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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	608.706	38.060	63.311	67.166	-	67.166	69.618	53.390	55.474	56.550	Continuing	Continuing
1803: Ship Contract Design	124.947	7.866	2.209	3.880	-	3.880	3.226	3.298	3.372	3.438	Continuing	Continuing
2465: LHA(R) FLT Design and Total Ship Integration	241.976	8.326	9.488	8.169	-	8.169	14.639	2.488	6.078	6.194	Continuing	Continuing
3108: CVN 80 Total Ship Integration	0.000	0.977	30.103	33.195	-	33.195	32.220	27.904	26.147	26.647	Continuing	Continuing
3179: CVN-79 Total Ship Integration	172.286	13.035	17.081	16.953	-	16.953	14.894	15.207	15.509	15.806	Continuing	Continuing
3369: Hybrid Electric Drive	7.814	3.717	0.000	0.986	-	0.986	0.518	0.266	0.000	0.000	0.000	13.301
3374: MPF(F)	0.000	0.000	0.694	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.694
4007: CVN 21 LFT&E	61.683	4.139	3.736	3.983	-	3.983	4.121	4.227	4.368	4.465	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 333, 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.												
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.												

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B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget		38.925	65.002	67.591	-	67.591
Current President's Budget		38.060	63.311	67.166	-	67.166
Total Adjustments		-0.865	-1.691	-0.425	-	-0.425
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.865	0.000			
• Program Adjustments		0.000	-1.691	-1.513	-	-1.513
• Rate/Misc Adjustments		0.000	0.000	1.088	-	1.088
Change Summary Explanation						
FY17:						
PROJ 3369: \$1.691M removed from Hybrid Electric Drive (HED) to offset Navy FY17 request for additional appropriations.						
FY18:						
PROJ 3369: \$1.503M removed from Hybrid Electric Drive (HED) due to reduced effort.						
PROJ 3374: \$0 in FY18 reflects reestablishment of the National Defense Sealift Fund (NDSF) Appropriation (BA 04 PE 0408042N, Project 3110 (Maritime Prepositioning Force (Future)).						

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
1803: Ship Contract Design	124.947	7.866	2.209	3.880	-	3.880	3.226	3.298	3.372	3.438	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.

Expeditionary Mobile Base (ESB) (formerly MLP AFSB)

Funds are for performance specification development, and Dynamic Interface Testing for various airframes as part of the ESB Special Operations Forces (SOF) Backfit.

Task Force Cyber Awareness (TFCA) - NAVSEA Boundary Defense Capability:

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

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

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
<b>Title:</b> Ship Contract Design	2.208	2.209	2.238	0.000	2.238
<b>Articles:</b>	-	-	-	-	-
<b>FY 2016 Accomplishments:</b>					
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.					

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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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<p>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.</p> <p>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.</p> <p><b>FY 2017 Plans:</b></p> <p>Continue ship design and alteration development for superstructure cracking/aluminum sensitization in CG's and for DDG 51 Flt IIA ship design to include development of structural reliability and other alterations to include helo hangar door reliability improvements in FY 17.</p> <p><b>FY 2018 Base Plans:</b></p> <p>Continue ship design and alteration development for superstructure cracking/aluminum sensitization and HM&amp;E network upgrades in CG's and for DDG 51 Flt IIA ship design to include development of structural reliability and other alterations to include machinery control systems improvements in FY 18.</p> <p><b>FY 2018 OCO Plans:</b></p> <p>N/A</p>						
<p><b>Title:</b> ESB</p> <p><b>Articles:</b></p> <p><b>FY 2016 Accomplishments:</b></p> <p>Performance Spec development for Expeditionary Mobile Base (ESB) 3 (formerly MLP AFSB 3) SOF Equipment. Initial planning for SOF PDT&amp;T Dynamic Interface Testing (CV-22, MH-60, MQ-8C),SESEF, and E3 testing in support of SOF backfit effort was completed. Execute SOF PDT&amp;T, including Dynamic Interface Testing (CV-22, MH-60, MQ-8C), SESEF, and E3 testing. Conduct Follow-on Operational Test &amp; Evaluation (FOT&amp;E), if required. Some FY16 efforts will continue into FY17.</p> <p><b>FY 2017 Plans:</b></p>		3.663 -	0.000 -	1.642 -	0.000 -	1.642 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Navy				<b>Date:</b> May 2017	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E		<b>Project (Number/Name)</b> 1803 / Ship Contract Design	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
N/A					
<b>FY 2018 Base Plans:</b> Complete ESB FOT&E, if required. Complete ESB 3 final reporting for all test events pertaining to SOF efforts. Execute ESB 4 SOF PDT&T and complete final reporting.  <b>FY 2018 OCO Plans:</b> N/A					
<b>Title:</b> Boundary Defense Capability  <div style="text-align: right;"><b>Articles:</b></div>	1.995	0.000	0.000	0.000	0.000
<b>FY 2016 Accomplishments:</b> Begin efforts to implement external boundary cyber defense capability.  <b>FY 2017 Plans:</b> N/A  <b>FY 2018 Base Plans:</b> N/A  <b>FY 2018 OCO Plans:</b> N/A	-	-	-	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	7.866	2.209	3.880	0.000	3.880

