\$ CN)								X																								

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Operational Tests OT-B1		1Q						
EMALSP PDR								
Advanced Arresting Gear CDR 1		3Q						
Developmental Tests DT A-2		1-2Q						
AAG Configuration Review			3Q					
EMALS LLR CDR		1Q						
EMALS SYSTEM CDR		4Q						
Developmental Tests DT-B1		4Q	1-4Q	1-4Q				
Operational Tests OT-B2			1-4Q	1Q				
EMALS TRR 1(HALT/HCT)			3Q					
CVN 21 DAB PR			2-3Q			2Q		
AAG TRR 1 (IT)			4Q					
CVN 78 Construction Contract Award			3Q					
CVN 78 SCN Full Funding			1Q					
Developmental Tests DT-B2				4Q	1-4Q	1-3Q		
Operational Tests OT-B3					1-4Q	1Q		
EMALS TRR 2 (DT/OA)				1Q				
EMALS LRIP				4Q				
AAG TRR 2 (IT)				4Q				
Developmental Tests DT-B3						4Q	1-4Q	1-4Q
Operational Tests OT-B4							1-4Q	1Q
Operational Test Readiness Reviews			2Q		1Q		1Q	
Operational Assessments		1-2Q		2-3Q		2-3Q		2-3Q
CVN 79 IPPD Contract Award		1Q						
CVN 79 CP Contract Award				1Q				
AAG MS C / LRIP					3Q			
CVN 80 IPPD Contract Award						1Q		
CVN 79 Construction Contract Award							1Q	
CVN 79 SCN Full Funding							1Q	
CVN 80 CP Contract Award								1Q

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 4008/CVN 78 Total Ship Integration		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Project Cost	21.446	6.743	0.000	0.000	0.000	0.000	0.000	
RDT&E Articles Qty	0	0	0	0	0	0	0	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project encompasses CVN 78 Total Ship Integration efforts. The traditional distinct phasing of the design process for aircraft carriers has been replaced with a continuous concurrent engineering regime incorporating the methodology, measurement, and management elements of the Navy's Integrated Product and Process Development (IPPD) process, extending it beyond contract award. The CVN 78 total ship integration effort will be managed within a technology change management process at contract award to allow further system development. This will ensure that the latest technologies are properly incorporated during the 8 year construction period for an aircraft carrier, without costly contract changes. The IPPD process serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, aviation programs, and suppliers. This project also encompasses those tasks required to develop the contract data package necessary to support CVN 78 procurement, including, but not limited to engineering support, programmatic and program support, logistics support, modeling and simulation, manpower and program related studies, and design support systems, such as the Integrated Digital Environment (IDE). The CVN 21 class design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.

CVN 78 Total Ship Integration, the integration of major systems into ship design, includes redesign and rearrangement of ship components; redesign of hull, mechanical and electrical (HM&E) and auxiliary systems (air-conditioning and ventilation, power distribution and generation, airborne noise management, reduction of steam, environmental safety and health (ESH) and interface control; redesign of water production and tankage; electric loads analysis; redesign of power distribution; analysis and redesign of structure; analysis, tracking and management of changes in weight distribution and stability; analysis and redesign of survivability systems, and analysis and design of all associated ship hull, mechanical, electrical, propulsion, combat/warfare system, survivability and other related components.

CLASSIFICATION:	UNCLASSIFIED								
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE February 2008						
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 4008/CVN 78 Total Ship Integration							
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
	FY 2007	FY 2008	FY 2009						
Accomplishments/Effort/Subtotal Cost	21.446	6.743	0.000						
RDT&E Articles Quantity	0	0	0						
<p>(U) FY07: Continue to resolve CVN 78 whole ship design issues related to aviation systems, combat and integrated warfare systems, auxiliary systems, and HM&E systems. Provide logistics support and program support leading up to the FY08 Construction Contract Award.</p> <p>(U) FY08: Continue to resolve CVN 78 whole ship design issues related to aviation systems, combat and integrated warfare systems, auxiliary systems, and HM&E systems. Provide logistics support and program support for the FY08 Construction Contract Award. Closeout the construction preparation contract component development process and continue remaining component development under the CVN-78 construction contract.</p>									
C. OTHER PROGRAM FUNDING SUMMARY:									
*Note: Only a portion of the funding in PE 0603570N is included in the CVN 78 Class Program.									
Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
BLI 200100 Carrier Replacement Program	1,106.950	3,145.026	3,926.439	1,494.646	1,144.373	2,513.230	3,171.707	Cont.	Cont.
PE 0603512N Carrier System Development	149.866	86.544	120.511	72.135	44.260	44.097	46.185	Cont.	Cont.
PE 0603570N Adv. Nuclear Power Systems	173.988	165.140	158.270	137.843	123.475	123.265	121.179	Cont.	Cont.
D. ACQUISITION STRATEGY:									
<p>The CVN 78 will be the first ship of the CVN 78 Class of aircraft carriers designed to replace USS Enterprise and the ships of the Nimitz Class. The CVN 78 will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system, advanced arresting gear system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the Nimitz Class. Additionally, the following warfighting benefits will be realized: increased sortie generation rate, improved ship self defense capability, increased launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.</p>									
E. MAJOR PERFORMERS:									
Northrop Grumman Newport News, Newport News, VA, Design/Component Development/Construction									
Naval Surface Warfare Center, Carderock, MD, Technology Design & Development									
Naval Surface Warfare Center, Dahlgren, Virginia, Technology Design & Development									

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE February 2008
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 9999/Congressional Add		
B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
		FY 2007	FY 2008	FY 2009
9578C Integrated Modernization Environment		1.407	0.000	0.000
RDT&E Articles Quantity		0	0	0
This project will develop an NMCI compatible Integrated Modernizaion Environment (IME) with a real time information sharing capability to improve the ability to manage program information and facilitate collaboration engineering. Post implementation planning efforts in developing future system upgrade and maintenance requirements after completion of the initial phase will also be completed. This continues development of the web-based IME initiated in Project 9578 in FY05.				
		FY 2007	FY 2008	FY 2009
Automated Fiber Optic Manufacturing Initiative		0.000	0.993	0.000
RDT&E Articles Quantity		0	0	0