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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	847.298	174.375	40.016	49.712	-	49.712	40.880	45.950	47.121	36.013	Continuing	Continuing
1803: Ship Contract Design	110.258	12.050	2.639	8.322	-	8.322	5.216	6.436	3.259	3.325	Continuing	Continuing
2465: LHA(R) FLT Design and Total Ship Integration	208.341	28.757	10.561	9.520	-	9.520	3.924	7.507	14.471	5.068	Continuing	Continuing
3108: CVN 80 Total Ship Integration	0.000	-	-	7.960	-	7.960	8.759	9.265	8.674	6.477	Continuing	Continuing
3133: Ship to Shore Connectors Contract Design	95.681	0.819	-	-	-	-	-	-	-	-	-	96.500
3137: SSC Construction	236.172	67.532	-	-	-	-	-	-	-	-	-	303.704
3179: CVN-79 Total Ship Integration	142.165	11.607	15.441	14.979	-	14.979	17.347	17.029	14.880	15.188	Continuing	Continuing
3369: Hybrid Electric Drive	0.000	-	7.949	4.222	-	4.222	1.689	1.712	1.746	1.780	Continuing	Continuing
4007: CVN 21 LFT&E	54.681	3.610	3.426	4.709	-	4.709	3.945	4.001	4.091	4.175	Continuing	Continuing
9999: Congressional Adds	0.000	50.000	-	-	-	-	-	-	-	-	-	50.000
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 333, 303, 223												
A. Mission Description and Budget Item Justification												
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 (LFT&E) 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 package 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.												

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>
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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.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	187.421	48.470	40.275	-	40.275
Current President's Budget	174.375	40.016	49.712	-	49.712
Total Adjustments	-13.046	-8.454	9.437	-	9.437
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-8.454			
• Reprogrammings	8.500	-			
• SBIR/STTR Transfer	-5.216	-			
• Program Adjustments	-	-	9.742	-	9.742
• Rate/Misc Adjustments	-	-	-0.305	-	-0.305
• Congressional Rescission Adjustments	-16.330	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

 Congressional Add: *LHA(R) FLT Design and Total Ship Integration*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

FY 2014	FY 2015
50.000	-
50.000	-
50.000	-

Change Summary Explanation

Cost/Funding:

Reduced project 3369 funding to properly phase requirements with planned transition to procurement.

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Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	PE 0604567N / Ship Contract Design/ Live Fire T&E	
<p>Added funding to projects 2465 and 3108 to begin integration efforts for the Enterprise Air Search Radar (for Ford-class Carriers, the replacement for Dual Band Radar) which will be installed on CVN 79, CVN 80, and LHA 8.</p> <p>Added funding to project 1803 for Task Force Cyber Awareness boundary defense and AFSB dynamic interface testing.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 1803 / Ship Contract Design			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1803: Ship Contract Design	110.258	12.050	2.639	8.322	-	8.322	5.216	6.436	3.259	3.325	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

DDG Modernization:

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 planning yard to make a sound estimate of cost and schedule. It also serves as the technical definition from which the planning yard develops the detailed design and testing package required to build and test the ship. 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.

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 supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to ship alterations. This project also supports ship survivability studies, superstructure integrity analysis, developmental and operational testing, gun weapon system software integration and next generation Machinery Control System (MCS) software integration.

DON Energy Initiative - Hybrid Electric Drive:

This project includes an increment for the DON Energy Initiative related to the DDG 51 Hybrid Electric Drive to reduce DDG 51 Class ship energy consumption and increase mission effectiveness through longer time on station. This project supports propulsion at low ship speeds without the need for LM 2500 main engines. Fuel savings from the Hybrid Electric Drive system will be achieved by utilizing fewer gas turbines for propulsion and ship service power generation while also loading gas turbines generators at a more efficient operating load. Provides critical foundation for SECNAV and CNO objectives to achieve greater Navy-wide energy security. Beginning in FY 2015, Hybrid Electric Drive moves to project 3369 in this program element.

Afloat Forward Staging Base (AFSB):

Funds are for Dynamic Interface Testing for various airframes (MQ-8C, CH-47, V-22, AH-6, MH-60) on the Mobile Landing Platform Afloat Forward Staging Base (MLP AFSB) as part of the Special Operations Forces (SOF) Backfit.

TFCA - NAVSEA Boundary Defense Capability:

Computer security upgrades and mitigation for operating machinery, machinery controllers, and machinery control systems.

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E		Project (Number/Name) 1803 / Ship Contract Design		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Ship Contract Design		3.550	2.639	2.572	-	2.572
Articles:		-	-	-	-	-
FY 2014 Accomplishments: For DDGs, specific efforts include, but are not limited to Engineering Analysis, developmental and operational test events and planning, feasibility studies, structural analysis for hull integrity, and topside analysis related to the next generation Advanced Capability Build and next generation MCS software integration. CG Class specific efforts include aluminum cracking studies, superstructure repair planning, sustainment studies, extended service life studies, and new alteration development to ensure CGs are able to reach expected service life. 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 supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to ship alterations.						
FY 2015 Plans: For DDGs, specific efforts include, but are not limited to Engineering Analysis, feasibility studies, structural analysis for hull integrity, and topside analysis related to the next generation MCS software integration and GEDMS . CG Class specific efforts include, but are not limited to; aluminum cracking studies and superstructure repair planning to ensure CGs are able to reach expected service life and developmental and operational test events related to Baseline 9. 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						

UNCLASSIFIED

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E		Project (Number/Name) 1803 / Ship Contract Design		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Specifications into performance-based criteria, which supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to ship alterations. FY 2016 Base Plans: For DDGs, specific efforts include, but are not limited to Engineering Analysis, feasibility studies, structural analysis for hull integrity, and information assurance requirements related to the next generation MCS software integration. CG Class specific efforts include, but are not limited to, aluminum cracking studies, superstructure repair planning, sustainment studies, extended service life studies, and new alteration development to ensure CGs are able to reach expected service life as well as information assurance requirements related to the Integrated Ship Control system. 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 supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to ship alterations. FY 2016 OCO Plans: N/A						
Title: Hybrid Electric Drive FY 2014 Accomplishments: Funds issued in support of the Hybrid Electric Drive (HED) Final Acceptance Testing and integration testing of the first Pre-Production Unit and Environmental Qualification Testing of the second Pre-Production Unit. Testing was essential to ensure software integration between HED and the DDG-51 propulsion plant, as well as to confirm new ship systems meet shock and vibration standards prior to installation. FY 2015 Plans: N/A FY 2016 Base Plans:		8.500 Articles: -	- -	- -	- -	- -

UNCLASSIFIED

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E		Project (Number/Name) 1803 / Ship Contract Design		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
FY 2016 OCO Plans: N/A						
Title: MLP AFSB		-	-	3.750	-	3.750
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A						
FY 2015 Plans: N/A						
FY 2016 Base Plans: Dynamic Interface Testing for MLP AFSB 3 SOF Equipment (MH-60, AH-6 and CH-47), Dynamic Interface Testing/AVCERT (for CV22 and MQ-8C) and SESEF/EMC Testing.						
FY 2016 OCO Plans: N/A						
Title: Boundary Defense Capability		-	-	2.000	-	2.000
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A						
FY 2015 Plans: N/A						
FY 2016 Base Plans: Begin efforts to implement external boundary cyber defense capability.						
FY 2016 OCO Plans: N/A						
Accomplishments/Planned Programs Subtotals		12.050	2.639	8.322	-	8.322