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN 0900: DDG Mod	421.195	432.766	603.355	-	603.355	456.218	605.847	582.863	714.483	3,365.248	9,021.982
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
Continuing systems and software development for both development models and production machinery control units at Land Based Engineering Sites.											
<b>E. Performance Metrics</b>											
CG:											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>	<b>Project (Number/Name)</b> 1803 / <i>Ship Contract Design</i>
<p>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.</p> <p>DDG Modernization: Efforts for DDG Mod include design and development for next generation MCS software integration.</p> <p>ESB: Completion of Dynamic Interface Testing.</p> <p>Task Force Cyber Awareness (TFCA): NAVSEA Boundary Defense Capability.</p>		

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2465: LHA(R) FLT Design and Total Ship Integration	241.976	8.326	9.488	8.169	-	8.169	14.639	2.488	6.078	6.194	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 reached the end of their extended service lives in 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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: LHA (R) FLT 0 Design and Total Ship Integration - LHA 6								3.098	7.022	1.295	0.000	1.295
								Articles: -	-	-	-	-
FY 2016 Accomplishments:												
LHA 6 Continued Test and Evaluation Master Plan (TEMP) Rev B.												
LHA 6 Completed Vulnerability Assessment Report I (VAR I).												
LHA 6 Continued Operational Test and Evaluation (OT&E).												
LHA 6 Continued evaluating the interoperability data supporting Key Performance Parameters (KPP).												
LHA 6 Continued Development Testing (DT-B3).												
LHA 6 Continued Final Vulnerability Assessment Report (VAR).												
LHA 6 Continued Total Ship Survivability Trial (TSST) preparations.												
LHA 6 Continued LHA Class Reliability Maintainability and Availability (RMA).												
FY 2017 Plans:												
LHA 6 Completed Test and Evaluation Master Plan (TEMP) Rev B.												
LHA 6 Continue Final Vulnerability Assessment Report (VAR).												
LHA 6 Continue Operational Test and Evaluation (OT&E).												
LHA 6 Continue LHA Class Reliability Maintainability and Availability (RMA).												
LHA 6 Complete Development Testing (DT-B3).												