UNCLASSIFIED

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 0900: DDG Modernization	285.994	324.219	364.157	-	364.157	403.782	570.886	507.745	521.562	Continuing	Continuing
• OPN 0960: CG Modernization	10.539	-	-	-	-	84.251	108.996	103.036	105.183	-	1,716.021
• WPN 4223: CG Modernization	-	-	-	-	-	19.365	19.713	-	-	-	188.616
• OPN 0140: Hybrid Electric Drive	-	12.638	32.906	-	32.906	40.494	41.427	42.402	43.256	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
A full and open competition with a Fixed Price Incentive Fee Contract awarded for the development, qualification, and delivery of the Engineering Development Models (EDM) Hybrid Electric Drive (HED) and the initial HED production shipsets for the DDG 51 Fleet modernization Program.											
E. Performance Metrics											
CG:											
Aluminum sensitization study to determine the lifetime until sensitization for aluminum alloys and stress and buckling analysis of the CG 47 Class ship structure, and develop proposed fatigue fixes in the high stress areas to produce a technical report with modifications or improvements to the ship that may be necessary to preclude cracking in the areas of concern. Evaluation of composite patch and development of composite patch installation procedures as a method for repairing cracks. Development of ultrasonic impact treatment guidance as a method for repairing cracks. Evaluation of different coating that can prevent cracking and different aluminum alloys that are sensitization resistant. Additionally, review and track distributed services margins, predict future system loads, develop technical reports and make recommendation to ensure reaching hull service life.											
DDG Modernization:											
Efforts for DDG Mod include design and development for next generation MCS software integration.											
Hybrid Electric Drive (HED) DON Energy Initiative:											
Successful completion of Engineering Development Model (EDM) and complete fielding of First Article (FA) including contract award, design, manufacturing, and delivery. Successful completion of Factory Acceptance Test (FAT) and performance testing in Land Based Engineering Site (LBES). Commencement, completion, delivery and installation of Low Rate Initial Production (LRIP) units. Achieve fuel efficiency and increase on-station time.											
Afloat Forward Staging Base (AFSB):											
Successful completion of Dynamic Interface Testing.											
Task Force Cyber Awareness (TFCA):											
NAVSEA Boundary Defense Capability.											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 1803 / Ship Contract Design					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CG Mod Electronics Systems Eng	C/CPAF	Lockheed : Martin, Moorestown, NJ	17.413	-		-		-		-		-	Continuing	Continuing	Continuing
DON Energy Initiative - OEM	C/FPIF	L-3 Maritime Systems : Leesburg, VA	34.857	-		-		-		-		-	-	34.857	-
DON Energy Initiative	WR	NSWC/SSES : Philadelphia, PA	3.629	-		-		-		-		-	-	3.629	-
Engineering Development and Design	Various	COTF/NAVAIR/NSWCCD/NSWCDD/NSWCPC/NSWCPHD/NSWCSSSES : DC/MD/PA/CA	1.085	-		-		-		-		-	-	1.085	-
Preliminary and Contract Design	C/FPIF	NASSCO : San Diego, CA	6.500	-		-		-		-		-	-	6.500	-
Hybrid Electric Drive	C/CPIF	L-3 Maritime Systems : Leesburg, VA	6.911	-		-		-		-		-	-	6.911	-
Hybrid Electric Drive	C/CPAF	Rolls Royce : Walpole, MA	0.100	-		-		-		-		-	-	0.100	-
Hybrid Electric Drive	C/CR	General Atomics : San Diego, CA	0.040	-		-		-		-		-	-	0.040	-
Hybrid Electric Drive	C/CPAF	Herren Engineering : Alexandria, VA	0.600	-		-		-		-		-	-	0.600	-
Hybrid Electric Drive	C/CPAF	Syntek : Arlington, VA	0.099	-		-		-		-		-	-	0.099	-
Hybrid Electric Drive	WR	NSWC/SSES : Philadelphia, PA	0.750	-		-		-		-		-	-	0.750	-
Hybrid Electric Drive	TBD	Not Specified : Not Specified	0.000	8.500	Mar 2015	-		-		-		-	-	8.500	-
Subtotal			71.984	8.500		-		-		-		-	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 1803 / Ship Contract Design					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
Funds issued in support of the Hybrid Electric Drive (HED) Final Acceptance Testing and integration testing of the first Pre-Production Unit and Environmental Qualification Testing of the second Pre-Production Unit. Testing was essential to ensure software integration between HED and the DDG-51 propulsion plant, as well as to confirm new ship systems meet shock and vibration standards prior to installation.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DDG/CGM Program / Engineering Spt	WR	NSWC/DD : Dahlgren, VA	4.376	-		-		-		-		-	Continuing	Continuing	Continuing
DDGM Program/ Engineering Spt	Various	SUPSHIP/BATH : Bath, ME	2.011	1.320	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPAF	CSC/BAE : Hampton, VA	4.713	-		-		-		-		-	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	WR	SPAWARSSYSCEN : Charleston, SC	1.397	-		-		-		-		-	Continuing	Continuing	Continuing
CGM Program / Engineering Spt	WR	NRL : Washington, DC	0.617	-		-		-		-		-	Continuing	Continuing	Continuing
CGM Program / Engineering Spt	C/CPAF	JJMA/ALION : Washington, DC	2.947	-		-		-		-		-	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPAF	Lockheed Martin : Moorestown, NJ	0.000	-		-		-		-		-	-	-	-
DDG/CGM Program / Engineering Spt	WR	NSWC/PHD : Port Hueneme, CA	2.889	-		-		-		-		-	Continuing	Continuing	Continuing
Integrated Logistics Support	C/CPFF	CSC : Washington DC	0.085	-		-		-		-		-	-	0.085	-
CGM/DDG Program / Engineering Spt	WR	COMOPTEVFOR : Norfolk, VA	0.420	-		-		-		-		-	Continuing	Continuing	Continuing
DDGM/HED Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	4.900	-		-		-		-		-	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 1803 / Ship Contract Design					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DDGM Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	0.230	0.885	Apr 2014	2.389	Dec 2014	2.420	Dec 2015	-		2.420	-	5.924	-
HED Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	0.500	-		-		-		-		-	-	0.500	-
HED	C/CPAF	L-3 Maritime Systems : Leesburg, VA	1.048	-		-		-		-		-	Continuing	Continuing	Continuing
CG Program / Engineering Spt	WR	NSWC/BETHESDA : Bethesda, MD	8.256	1.000	Apr 2014	0.050	Dec 2014	0.051	Dec 2015	-		0.051	Continuing	Continuing	Continuing
CG Program / Engineering Spt	Various	SUPSHIP/ PASCAGOULA : Pascagoula, MS	3.885	0.345	Apr 2014	0.200	Dec 2014	0.101	Dec 2015	-		0.101	Continuing	Continuing	Continuing
Afloat Forward Staging Base	Various	TBD : TBD	0.000	-		-		3.750	Jan 2016	-		3.750	-	3.750	-
NAVSEA Boundary Defense Capability	Various	TBD : TBD	0.000	-		-		2.000	Dec 2015	-		2.000	-	2.000	-
Subtotal			38.274	3.550		2.639		8.322		-		8.322	-	-	-
Remarks AFSB funding is required Jan 2016 to support Dynamic interface testing and the MH-60 test.															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			110.258	12.050		2.639		8.322		-		8.322	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy						Date: February 2015					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E					
						Project (Number/Name) 1803 / Ship Contract Design					

Fiscal Year	2014				2015				2016				2017				2018				2019				2020			
Acquisition Milestones	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
CG Baseline 4 Mod Design																												
CG Class Designs																												
DDG Technical Insertion 12 Mod Design																												
DDG FLT IIA Mod Design																												
CG Delivers (CG 70,72,71,67)																												
DDG Deliveries (DDG 51,69,57,61,80,61,83)																												
DDG Class Design																												
AFSB Dynamic Interface Testing																												
Boundary Defense Capability																												
Production Milestones																												
CG Deliveries																												
Production Milestones																												
DDG Deliveries																												

CG Baseline 4 Mod Design
DDG Technical Insertion 12 Mod Design

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 1803 / <i>Ship Contract Design</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 1803</i>				
CGM Baseline 4 Mod Design	1	2016	4	2020
CG Class Design	1	2014	4	2020
DDG Technical Insertion 12 Mod Design	1	2014	4	2014
DDG FLT IIA Mod Design	1	2014	2	2018
CG Deliveries (CG 70,71,67,72)	1	2014	4	2020
DDGM Deliveries (DDG 51,69,57,81,83,61,80)	1	2014	4	2019
DDG Class Design	1	2014	4	2020
AFSB Dynamic Interface Testing	2	2016	2	2017
Boundary Defense Capability	1	2016	4	2018

UNCLASSIFIED

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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2465: LHA(R) FLT Design and Total Ship Integration	208.341	28.757	10.561	9.520	-	9.520	3.924	7.507	14.471	5.068	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 333												
A. Mission Description and Budget Item Justification												
This project provides the contract design, development and testing efforts for the Amphibious Assault Ship Replacement Program LHA(R). The LHA (R) is a ship construction program designed to: (1) provide a functional replacement for the Amphibious Assault Ships which begin reaching the end of their extended service lives between FY11 and FY15 (2) be a key platform in the Amphibious Readiness Group (ARG) of the future and (3) 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, inter-agency, and multi-national maritime expeditionary forces. Additionally, LHA(R) 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 (MV-22) supported by Joint Strike Fighters (F-35B).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Title: LHA (R) FLT 0 Design and Total Ship Integration - LHA 6							10.122	4.796	3.098	-	3.098	
Articles:							-	-	-	-	-	
FY 2014 Accomplishments:												
LHA 6 Completed Development Testing (DT-B1/B2).												
LHA 6 Initiated Development Testing (DT-B3).												
LHA 6 Continued Test and Evaluation Master Plan (TEMP) Rev B.												
LHA 6 Continued Operational Test and Evaluation (OT&E).												
LHA 6 Continued evaluating the interoperability data supporting Key Performance Parameters (KPP).												
LHA 6 Continued Vulnerability Assessment Report (VAR).												
LHA 6 Continued Total Ship Survivability Trial (TSST) preparations.												
LHA 6 Continued LHA Class Reliability Maintainability and Availability (RMA).												
FY 2015 Plans:												
LHA 6 Continue Development Testing (DT-B3).												
LHA 6 Complete Test and Evaluation Master Plan (TEMP) Rev B.												
LHA 6 Continue Operational Test and Evaluation (OT&E).												
LHA 6 Continue evaluating the interoperability data supporting Key Performance Parameters (KPP).												
LHA 6 Continue Vulnerability Assessment Report (VAR).												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
LHA 6 Continue Total Ship Survivability Trial (TSST) preparations. LHA 6 Continue LHA Class Reliability Maintainability and Availability (RMA). FY 2016 Base Plans: LHA 6 Complete Development Testing (DT-B3). LHA 6 Complete Operational Test and Evaluation (OT&E). LHA 6 Continue evaluating the interoperability data supporting Key Performance Parameters (KPP). LHA 6 Continue Vulnerability Assessment Report (VAR). LHA 6 Complete Total Ship Survivability Trial (TSST) preparations. LHA 6 Continue LHA Class Reliability Maintainability and Availability (RMA). FY 2016 OCO Plans: N/A						
Title: LHA (R) FLT 1 Design and Total Ship Integration - LHA 8 <div>Articles:</div>		18.635	5.765	6.422	-	6.422
		-	-	-	-	-
FY 2014 Accomplishments: LHA 8 Completed Capability Development Document (CDD) and Concepts of Operations (CONOPS). LHA 8 Continued Contract Design. LHA 8 Continued Early Industry Involvement. LHA 8 Continued development of Milestone Documents. LHA 8 Continued Operational Assessment efforts. LHA 8 Continued Operational Test and Evaluation (OT&E) preparations. LHA 8 Continued Test and Evaluation Master Plan (TEMP) Rev B. LHA 8 Continued Vulnerability Assessment Report (VAR). FY 2015 Plans: LHA 8 Continue Milestone Documentation, Gate Reviews and Defense Acquisition Board (DAB) Program Reviews. LHA 8 Complete Early Industry Involvement. LHA 8 Complete Operational Assessment efforts. LHA 8 Continue Operational Test and Evaluation (OT&E) preparations. LHA 8 Complete Test and Evaluation Master Plan (TEMP) Rev B. LHA 8 Continue Vulnerability Assessment Report (VAR). LHA 8 Complete Contract Design.						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>		Project (Number/Name) 2465 / <i>LHA(R) FLT Design and Total Ship Integration</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
LHA 8 Issue Advance Procurement RFP. LHA 8 Award Advance Procurement Contract. <i>FY 2016 Base Plans:</i> LHA 8 Complete Milestone Documentation, Gate Reviews and Defense Acquisition Board (DAB) Program Reviews. LHA 8 Continue Operational Test and Evaluation (OT&E) preparations. LHA 8 Continue Vulnerability Assessment Report (VAR). LHA 8 Begin Enterprise Air Search Radar (EASR) integration efforts. <i>FY 2016 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	28.757	10.561	9.520	-	9.520