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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) 2465 / LHA(R) FLT Design and Total Ship Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
LHA 6 Complete evaluation of the interoperability data supporting Key Performance Parameters (KPP). LHA 6 Complete Total Ship Survivability Trial (TSST). <b>FY 2018 Base Plans:</b> LHA 6 Continue Operational Test and Evaluation (OT&E). LHA 6 Continue LHA Class Reliability Maintainability and Availability (RMA). LHA 6 Complete Final Vulnerability Assessment Report (VAR). <b>FY 2018 OCO Plans:</b> N/A						
Title: LHA (R) FLT 1 Design and Total Ship Integration - LHA 8		5.228	2.466	6.874	0.000	6.874
Articles:		-	-	-	-	-
FY 2016 Accomplishments: LHA 8 Completed Milestone Documentation and Defense Acquisition Board (DAB) Program Reviews. LHA 8 Continued Test and Evaluation Master Plan (TEMP) Rev B. LHA 8 Continued Operational Test and Evaluation (OT&E) preparations. LHA 8 Continued Vulnerability Assessment Report (VAR). LHA 8 Awarded Planning, Advanced Engineering and Procurement of Long Lead Time Materials. LHA 8 Initiated Enterprise Air Search Radar (EASR) integration efforts. <b>FY 2017 Plans:</b> LHA 8 Completed Test and Evaluation Master Plan (TEMP) Rev B. LHA 8 Continue Vulnerability Assessment Report (VAR). LHA 8 Continue Enterprise Air Search Radar (EASR) integration efforts. LHA 8 Continue Operational Test & Evaluation preparation for Operational Assessment (OA). LHA 8 Award of the Detail Design and Construction Option. <b>FY 2018 Base Plans:</b> *Note - Increase is due to planned ramp up of Live Fire Test & Evaluation (LFT&E) efforts required by US Code Title 10 Section 2366, planned ship and combat system integration engineering support for the Enterprise Air Search Radar (EASR) Land Based Test System, and continued Reliability, Maintainability, and Availability (RMA) efforts.						



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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total			
The LHA 8 LFT&E increase is a result of expanded data efforts and refinement of vulnerability modeling and simulations to prepare and complete Vulnerability Assessment Reports (VAR). LHA 8 will be tested to survive and continue its mission after sustaining weapon damage specifically related to all design changes (compartmentation, space arrangements, distributed systems, piping, cabling, etc.) not otherwise evaluated using the LHD 8 or LHA 6 designs.											
LHA 8 Initiate Reliability Maintainability Availability (RMA) analysis. LHA 8 Continue Vulnerability Assessment Report (VAR). LHA 8 Continue Enterprise Air Search Radar (EASR) integration efforts. LHA 8 Continue Operational Test & Evaluation preparation for Operational Assessment (OA).											
FY 2018 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals				8.326	9.488	8.169	0.000	8.169			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SCN/3041: LHA (R) Ships	476.543	1,623.024	1,710.927	-	1,710.927	0.000	0.000	0.000	0.000	0.000	10,256.297
Remarks											
D. Acquisition Strategy											
LHA 6 Advanced Procurement and Long Lead Time Material was awarded on a sole source basis to Huntington Ingalls Inc., formerly Northrop Grumman Shipbuilding, on 15 July 2005; LHA 6 Detail Design and Construction (DD&C) was awarded on 1 June 2007. The Advance Procurement and Long Lead Time Material efforts were subsumed by the Fixed Price Incentive, Firm Target DD&C contract.											
LHA 7 Advanced Procurement and Long Lead Time Material was awarded on a sole source basis to Huntington Ingalls Inc., formerly Northrop Grumman Shipbuilding, on 30 June 2010; LHA 7 DD&C was awarded on 31 May 2012. The Advanced Procurement and Long Lead Time Material efforts were subsumed by the Fixed Price Incentive, Firm Target DD&C contract.											
LHA 8 Planning, Advanced Engineering and Procurement of Long Lead Time Material (LLTM) for an LHA Replacement (LHA(R)) Flight 1 Amphibious Assault Ship was awarded on a competitive basis to Huntington Ingalls Inc. on 30 June 2016. The option for LHA 8 Detail Design and Construction is planned to be exercised in 2017.											

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The Planning, Advanced Engineering and Procurement of Long Lead Time Material (LLTM) efforts will be subsumed by the Fixed Price Incentive, Firm Target DD&C contract with the option exercise.		
<b>E. Performance Metrics</b> Successfully achieve Initial Operational Capability, successfully complete Operational Test and Milestone Reviews.		