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SCN/3041: <i>LHA (R) Ships</i>	37.700	29.093	277.543	-	277.543	1,525.817	2,085.216	-	-	-	10,334.569
• RDT&E/2465C: <i>LHA (R) FLT Design/Total Ship Integration</i>	50.000	-	-	-	-	-	-	-	-	-	50.000
<i>(Cong. Add LHA 8 Design Efforts)</i>											

Remarks

D. Acquisition Strategy

Acquisition strategy signed February 7, 2005 approved strategy for sole source to Northrop Grumman Shipbuilding (NGSB) (Now Huntington Ingalls Industries, Inc.) to incorporate previous LHD engineering, design and producibility lessons-learned into LHA(R). Advanced Procurement (AP) 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) contract on 1 June 2007. The AP contract was subsumed by the FPI DD&C contract.

LHA 7 DD&C contract awarded on May 31, 2012.

LHA 8 is the lead ship in FLT 1, which reincorporates the well deck. AP starts in 2QTR FY15 to support FY17 DD&C award.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 2465 / <i>LHA(R) FLT Design and Total Ship Integration</i>

E. Performance Metrics

Successfully achieve Initial Operational Capability, successfully complete Operational Test and Milestone Reviews.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Design	WR	NSWC : Various	97.925	-		-		-		-		-	-	97.925	-
Ship Design	C/CPFF	HII : Pascagoula, MS	5.019	-		-		-		-		-	Continuing	Continuing	Continuing
Ship Design	C/CPFF	Various : Various	23.884	14.420	Mar 2014	5.765	Dec 2014	5.548	Dec 2015	-		5.548	5.007	54.624	-
Special Studies	WR	NSWC : Panama City, FL	4.800	-		-		-		-		-	-	4.800	-
Subtotal			131.628	14.420		5.765		5.548		-		5.548	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	JITC : Fort Huachuca, AZ	3.924	0.307	Mar 2014	0.097	Dec 2014	0.081	Dec 2015	-		0.081	0.200	4.609	-
Operational Test & Evaluation	WR	OPTEVFOR/ MCOTEA : Norfolk, VA/Quantico, VA	9.845	5.659	May 2014	2.005	Dec 2014	1.668	Dec 2015	-		1.668	7.296	26.473	-
Live Fire Test & Evaluation	WR	NSWC : Carderock, MD	50.417	6.080	Mar 2014	1.509	Dec 2014	1.237	Dec 2015	-		1.237	4.038	63.281	-
Subtotal			64.186	12.046		3.611		2.986		-		2.986	11.534	94.363	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPFF	Various : Various	11.984	2.191	Feb 2014	1.135	Dec 2014	0.936	Dec 2015	-		0.936	1.000	17.246	-
Travel	Various	Navsea Travel : Washington, DC	0.532	0.100	Jun 2014	0.050	Jun 2015	0.050	Dec 2015	-		0.050	0.090	0.822	-
Defense Acquisition Workforce	Various	Various : Various	0.011	-		-		-		-		-	-	0.011	-
Subtotal			12.527	2.291		1.185		0.986		-		0.986	1.090	18.079	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy										Date: February 2015			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E					Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	208.341	28.757		10.561		9.520		-		9.520	-	-	-
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>		Project (Number/Name) 2465 / <i>LHA(R) FLT Design and Total Ship Integration</i>	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Proj 2465																												
LHA 6 Developmental Testing																												
LHA 6 Operational Testing																												
LHA 6 Vulnerability Assessment Report (VAR)																												
LHA 6 JSF FOT&E																												
LHA 8 Capability Development Document (CDD) Update																												
LHA 8 Contract Design																												
LHA 8 Early Industry Involvement																												
LHA 8 Gate Reviews																												
LHA 8 Operational Assessment Efforts																												
LHA 8 Award Advance Procurement Contract																												
LHA 8 Enterprise Air Search Radar (EASR) Integration																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 2465 / <i>LHA(R) FLT Design and Total Ship Integration</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2465				
LHA 6 Developmental Testing	1	2014	1	2016
LHA 6 Operational Testing	1	2014	4	2016
LHA 6 Vulnerability Assessment Report (VAR)	1	2014	2	2017
LHA 6 JSF FOT&E	3	2019	3	2019
LHA 8 Capability Development Document (CDD) Update	1	2014	2	2014
LHA 8 Contract Design	1	2014	4	2015
LHA 8 Early Industry Involvement	1	2014	4	2015
LHA 8 Gate Reviews	1	2014	3	2016
LHA 8 Operational Assessment Efforts	1	2014	4	2015
LHA 8 Award Advance Procurement Contract	2	2015	2	2015
LHA 8 Enterprise Air Search Radar (EASR) Integration	1	2016	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3108 / CVN 80 Total Ship Integration			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3108: CVN 80 Total Ship Integration	-	-	-	7.960	-	7.960	8.759	9.265	8.674	6.477	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Development and related testing of CVN78 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 80. 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 or CVN 79. All systems developed in this project have the potential to support emerging requirements and other promising system 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 support CVN 80 procurement, including, but not limited to engineering support, programmatic and program support, modeling and simulation, manpower and program related studies, and design support systems, such as the Integrated Digital Environment.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: New Accomplishment/Planned Program Entry	-	-	7.960	-	7.960
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: Conduct/prepare risk reduction studies/reports, to include development of a risk/opportunity database to support future decision-making. Conduct technology assessment studies, to include review of proposed radar engineering changes and platform support to IWS 2.0 during the engineering and manufacturing development and production phases. Develop radar specification traceability matrix to the CVN ORD. Develop and maintain new CVN Warfare System architecture. Conduct ship integration studies, to include on-board and off-board Electromagnetic Interference / Control (EMI/EMC) studies due to introduction of the new radar sensor; power					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3108 / CVN 80 Total Ship Integration					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
interface trade studies based upon radar prime power requirement; and trade studies to analyze platform power against transformer design and platform power against cost of ship modification. Analyze/perform integrated topside design due to the new radar sensor. Conduct system integration studies related to the TEMP: platform impacts & updates to TEMP; cybersecurity analysis; Information Support Plan updates supporting Net Ready KPP. Conduct Reliability, Maintainability & Availability and integrated logistics support studies, to include trade studies and identification of investment opportunities/requirements. Prepare/update acquisition support documents, cost estimates and the request for proposal.													
FY 2016 OCO Plans: N/A													
Accomplishments/Planned Programs Subtotals									-	-	7.960	-	7.960
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost		
• SCN / 2001: Carrier Replacement Program	917.553	1,219.425	2,509.359	-	2,509.359	2,955.056	3,530.762	2,075.957	873.334	Continuing	Continuing		
• RDTEN / 0603512N: Project Units 2208, 4004	72.734	-	-	-	-	-	-	-	-	-	1,709.131		
• RDTEN / 0603570N: Propulsion Plant Development (PU 2692)	57.499	60.459	-	-	-	-	-	-	-	-	1,526.813		
• SCN / 5300: Completion of Prior Year Shipbuilding Programs	588.100	663.000	123.760	-	123.760	-	-	-	-	-	1,374.860		
• RDTEN / 0604112N: Project Units 2208, 4004	-	43.613	48.105	-	48.105	45.386	33.890	25.418	25.951	Continuing	Continuing		
• OMN / 1B2B: CVN 78 Ford Class Training (12BJ0)	-	4.907	38.389	-	38.389	35.600	3.878	3.880	3.956	Continuing	Continuing		
• RDTEN / 0604501N: Project Unit 3236 Advanced Radar Technology	-	-	23.301	-	23.301	73.000	69.700	28.700	-	-	194.701		
Remarks													

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3108 / CVN 80 Total Ship Integration
D. Acquisition Strategy <p>The CVN 80 is the third ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class Carriers. The CVN 80 is a modified repeat of the CVN 78, which features a new nuclear propulsion and electrical generation/distribution system, electromagnetic aircraft launching system, advanced arresting gear system, 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 war-fighting 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>CVN 80 will use late integration of Government-Furnished Equipment to provide the latest combat system and C4I suite applications within the planned system baseline. CVN 80 will improve upon processes used on CVN 78 to gain efficiencies during the CVN 80 Construction Preparation and Construction periods.</p>		
E. Performance Metrics <p>Successfully develop risk/opportunity database. Complete draft radar specification traceability matrix to the CVN ORD. Draft cybersecurity analysis. Develop radar-specific acquisition documentation, exhibits, and artifacts.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E						Project (Number/Name) 3108 / CVN 80 Total Ship Integration			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Design & Development	C/CPAF	HII : VA	0.000	-		-		0.398	Dec 2015	-		0.398	Continuing	Continuing	Continuing
Advanced Design & Development	C/CPAF	RAYTHEON : VA	0.000	-		-		3.822	Dec 2015	-		3.822	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC DAHLGREN : VA	0.000	-		-		2.889	Nov 2015	-		2.889	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC CARDEROCK : MD	0.000	-		-		0.265	Nov 2015	-		0.265	-	0.265	-
Advanced Design & Development	Various	MISCELLANEOUS : VARIOUS	0.000	-		-		0.586	Dec 2015	-		0.586	-	0.586	-
Subtotal			0.000	-		-		7.960		-		7.960	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	-	7.960	-	7.960	-	-	-

Remarks

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PE 0604567N: *Ship Contract Design/ Live Fire T&E*
Navy

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 3108 / <i>CVN 80 Total Ship Integration</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3108				
CVN 79 DAB PR	2	2015	2	2015
CVN 80 DAB PR	4	2017	4	2017
Milestone C	2	2015	2	2015
Propulsion Plant	1	2014	4	2015
EMALS SDD Complete	3	2015	3	2015
DT/IT -2- Developmental Test / Integrated Test Phase 2	1	2014	3	2014
DT/IT -3- Developmental Test / Integrated Test Phase 3	3	2014	3	2015
DT/IT -4- Developmental Test / Integrated Test Phase 4	3	2015	4	2016
DT/IT -5- Developmental Test / Integrated Test Phase 5	4	2016	3	2018
Initial Operational Test & Evaluation	4	2017	1	2020
OT -C1 - Initial Operational Test & Evaluation - Phase C1	4	2017	4	2018
OT -C2 - Initial Operational Test & Evaluation - Phase C2	4	2018	1	2020
FOT&E - Follow-On Test & Evaluation	2	2020	4	2020
CVN 78 Ship Launch	1	2014	1	2014
CVN 78 Ship Delivery	2	2016	2	2016
CVN 78 Initial Operational Capability (IOC)	2	2017	2	2017
CVN 79 Construction Contract Award	3	2015	3	2015
CVN 80 GFE LLTM Contract Award	1	2016	1	2016
CVN 80 Construction Contract Award	1	2018	1	2018
CVN 79 SCN Full Funding	1	2014	4	2018
CVN 80 SCN Full Funding	1	2018	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3133: Ship to Shore Connectors Contract Design	95.681	0.819	-	-	-	-	-	-	-	-	-	96.500
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 303												
A. Mission Description and Budget Item Justification <p>Note: Funding for this project unit effort is realigned to PE 0605220N in FY15 and out.</p> <p>Ship to Shore Connector (SSC) - This project provides the Preliminary and Contract design and Class test efforts for the SSC Program. The SSC program provides the capability to rapidly move assault forces with the littoral operational environment to accomplish Unified Command Plan (UCP) missions and ensures the Joint Force Commander's (JFCDR's) ability to conduct amphibious operations and operate over the high water mark, including movement over ice, mud, rivers, swamps and marshes. SSC provides the functional replacement for the LCAC crafts, which begin reaching extended service life in 2015. This project provided for the FY12 and prior tasks that supported the Systems Development and technical data package required for the solicitation for detail design, construction and test of the initial article. For FY13 and beyond, this project will provide for Class Test and Evaluation of components and systems, as well as all programmatic effort and support activities necessary for the development and execution of Class T&E plans and programs. The Test and Training craft (Craft 100) and R&D cost for Craft 101 are funded in RDT&E Project 3137, which realigns from PE 0604567N to PE 0605220N in FY15 and out.</p>												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Title: Ship to Shore Connector (Contract Des)							0.819	-	-	-	-	
Articles:							-	-	-	-	-	
FY 2014 Accomplishments: Commenced Class Test and Evaluation program including Test Planning and Coordination, Interoperability Testing, Vulnerability Assessment Report (VAR), Live Fire Test and Evaluation (LFT&E) Paper Studies, Surrogate tests, TEMP and LFT&E Management plan updates and LFT&E Document Coordination.												
FY 2015 Plans: N/A												
FY 2016 Base Plans: N/A												
FY 2016 OCO Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A												
Accomplishments/Planned Programs Subtotals								0.819	-	-	-	-
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• RD TEN 0604567N: SSC Construction (PRJ 3137)	67.532	-	-	-	-	-	-	-	-	-	303.704	
• SCN 5112: Ship to Shore Connector	-	159.600	255.630	-	255.630	275.581	500.550	560.634	509.943	1,556.612	3,818.550	
• RD TEN 0605220N: Ship to Shore Connector (PRJ 3133/3137)	-	42.778	7.778	-	7.778	7.021	1.068	1.098	1.120	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
The Test and Training craft (Craft 100) and Craft 101 have been executed on contract. Craft 100 will be procured and constructed with RD TEN. Craft 101 was awarded with RD TEN and transferred to SCN for completion. The Detail Design and Construction contract includes options for construction of an additional seven SCN craft, if exercised.												
E. Performance Metrics												
Continue Test and Evaluation Master Plan (TEMP) updates. Continue Developmental Testing Phase B and Operational Testing Phase B.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Design	C/CPFF	CSC : Washington	14.330	-		-		-		-		-	-	14.330	-
Preliminary/Contract Design	Various	Various : Various	31.140	-		-		-		-		-	-	31.140	-
System Engineering	Various	Various : Various	6.241	-		-		-		-		-	-	6.241	-
Subtotal			51.711	-		-		-		-		-	-	51.711	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Support	WR	NSWC PCD : Panama City, FL	4.636	-		-		-		-		-	-	4.636	-
Software Development	Various	Various : Various	2.219	-		-		-		-		-	-	2.219	-
Integrated Logistics Support	WR	NSWC : Various	3.365	-		-		-		-		-	-	3.365	-
Studies & Analyses	TBD	Various : Various	5.711	-		-		-		-		-	-	5.711	-
Subtotal			15.931	-		-		-		-		-	-	15.931	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various : Various	0.427	-		-		-		-		-	-	0.427	-
Operational Test & Evaluation	Various	Various : Various	2.374	0.381	Apr 2014	-		-		-		-	-	2.755	-
Live Fire Test & Evaluation	Various	Various : Various	5.680	0.438	May 2014	-		-		-		-	-	6.118	-
Subtotal			8.481	0.819		-		-		-		-	-	9.300	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design					