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	97.905	0.000		0.000		0.000		-		0.000	0.000	97.905	-
Ship Design	C/CPFF	HII : Pascagoula, MS	5.009	0.000		0.000		0.000		-		0.000	0.000	5.009	-
Ship Design	C/CPFF	Various : Various	39.733	4.354	Dec 2015	0.000		0.000		-		0.000	0.000	44.087	-
Special Studies	WR	NSWC : Panama City, FL	4.800	0.000		0.000		0.000		-		0.000	0.000	4.800	-
Subtotal			147.447	4.354		0.000		0.000		-		0.000	0.000	151.801	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Technical Engineering Services	Various	NSWC : Various	0.000	0.000		2.300	Dec 2016	4.251	Dec 2017	-		4.251	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		2.300		4.251		-		4.251	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	MIPR	JITC : Fort Huachuca, AZ	4.328	0.081	Dec 2015	0.150	Dec 2016	0.000		-		0.000	0.000	4.559	-
Operational Test & Evaluation	WR	OPTEVFOR/ MCOTEA/NAVSUP : Norfolk, VA/ Quantico, VA	16.592	1.386	Dec 2015	3.403	Dec 2016	1.045	Dec 2017	-		1.045	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	WR	NSWC : Various	57.606	1.519	Dec 2015	3.547	Dec 2016	2.785	Dec 2017	-		2.785	Continuing	Continuing	Continuing
Subtotal			78.526	2.986		7.100		3.830		-		3.830	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: FY 2018 Navy</b>												<b>Date:</b> May 2017		
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E				<b>Project (Number/Name)</b> 2465 / LHA(R) FLT Design and Total Ship Integration				

Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	15.310	0.936	Dec 2015	0.046	Dec 2016	0.068	Dec 2017	-		0.068	Continuing	Continuing	Continuing
Travel	Various	Navsea Travel : Washington, DC	0.682	0.050	Dec 2015	0.042	Dec 2016	0.020	Dec 2017	-		0.020	Continuing	Continuing	Continuing
Defense Acquisition Workforce	Various	Various : Various	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
<b>Subtotal</b>			16.003	0.986		0.088		0.088		-		0.088	-	-	-

	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	241.976	8.326	9.488	8.169	-	8.169	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: FY 2018 Navy</b>			<b>Date: May 2017</b>		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E			<b>Project (Number/Name)</b> 2465 / LHA(R) FLT Design and Total Ship Integration

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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
<b>Proj 2465</b>																												
LHA 6 Developmental Testing																												
LHA 6 Operational Testing																												
LHA 6 Vulnerability Assessment Report (VAR)																												
LHA 6 Reliability Maintainability and Availability (RMA)																												
LHA 6 JSF FOT&E																												
LHA 8 Operational Assessment Efforts																												
LHA 8 Enterprise Air Search Radar (EASR) Integration																												
LHA 8 Reliability Maintainability and Availability (RMA)																												
LHA 8 Vulnerability Assessment Report																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> FY 2018 Navy			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>	<b>Project (Number/Name)</b> 2465 / <i>LHA(R) FLT Design and Total Ship Integration</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2465</b>				
LHA 6 Developmental Testing	1	2016	1	2017
LHA 6 Operational Testing	1	2016	4	2020
LHA 6 Vulnerabilty Assessment Report (VAR)	1	2016	1	2018
LHA 6 Reliability Maintainability and Availability (RMA)	1	2016	2	2022
LHA 6 JSF FOT&E	3	2019	3	2019
LHA 8 Operational Assessment Efforts	1	2016	4	2022
LHA 8 Enterprise Air Search Radar (EASR) Integration	1	2016	4	2020
LHA 8 Reliability Maintainability and Availability (RMA)	3	2018	4	2022
LHA 8 Vulnerability Assessment Report	1	2016	4	2022

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3108: CVN 80 Total Ship Integration	0.000	0.977	30.103	33.195	-	33.195	32.220	27.904	26.147	26.647	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 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)**

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
<b>Title:</b> Enterprise Air Surveillance Radar (EASR)	0.977	8.489	9.265	0.000	9.265
<b>Articles:</b>	-	-	-	-	-
<b>FY 2016 Accomplishments:</b> Conducted / prepared risk analyses / reports: changes and risk of change to CVN 79 / 80 baseline. Executed Requirements Engineering, Architecture: radar and infrastructure requirements, test planning, and continued the architecture model database including incorporating CVN 78 design updates and evaluated impacts (physical / logical) for system deferral, upgrades, and elimination items. Combat System Testing; conducted test site survey for EASR and EASR Radar Suite elements and integration testing. Conducted study to determine moving CANES to Phase 2 with minimal impact to ship installation and key events. Evaluated and incorporated CFE Networks as part of the DoD Risk Management Framework to support Cyber Security Requirements.					
<b>FY 2017 Plans:</b> Continue conducting / preparing risk reduction studies / reports, to include development of a risk / opportunity database to support future decision-making. Continue conducting technology assessment studies. Execute					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy				Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Requirements Engineering and Architecture, including creating a radar specification traceability matrix to the CVN ORD and development and maintenance of a new CVN Warfare System architecture. Conduct ship integration studies for GFI vetting, tracking and delivery. Continue conducting onboard and off-board EMI / EMC studies due to new the radar sensor. Continue analyzing / performing integrated topside design due to new radar sensor. Conduct power interface trade studies based upon radar prime power requirement and conduct trade studies to analyze platform power against transformer design and platform power against cost of ship modification. Continue conducting system integration studies related to the TEMP: platform impacts & updates to TEMP; cybersecurity analysis; ISP updates supporting Net Ready KPP. Continue conducting RMA and ILS Studies, to include trade studies and identification of investment opportunities / requirements. Continue preparing / updating acquisition support documents, cost estimates and the RFP.						
FY 2018 Base Plans: Continue conducting / preparing risk reduction studies / reports, to include management of a risk / opportunity database to support future-decision making. Continue conducting technology assessment studies. Continue execution of Requirements Engineering and Architecture, including maintaining a radar specification traceability matrix to the CVN ORD and maintenance of a new CVN Warfare System architecture. Continue to conduct ship integration studies for GFI vetting, tracking and delivery. Continue conducting onboard and off-board Electromagnetic Interference / Control (EMI / EMC) studies due to new the radar sensor. Continue analyzing / performing integrated topside design due to new radar sensor. Continue conducting power interface trade studies based upon radar prime power requirement and conduct trade studies to analyze platform power against transformer design and platform power against cost of ship modification. Continue conducting system integration studies related to the Test & Evaluation Master Plan (TEMP): platform impacts & updates to TEMP; cybersecurity analysis; Information Support Plan (ISP) updates supporting Net Ready KPP. Continue conducting Reliability, Maintainability & Availability (RMA) and integrated logistics support (ILS) Studies, to include trade studies and identification of investment opportunities / requirements. Continue preparing / updating acquisition support documents and cost estimates. Continue operation of the Integrated Product Team to include vendor, ship builder and Government. Participate in Preliminary Design Review.						
FY 2018 OCO Plans: N/A						
Title: CVN 78 Class Design for Affordability (DFA)		0.000	21.614	23.930	0.000	23.930
Articles:		-	-	-	-	-
FY 2016 Accomplishments:						