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	CSC/Alion : Washington, DC	9.323	-		-		-		-		-	-	9.323	-
Government Engineering Support	WR	NSWC : Various	3.689	-		-		-		-		-	-	3.689	-
Program Management Support	Various	Various : Various	6.120	-		-		-		-		-	-	6.120	-
Travel	Various	NAVSEA Travel : Washington, DC	0.300	-		-		-		-		-	-	0.300	-
Defense Acquisition Workforce	Various	Various : Various	0.126	-		-		-		-		-	-	0.126	-
Subtotal			19.558	-		-		-		-		-	-	19.558	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	95.681	0.819	-	-	-	-	-	96.500	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>			Project (Number/Name) 3133 / <i>Ship to Shore Connectors Contract Design</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Proj 3133																												
Development Test/Operational Test B (DT/OT-B)																												
Capability Development Document (CDD) Revalidation																												
Critical Design Review (CDR)																												
Operational Assessment (OA)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 3133 / <i>Ship to Shore Connectors Contract Design</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3133</i>				
Development Test/Operational Test B (DT/OT-B)	1	2014	2	2015
Capability Development Document (CDD) Revalidation	4	2014	4	2014
Critical Design Review (CDR)	4	2014	4	2014
Operational Assessment (OA)	3	2014	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3137 / SSC Construction			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3137: SSC Construction	236.172	67.532	-	-	-	-	-	-	-	-	-	303.704
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 303												
A. Mission Description and Budget Item Justification												
Note: This project funds the Ship to Shore Connector (SSC) Engineering & Manufacturing Development phase which includes Detail Design and Construction, Product Support, Government Furnished Equipment (GFE), Program support, and Outfitting and Post Delivery. The lead craft will be maintained as a test and training platform throughout its life cycle. The SSC program provides the capability to rapidly move assault forces within the littoral operational environment to accomplish Unified Command Plan (UCP) missions, and ensures the Joint Force Commander's (JFCDR's) ability to conduct amphibious operations and operate over the high water mark, including movement over ice, mud, rivers, swamps and marshes. The SSC program provides the functional replacement for the LCAC craft, which begin reaching extended service life in 2015. Funding for this project unit effort is executed under PE 0605220N in FY15 and out.												
Below end cost for Craft 100 and R&D cost for Craft 101 reflects total program funding in project 3137 between PE 0604567N and PE 0605220N. P.L. 113-235 transfers Craft 101 to SCN 5112 for FY15. The total RDT&E,N funding for craft 101 is \$34.1M (FY 13 and FY 14).												
TEST AND TRAINING CRAFT 100:												
Plans/Basic Construction:												
TOTAL 226.6 (FY16 0.0)												
Change Orders:												
TOTAL 16.2 (FY16 0.0)												
Electronics												
TOTAL 9.6 (FY16 0.2)												
HM&E:												
TOTAL 31.0 (FY16 2.7)												
Other Support:												
TOTAL 30.0 (FY16 1.7)												
Ordnance												
Total 0.05 (FY16 0.0)												
Post Delivery/Outfitting:												
TOTAL 4.0 (FY16 0.0)												
Ship Total:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>				Project (Number/Name) 3137 / <i>SSC Construction</i>			
TOTAL 317.4 (FY16 4.6)											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Title: SSC Construction						67.532	-	-	-	-	-
Articles:						-	-	-	-	-	-
FY 2014 Accomplishments: Commenced Detail Design and Construction planning efforts; continue Test and Training Craft 100 and Craft 101 LLTM procurement and production planning, conducted a Production Readiness Review.											
FY 2015 Plans: N/A											
FY 2016 Base Plans: N/A											
FY 2016 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals						67.532	-	-	-	-	-
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RD TEN 0604567N: SSC Contract Design (PRJ 3133)	0.819	-	-	-	-	-	-	-	-	-	96.500
• SCN 5112: Ship to Shore Connector	-	159.600	255.630	-	255.630	275.581	500.550	560.634	509.943	1,556.612	3,818.550
• RD TEN 0605220N: Ship to Shore Connector (PRJ 3133/3137)	-	42.778	7.778	-	7.778	7.021	1.068	1.098	1.120	Continuing	Continuing
Remarks											
D. Acquisition Strategy The Test and Training craft (Craft 100) and Craft 101 have been executed on contract. Craft 100 will be procured and constructed with RD TEN. Craft 101 was awarded with RD TEN and transferred to SCN for completion. The Detail Design and Construction contract includes options for construction of an additional seven SCN craft, if exercised.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3137 / SSC Construction

E. Performance Metrics

Conduct Production Readiness Review

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3137 / SSC Construction					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Trng Craft Ship Design	C/CPFF	Various : Various	11.653	5.810	Nov 2013	-		-		-		-	-	17.463	-
Test & Trng Craft Detail Design/Construction	C/FPIF	Textron : New Orleans, LA	179.886	30.510	Dec 2013	-		-		-		-	-	210.396	-
Test & Trng Craft Government Furnished Equipment (GFE)	Various	Various : Various	6.747	3.500	Nov 2013	-		-		-		-	-	10.247	-
Test & Trng Craft Change Orders	C/FPIF	Textron : New Orleans, LA	0.655	7.085	Nov 2013	-		-		-		-	-	7.740	-
Craft 101 Ship Design	C/CPFF	Alion : Washington, DC	1.702	-		-		-		-		-	-	1.702	-
Craft 101 LLTM & Construction Planning	C/FPIF	Textron : New Orleans, LA	16.508	10.467	Dec 2013	-		-		-		-	-	26.975	-
Craft 101 Government Furnished Equipment	Various	Various : Various	0.206	1.574	Nov 2013	-		-		-		-	-	1.780	-
Craft 101 Change Orders	C/FPIF	Textron : New Orleans, LA	0.000	0.070	Dec 2013	-		-		-		-	-	0.070	-
Subtotal			217.357	59.016		-		-		-		-	-	276.373	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Trng Craft Studies and Analysis	Various	Various : Various	0.665	1.766	Nov 2013	-		-		-		-	-	2.431	-
Craft 101 Studies and Analysis	Various	Various : Various	0.000	0.506	Nov 2013	-		-		-		-	-	0.506	-
Test & Trng Craft Integrated Logistics Support	WR	NSWC : Various	2.337	-		-		-		-		-	-	2.337	-
Craft 101 Integrated Logistics Support	WR	NSWC : Various	0.000	-	Nov 2013	-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E						Project (Number/Name) 3137 / SSC Construction			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			3.002	2.272		-		-		-		-	-	5.274	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Trng Craft Construction Test Program	Various	Various : Various	0.932	1.336	Nov 2013	-		-		-		-	-	2.268	-
Subtotal			0.932	1.336		-		-		-		-	-	2.268	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Trng Craft Contractor Engineering Support	C/CPFF	CSC/Alion : Washington DC	10.489	3.938	Jun 2014	-		-		-		-	-	14.427	-
Travel	Various	Various : Various	0.166	0.060	Nov 2013	-		-		-		-	-	0.226	-
Test & Trng Craft Government Engineering Support	WR	Various : Various	1.156	0.910	Nov 2013	-		-		-		-	-	2.066	-
Craft 101 Contractor Engineering Services	WR	CSC/Alion : Washington DC	3.070	-	Mar 2014	-		-		-		-	-	3.070	-
Craft 101 Government Engineering Services	WR	Various : Various	0.000	-	Oct 2014	-		-		-		-	-	-	-
Subtotal			14.881	4.908		-		-		-		-	-	19.789	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			236.172	67.532		-		-		-		-	-	303.704	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy							Date: February 2015			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E			Project (Number/Name) 3137 / SSC Construction			
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy										Date: February 2015									
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E					Project (Number/Name) 3137 / SSC Construction									

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Proj 3137																												
Test and Training Craft Detail Design																												
Capability Development Document (CDD) Revalidation																												
Critical Design Review (CDR)																												
Production Readiness Review (PRR)																												
Test and Training Craft Construction (Start Fab)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 3137 / <i>SSC Construction</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3137</i>				
Test and Training Craft Detail Design	1	2014	4	2014
Capability Development Document (CDD) Revalidation	4	2014	4	2014
Critical Design Review (CDR)	4	2014	4	2014
Production Readiness Review (PRR)	4	2014	4	2014
Test and Training Craft Construction (Start Fab)	1	2015	3	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3179 / CVN-79 Total Ship Integration			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3179: CVN-79 Total Ship Integration	142.165	11.607	15.441	14.979	-	14.979	17.347	17.029	14.880	15.188	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 223												
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. In addition, this project focuses on significant procurement and life cycle cost reduction compared to the first ship of the class. Cost reductions are sought, developed and implemented in the areas of design, labor and material.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Title: CVN-79 Total Ship Integration							11.607	15.441	14.979	-	14.979	
Articles:							-	-	-	-	-	
FY 2014 Accomplishments: Conducted an analysis of GFE obsolescence prior to installation on the ship. Other projects included continuation of affordability efforts through analysis of build practices and identification of optimized build strategies based on lessons learned from CVN 78. Continuation of super lift reviews identified further opportunities to move work out of the dry-dock and back onto the platen or component fabrication shops, reducing construction time and cost. Conducted an analysis of warfare system GFE. Projects in this area included the following: GFI review and comment (Schedule A-C input), Aviation LI-ION battery locker requirements analysis and aviation fuels												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3179 / CVN-79 Total Ship Integration	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
operational sequencing system review. Continued efforts to fully integrate all aviation and land combat systems on ship with increased efficiency to support the warfighter. FY 2015 Plans: Continue to identify and implement cost reduction measures. Integrate the unique maintenance, storage and handling requirements to deploy with the F-35C. Assess design, equipment, and system changes between CVN 78 and CVN 79 to identify candidate equipment and / or systems that may require Follow-on Test and Evaluation. Complete the CVN 78 Class shock and vibration testing. Address design and construction issues based on the results of CVN 78 testing. Continue to manage fact-of-life and obsolescence changes on government furnished equipment systems. FY 2016 Base Plans: Continue to identify and implement cost reduction measures in support of CVN 79 and follow-on ship affordability. Assess design and process changes to further address JP-5 CRES piping system integrity. Continue to integrate the unique maintenance, storage and handling requirements to deploy with the F-35C. Continue to address design, equipment, and system changes between CVN 78 and CVN 79 to identify candidate equipment and / or systems that may require Follow-on Test and Evaluation. Continue to address design and construction issues based on the results of CVN 78 testing. Continue to manage fact-of-life and obsolescence changes on government furnished equipment systems. FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	11.607	15.441	14.979	-	14.979

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN / 0605312N: <i>Project Units 2208, 4004</i>	72.734	-	-	-	-	-	-	-	-	-	1,709.131
• RDTEN / 0603570N: <i>Propulsion Plant Development (PU 2692)</i>	57.499	60.459	-	-	-	-	-	-	-	-	1,526.813
• SCN / 2001: <i>Carrier Replacement Program</i>	917.553	1,219.425	2,509.359	-	2,509.359	2,955.056	3,530.762	2,075.957	873.334	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3179 / CVN-79 Total Ship Integration			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SCN / 5300: Completion of Prior Year Shipbuilding Programs	588.100	663.000	123.760	-	123.760	-	-	-	-	-	1,374.860
• RDTEN / 0604112N: Project Units 2208, 4004	-	43.613	48.105	-	48.105	45.386	33.890	25.418	25.951	Continuing	Continuing
• OMN / 1B2B: CVN 78 Ford Class Training (12BJ0)	-	4.907	38.389	-	38.389	35.600	3.878	3.880	3.956	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The CVN 78 is 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 class will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system (EMALS), advanced arresting gear (AAG) 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 war fighting 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.											
E. Performance Metrics											
Successfully complete system development efforts for designated new and modified shipboard system, including developmental test and evaluation documents. Successfully complete design related activities associated with integration of new and modified shipboard systems into the ship, including developmental test and evaluation documentation. Successfully perform system design and analysis studies. Successfully support design integration and analysis. Successfully complete or support feasibility and tradeoff studies on new and modified shipboard systems, technologies, and proposed modifications. Studies shall include requirements and engineering analysis; identification of subsystem, integration, and logistics impacts; cost estimates; analysis of construction schedule impacts; and conduct/ support of shipchecks. Successfully provide Manpower Workload Analysis associated with design and policy activities, and with integration of new and modified system/equipment. Successfully complete the development of multiple Business Case Analyses (BCAs) that demonstrate technology, process, requirements and/or infrastructure improvements that will reduce the man hours (or equivalent material costs) for CVN 79 Construction.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3179 / CVN-79 Total Ship Integration					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Total Ship Integration	C/CPAF	HII : VA	82.729	2.801	Nov 2013	5.411	Nov 2014	5.957	Nov 2015	-		5.957	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC CARDEROCK : MD	10.831	0.711	Nov 2013	0.579	Oct 2014	0.198	Nov 2015	-		0.198	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC DAHLGREN : VA	8.874	1.052	Nov 2013	1.669	Oct 2014	1.614	Oct 2015	-		1.614	Continuing	Continuing	Continuing
Total Ship Integration	WR	NAWCAD PAX RIVER : MD	3.758	1.185	Nov 2013	3.286	Oct 2014	1.885	Oct 2015	-		1.885	Continuing	Continuing	Continuing
Total Ship Integration	WR	SPAWAR : SD	3.593	0.288	Nov 2013	0.320	Oct 2014	0.269	Nov 2015	-		0.269	Continuing	Continuing	Continuing
Total Ship Integration	C/CPFF	NAVSEA SEAPORT : DC	18.778	4.021	Nov 2013	1.448	Dec 2014	2.000	Dec 2015	-		2.000	Continuing	Continuing	Continuing
Total Ship Integration	C/CPAF	RAYTHEON : MA	6.230	1.549	Dec 2013	2.127	Dec 2014	1.556	Dec 2015	-		1.556	Continuing	Continuing	Continuing
Total Ship Integration	WR	SSC CHARLESTON : SC	0.726	-		-		-		-		-	-	0.726	-
Total Ship Integration	C/CPFF	SAIC : VA	1.445	-		0.101	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Subtotal			136.964	11.607		14.941		13.479		-		13.479	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPAF	HII : VA	0.000	-		-		0.220	Nov 2015	-		0.220	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NSWC CARDEROCK : MD	4.721	-		-		-		-		-	-	4.721	-
Developmental Test & Evaluation	WR	NUWC NEWPORT : RI	0.123	-		-		0.018	Nov 2015	-		0.018	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NSWC DAHLGREN : VA	0.000	-		0.303	Oct 2014	0.934	Nov 2015	-		0.934	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NAVFAC LANT : VA	0.000	-		-		0.105	Nov 2015	-		0.105	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E						Project (Number/Name) 3179 / CVN-79 Total Ship Integration			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	C/CPFF	FISC : VA	0.176	-		0.197	Nov 2014	0.223	Dec 2015	-		0.223	Continuing	Continuing	Continuing
Subtotal			5.020	-		0.500		1.500		-		1.500	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense Acquisition Workforce	Various	Various : Misc	0.181	-		-		-		-		-	-	0.181	-
Subtotal			0.181	-		-		-		-		-	-	0.181	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			142.165	11.607		15.441		14.979		-		14.979	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

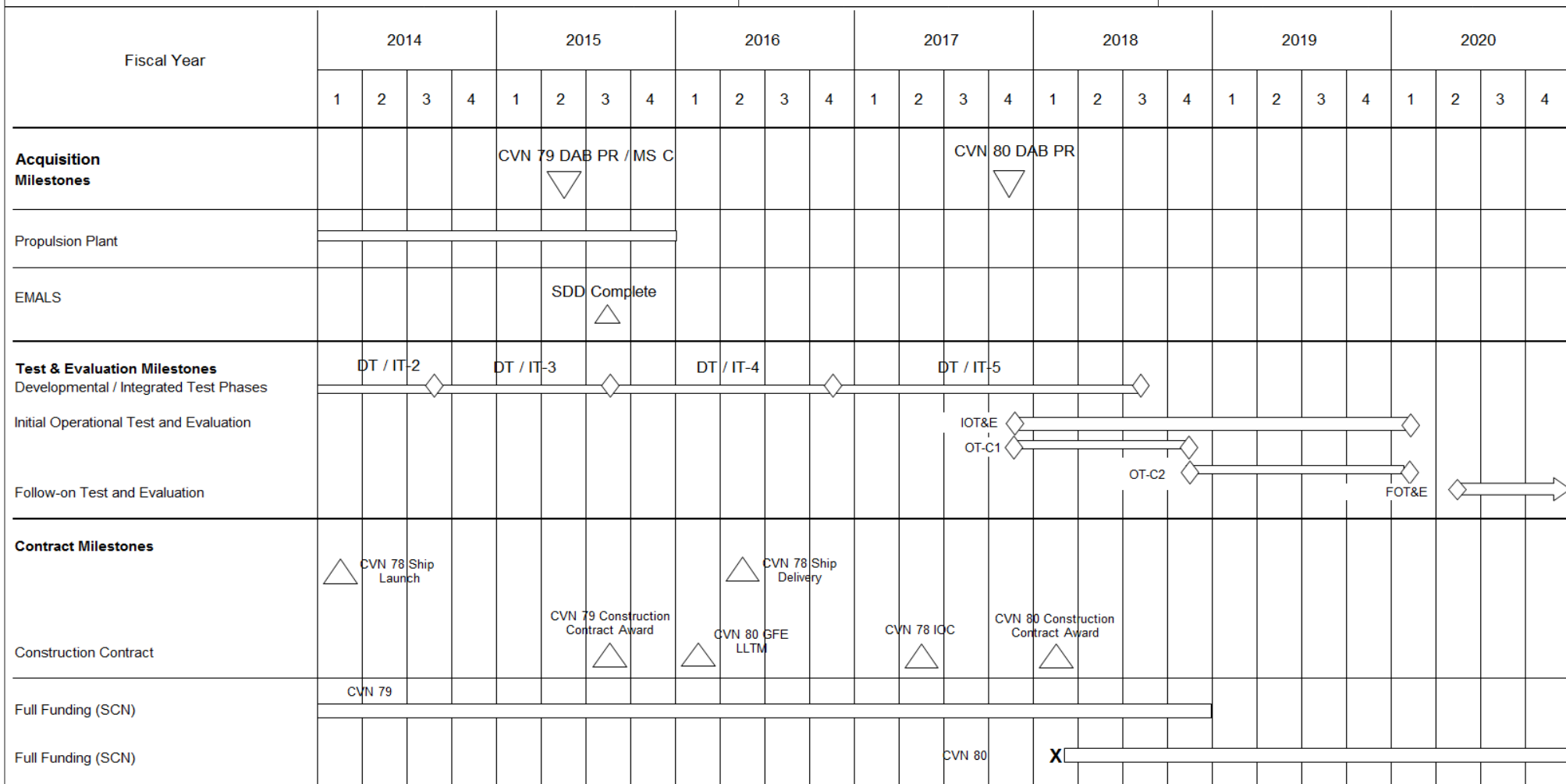
1319 / 5

R-1 Program Element (Number/Name)

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

Project (Number/Name)

3179 / CVN-79 Total Ship Integration



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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

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

Project (Number/Name)

3179 / CVN-79 Total Ship Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3179				
CVN 79 DAB PR	2	2015	2	2015
CVN 80 DAB PR	4	2017	4	2017
Milestone C	2	2015	2	2015
Propulsion Plant	1	2014	4	2015
EMALS SDD Complete	3	2015	3	2015
DT/IT -2- Developmental Test / Integrated Test Phase 2	1	2014	3	2014
DT/IT -3- Developmental Test / Integrated Test Phase 3	3	2014	3	2015
DT/IT -4- Developmental Test / Integrated Test Phase 4	3	2015	4	2016
DT/IT -5- Developmental Test / Integrated Test Phase 5	4	2016	3	2018
Initial Operational Test & Evaluation	4	2017	1	2020
OT -C1 - Initial Operational Test & Evaluation - Phase C1	4	2017	4	2018
OT -C2 - Initial Operational Test & Evaluation - Phase C2	4	2018	1	2020
FOT&E - Follow-On Test & Evaluation	2	2020	4	2020
CVN 78 Ship Launch	1	2014	1	2014
CVN 78 Ship Delivery	2	2016	2	2016
CVN 78 Initial Operational Capability (IOC)	2	2017	2	2017
CVN 79 Construction Contract Award	3	2015	3	2015
CVN 80 GFE LLTM Contract Award	1	2016	1	2016
CVN 80 Construction Contract Award	1	2018	1	2018
CVN 79 SCN Full Funding	1	2014	4	2018
CVN 80 SCN Full Funding	1	2018	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3369 / Hybrid Electric Drive			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3369: Hybrid Electric Drive	-	-	7.949	4.222	-	4.222	1.689	1.712	1.746	1.780	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project includes the DON Energy Initiative related to the DDG 51 Hybrid Electric Drive to reduce DDG 51 Class ship energy consumption and increase mission effectiveness through longer time on station. This project supports propulsion at low ship speeds without the need for LM 2500 main engines. Fuel savings from the Hybrid Electric Drive system will be achieved by utilizing fewer gas turbines for propulsion and ship service power generation while also loading gas turbines generators at a more efficient operating load. Provides critical foundation for SECNAV and CNO objectives to achieve greater Navy-wide energy security.												
Note: FY 2014 and prior year funding is resourced under project 1803 in the program element.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: DON Energy Initiative Articles: Description: This project is a DON Energy Initiative related to the DDG 51 Hybrid Electric Drive (HED) to reduce DDG 51 Class ship energy consumption and increase mission effectiveness through longer time on station. FY 2014 Accomplishments: N/A FY 2015 Plans: Complete Machinery Control System (MCS) integration development and environmental qualification testing. Continued training, integrated logistics support (ILS), and ship integration design development (efforts continued from those resourced under project 1803). Begin Land Based Engineering Sites (LBES) Installation and Checkout of the pre-production unit. FY 2016 Base Plans: Complete MCS software development. Complete Land Based Engineering Sites (LBES) Installation and Checkout of the pre-production unit. Commence initial LBES integration testing. Complete Integrated Logistics Support (ILS) certifications and ship design development. FY 2016 OCO Plans:								-	7.949	4.222	-	4.222
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015				
Appropriation/Budget Activity 1319 / 5			R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>			Project (Number/Name) 3369 / <i>Hybrid Electric Drive</i>		

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	-	7.949	4.222	-	4.222

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN 0140: <i>Hybrid Electric Drive</i>	-	12.638	32.906	-	32.906	40.494	41.427	42.402	43.256	Continuing	Continuing
Remarks											

D. Acquisition Strategy

A full and open competition with a Fixed Price Incentive Fee Contract awarded for the development, qualification, and delivery of the Engineering Development Models (EDM) Hybrid Electric Drive (HED) and the initial HED production shipsets for the DDG 51 Fleet Modernization Program.

E. Performance Metrics

Successful completion of Engineering Development Model (EDM) and complete fielding of First Article (FA) including contract award, design, manufacturing, and delivery. Successful completion of Factory Acceptance Test (FAT) and performance testing in Land Based Engineering Site (LBES). Commencement, completion, delivery and installation of Low Rate Initial Production (LRIP) units. Achieve fuel efficiency and increase on-station time.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
1319 / 5				PE 0604567N / Ship Contract Design/ Live Fire T&E						3369 / Hybrid Electric Drive					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DON Energy Initiative - OEM	C/FPIF	L-3 Maritime Systems : Leesburg, VA	0.000	-		2.337	Jan 2015	0.750	Jan 2016	-		0.750	Continuing	Continuing	Continuing
Subtotal			0.000	-		2.337		0.750		-		0.750	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HED - DON Energy Initiative -OEM	WR	NSWC/SSSES : Philadelphia, PA	0.000	-		5.287	Dec 2014	3.372	Dec 2015	-		3.372	Continuing	Continuing	Continuing
HED - DON Energy Initiative -OEM	Various	SUPSHIP BATH : Bath, ME	0.000	-		0.325	Jan 2015	0.100	Jan 2016	-		0.100	-	0.425	-
Subtotal			0.000	-		5.612		3.472		-		3.472	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		7.949		4.222		-		4.222	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3369 / Hybrid Electric Drive

Fiscal Year	2014				2015				2016				2017				2018				2019				2020			
Acquisition Milestones - Project 3369	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
Hybrid Electric Drive Contract Design & Production																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3369 / Hybrid Electric Drive

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3369				
Hybrid Electric Drive Contract Design and Production	1	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 4007 / CVN 21 LFT&E			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4007: CVN 21 LFT&E	54.681	3.610	3.426	4.709	-	4.709	3.945	4.001	4.091	4.175	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 223												

A. Mission Description and Budget Item Justification

This project encompasses Live Fire Test and Evaluation (LFT&E) efforts for the CVN 78 Class. Title 10, US Code, Section 2366, CVN 21 Operational Requirements Document (ORD) and the CVN 78 Class Test and Evaluation Master Plan (TEMP) 1610, prescribe requirements for LFT&E. The purpose of LFT&E is to evaluate covered systems in a realistic combat environment before proceeding beyond low-rate initial production. Since the application of the survivability testing required by 10 USC 2366 to a CVN 78 Class ship would be unreasonably expensive and impractical, the Secretary of Defense waived the live fire testing requirement in 2004 and submitted a certification of that determination to Congress. The CVN 78 Class LFT&E Management Plan details the testing, modeling and simulation, and engineering analyses that are being used to determine whether CVN 78 Class ships will be able to survive and carry out their missions against the threat weapons identified in the Surface Ship Capstone System Threat Assessment Report (CSTAR) that are likely to be encountered in combat. The results of these tests and analyses are documented in periodic Vulnerability Assessment Reports (VARs).

The CVN 78 Class VAR 3 was completed in the summer of 2007 and the CVN 78 Class VAR 4 is scheduled to be completed in FY 15.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: CVN 21 LFT&E	3.610	3.426	4.709	-	4.709
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed the Damage Scenario-Based Engineering Analyses (DSBEAs) for VAR 4. These analyses assessed the vulnerability of the detail design of the CVN 78 Class to selected LFT&E threat weapons as well as the capabilities of the ship design to facilitate the crew's ability to contain damage and restore mission capability after the weapon hits. Continued the Ship Vulnerability Model (SVM) analyses, which included determining the probabilities of ship and / or mission losses resulting from hits by each of the ORD or LFT&E threat weapons and conducting detailed analyses of each result where there was a high probability of ship or mission loss to identify the equipment and / or systems that were the main contributors to the vulnerability. Began documenting the DSBEA and SVM analyses and results in VAR 4. Completed the enhancements to the CVN 78 full-ship structural Finite Element Model (FEM), which included adding structural details, refining the mesh size in the areas of interest and conducting quality assurance checks.					
FY 2015 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>		Project (Number/Name) 4007 / CVN 21 LFT&E	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>Complete the SVM analyses and document the findings and results in the draft VAR 4. Distribute the draft VAR 4 for review, adjudicate comments, update and finalize, and route for signature. Using the enhanced CVN 78 full-ship structural FEM, commence the M&S Analytical Bridge studies of the CVN 78's response to Underwater Explosive (UNDEX) events. These studies will be used to establish a bridge from the results of the surrogate live-fire tests of scaled models of selected ship sections to the analytical results of the full-ship CVN 78 to similar UNDEX events. These studies will also be used for Verification and Validation of the Modeling & Simulation (M&S) tools, leading to increased confidence in the M&S results. Begin planning for the CVN 78 Total Ship Survivability Trial (TSST), which will be a full-ship, full-crew validation of previous DSBEA assessments of the capabilities of the ship design to facilitate the crew's ability to contain the damage and restore mission capability after the weapon hits.</p> <p>FY 2016 Base Plans: Continue using the enhanced CVN 78 full-ship structural FEM to support the accomplishment of the M&S Analytical Bridge studies of the CVN 78's response to UNDEX events. Continue planning for the CVN 78 TSST, which includes continuing to update the DSBEAs selected as TSST scenarios and beginning the development of the TSST drill guides.</p> <p>FY 2016 OCO Plans: N/A</p>					
Accomplishments/Planned Programs Subtotals	3.610	3.426	4.709	-	4.709

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTEN / 0603512N: <i>Project Units 2208, 4004</i>	72.734	-	-	-	-	-	-	-	-	-	1,709.131
• RDTEN / 0603570N: <i>Propulsion Plant Development (PU 2692)</i>	57.499	60.459	-	-	-	-	-	-	-	-	1,526.813
• SCN / 2001: <i>Carrier Replacement Program</i>	917.553	1,219.425	2,509.359	-	2,509.359	2,955.056	3,530.762	2,075.957	873.334	Continuing	Continuing
• SCN / 5300: <i>Completion of Prior Year Shipbuilding Programs</i>	588.100	663.000	123.760	-	123.760	-	-	-	-	-	1,374.860
• RDTEN / 0604112N: <i>Project Units 2208, 4004</i>	-	43.613	48.105	-	48.105	45.386	33.890	25.418	25.951	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 4007 / CVN 21 LFT&E			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• OMN / 1B2B: CVN 78 Ford Class Training (12BJ0)	-	4.907	38.389	-	38.389	35.600	3.878	3.880	3.956	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The CVN 78 is 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 (EMALS), advanced arresting gear (AAG) 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 war fighting 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.											
E. Performance Metrics											
Complete: (1) the adjudication of final comments and updates to the CVN 78 Class LFT&E Management Plan, Revision B and route for signature; (2) the refinement of the CVN 78 structural FEM, in support of the Analytical Bridge analyses; and (3) the analyses and documentation for VAR 4 and route for signature.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E						Project (Number/Name) 4007 / CVN 21 LFT&E			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation	WR	NSWC Carderock : MD	45.128	2.570	Nov 2013	2.466	Nov 2014	3.358	Nov 2015	-		3.358	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	C/CPAF	HII : VA	9.504	0.994	Nov 2013	0.960	Nov 2014	1.291	Nov 2015	-		1.291	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	WR	NSWC Dahlgren : VA	0.039	0.046	Dec 2013	-		0.060	Nov 2015	-		0.060	Continuing	Continuing	Continuing
Subtotal			54.671	3.610		3.426		4.709		-		4.709	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense Acquisition Workforce	TBD	Various : Various	0.010	-		-		-		-		-	-	0.010	-
Subtotal			0.010	-		-		-		-		-	-	0.010	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			54.681	3.610		3.426		4.709		-		4.709	-	-	-
Remarks															

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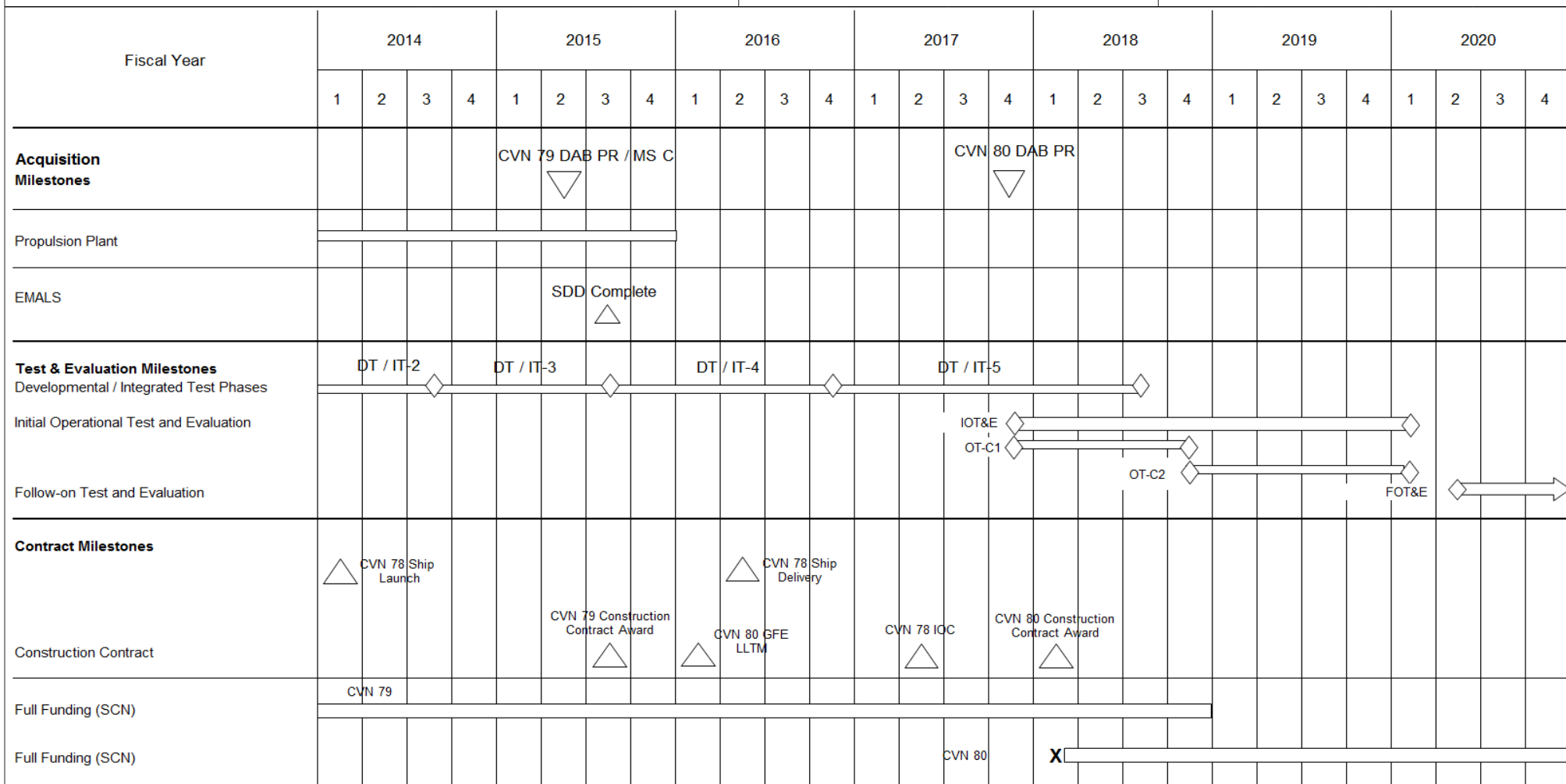
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 5

R-1 Program Element (Number/Name)
PE 0604567N / Ship Contract Design/ Live
Fire T&E

Project (Number/Name)
4007 / CVN 21 LFT&E



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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 4007 / CVN 21 LFT&E	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4007				
CVN 79 DAB PR	2	2015	2	2015
CVN 80 DAB PR	4	2017	4	2017
Milestone C	2	2015	2	2015
Propulsion Plant	1	2014	4	2015
EMALS SDD Complete	3	2015	3	2015
DT/IT -2- Developmental Test / Integrated Test Phase 2	1	2014	3	2014
DT/IT -3- Developmental Test / Integrated Test Phase 3	3	2014	3	2015
DT/IT -4- Developmental Test / Integrated Test Phase 4	3	2015	4	2016
DT/IT -5- Developmental Test / Integrated Test Phase 5	4	2016	3	2018
Initial Operational Test & Evaluation	4	2017	1	2020
OT - C1 - Initial Operational Test & Evaluation - Phase C1	4	2017	4	2018
OT - C2 - Initial Operational Test & Evaluation - Phase C2	4	2018	1	2020
FOT&E - Follow-On Test & Evaluation	2	2020	4	2020
CVN 78 Ship Launch	1	2014	1	2014
CVN 78 Ship Delivery	2	2016	2	2016
CVN 78 Initial Operational Capability (IOC)	2	2017	2	2017
CVN 79 Construction Contract Award	3	2015	3	2015
CVN 80 GFE LLTM Contract Award	1	2016	1	2016
CVN 80 Construction Contract Award	1	2018	1	2018
CVN 79 SCN Full Funding	1	2014	4	2018
CVN 80 SCN Full Funding	1	2018	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9999: Congressional Adds	-	50.000	-	-	-	-	-	-	-	-	-	50.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 333												
A. Mission Description and Budget Item Justification <p>The LHA(R) program recapitalizes the aging Amphibious Assault Ships (LHA & LHD). LHA(R) Flight 1, the second increment of the LHA(R) program, will: continue using the LHD-1/LHA-6 hull form; reincorporate a well deck; have a smaller island, as compared to LHD-1/LHA-6, to improve flight deck operations; maintain the Flight 0 aviation capability to the maximum extent possible - making only those trades necessary to accommodate a well deck. LHA(R) ships contribute to the Navy and integrated joint warfighting force by providing sustained military forward presence and crisis response capability far from the Continental United States with little or no reliance on host governments for basing and logistics. Independently, or as part of a larger force, the LHA(R) ship enables Sailors and Marines to operate for sustained periods while conducting amphibious and/or expeditionary operations to include: embarking, transporting, controlling, inserting, sustaining and extracting elements of a Marine Air-Ground Task Force and supporting forces.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015			
Congressional Add: LHA(R) FLT Design and Total Ship Integration								50.000	-			
FY 2014 Accomplishments: LHA 8 Conducted, with industry, specification reading sessions of proposed contract design LHA 8 Initiated expanded Early Industry Involvement to develop each competitors cost estimate LHA 8 Initiated systematic review to identify major cost drivers and cost reduction opportunities LHA 8 Initiated vendor studies and break out analysis to identify cost savings												
FY 2015 Plans: LHA 8 Conduct, with industry, specification reading sessions of final contract design LHA 8 Complete expanded Early Industry Involvement to develop each competitors cost basis LHA 8 Complete systematic review to identify major cost drivers and cost reduction opportunities LHA 8 Complete vendor studies and break out analysis to identify cost savings LHA 8 Issue RFP for Advanced Procurement												
FY 15 efforts financed with FY 14 carryover.												
Congressional Adds Subtotals								50.000	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 9999 / Congressional Adds			

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SCN/3041: LHA (R) Ships	37.700	29.093	277.543	-	277.543	1,525.817	2,085.216	-	-	-	10,334.569
• RDT&E/2465: LHA (R) FLT	28.757	10.561	9.520	-	9.520	3.924	7.507	14.471	5.068	Continuing	Continuing
<i>Design and Total Ship Integration</i>											

Remarks

D. Acquisition Strategy
Acquisition Strategy document currently in development.

E. Performance Metrics
Identify LHA 8 major cost drivers and cost savings initiatives.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>						Project (Number/Name) 9999 / <i>Congressional Adds</i>			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Design/Special Studies - Government	WR	Various : Various	0.000	6.000	Feb 2014	-		-		-		-	-	6.000	-
Ship Design/Special Studies - Industry	C/CPFF	Various : Various	0.000	44.000	Jun 2014	-		-		-		-	-	44.000	-
Subtotal			0.000	50.000		-		-		-		-	-	50.000	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	50.000	-	-	-	-	-	50.000	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>			Project (Number/Name) 9999 / <i>Congressional Adds</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Proj 9999																												
LHA 8 Conduct expanded LHA 8 industry involvement initiatives including studies, analysis, and contract design	[REDACTED]																											
LHA 8 Award Advance Procurement Contract	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&E</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
LHA 8 Conduct expanded LHA 8 industry involvement initiatives including studies, analysis, and contract design	2	2014	4	2015
LHA 8 Award Advance Procurement Contract	2	2015	2	2015