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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy				Date: May 2017							
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total			
N/A											
FY 2017 Plans: Conduct or support feasibility and tradeoff studies on new and modified shipboard systems and equipment. Studies shall include engineering analyses, including KPP impact assessments; identification of subsystem, integration, logistics, and testing impacts; material procurement; preliminary cost estimates for decision making purposes; development of potential contract change documentation; conducting / supporting ship checks; developmental testing; and report development and submission. Discover and assess CVN 78 Class DFA initiatives. Develop cost-saving initiatives, game changers, business case analyses, and DFA initiatives to continue to drive affordability into the carrier program. Perform CVN 80-specific engineering calculations and technical analysis in the areas of technical performance measures, system component calculations, environmental safety and health, and human factors engineering, survivability, and vulnerability, automation systems software, shock and vibration, and engineered components support.											
FY 2018 Base Plans: Continue conducting or supporting feasibility and tradeoff studies on new and modified shipboard systems and equipment. Continue to discover and assess CVN 78 Class DFA initiatives. Continue development of cost-saving initiatives, game changers, business case analyses, and DFA initiatives to continue to drive affordability into the carrier program. Continue performing CVN 80-specific engineering calculations and technical analysis in the areas of technical performance measures, system component calculations, environmental safety and health, and human factors engineering, survivability, and vulnerability, automation systems software, shock and vibration, and engineered components support.											
FY 2018 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals				0.977	30.103	33.195	0.000	33.195			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SCN / 2001: Carrier Replacement Program	2,555.689	2,662.567	4,461.772	-	4,461.772	1,576.966	2,234.571	2,966.013	2,351.884	2,326.440	39,854.130
• SCN / 5300: Completion of Prior Year Shipbuilding Programs	123.760	0.000	20.000	-	20.000	0.000	95.308	0.000	0.000	0.000	1,490.068

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017	
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			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• RD TEN / 0604112N: Project Units 2208, 4004	95.408	70.528	83.935	-	83.935	84.195	57.668	27.503	28.009	Continuing	Continuing
• OMN / 1B2B: CVN 78 Ford Class Training and Sustainment (12BJ0)	25.534	14.111	14.099	-	14.099	9.422	8.398	6.580	7.165	Continuing	Continuing
• RD TEN / 0604501N: Project Unit 3236 Advanced Radar Technology	20.397	68.037	68.665	-	68.665	28.041	0.000	0.000	0.000	0.000	185.729
• OPN / 5664: Surface Training Equipment	0.000	4.733	12.010	-	12.010	8.039	1.006	5.034	3.024	0.000	33.846
• OMN / 1B1B: Mission and Other Ship Operations (11B20)	0.000	21.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.000
Remarks											
D. Acquisition Strategy											
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.											
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.											
E. Performance Metrics											
Successfully initiate the following tasks: 1) Development of risk impact statements, 2) Radar specification and traceability to test documents and 3) Development and maintenance of new CVN Warfare System architecture database.											

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	0.300	May 2016	18.100	Nov 2016	17.044	Nov 2017	-		17.044	Continuing	Continuing	Continuing
Advanced Design & Development	C/CPAF	RAYTHEON : VA	0.000	0.000		3.910	Nov 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC DAHLGREN : VA	0.000	0.151	Jun 2016	2.536	Nov 2016	5.125	Nov 2017	-		5.125	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC CARDEROCK : MD	0.000	0.000		1.485	Nov 2016	2.750	Nov 2017	-		2.750	0.000	4.235	-
Advanced Design & Development	WR	NSWC PHILADELPHIA : PA	0.000	0.000		0.000		1.125	Nov 2017	-		1.125	0.000	1.125	-
Advanced Design & Development	C/CPFF	NAVSEA SEAPORT : DC	0.000	0.000		2.162	Nov 2016	3.000	Jan 2018	-		3.000	0.000	5.162	-
Advanced Design & Development	C/BA	NAWCAD PAX RIVER : MD	0.000	0.000		0.806	Nov 2016	0.500	Nov 2017	-		0.500	0.000	1.306	-
Advanced Design & Development	WR	NAWCAD LAKEHURST : NJ	0.000	0.313	Jul 2016	0.000		0.000		-		0.000	0.000	0.313	-
Advanced Design & Development	WR	SPAWAR : CA	0.000	0.190	Jun 2016	0.000		0.500	Nov 2017	-		0.500	0.000	0.690	-
Advanced Design & Development	Various	NSRP : VARIOUS	0.000	0.000		0.000		0.835	Dec 2017	-		0.835	0.000	0.835	-
Advanced Design & Development	Various	MISCELLANEOUS : VARIOUS	0.000	0.023	Jun 2016	1.104	Nov 2016	2.316	Nov 2017	-		2.316	0.000	3.443	-
Subtotal			0.000	0.977		30.103		33.195		-		33.195	-	-	-
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.977		30.103		33.195		-		33.195	-	-	-
Remarks															

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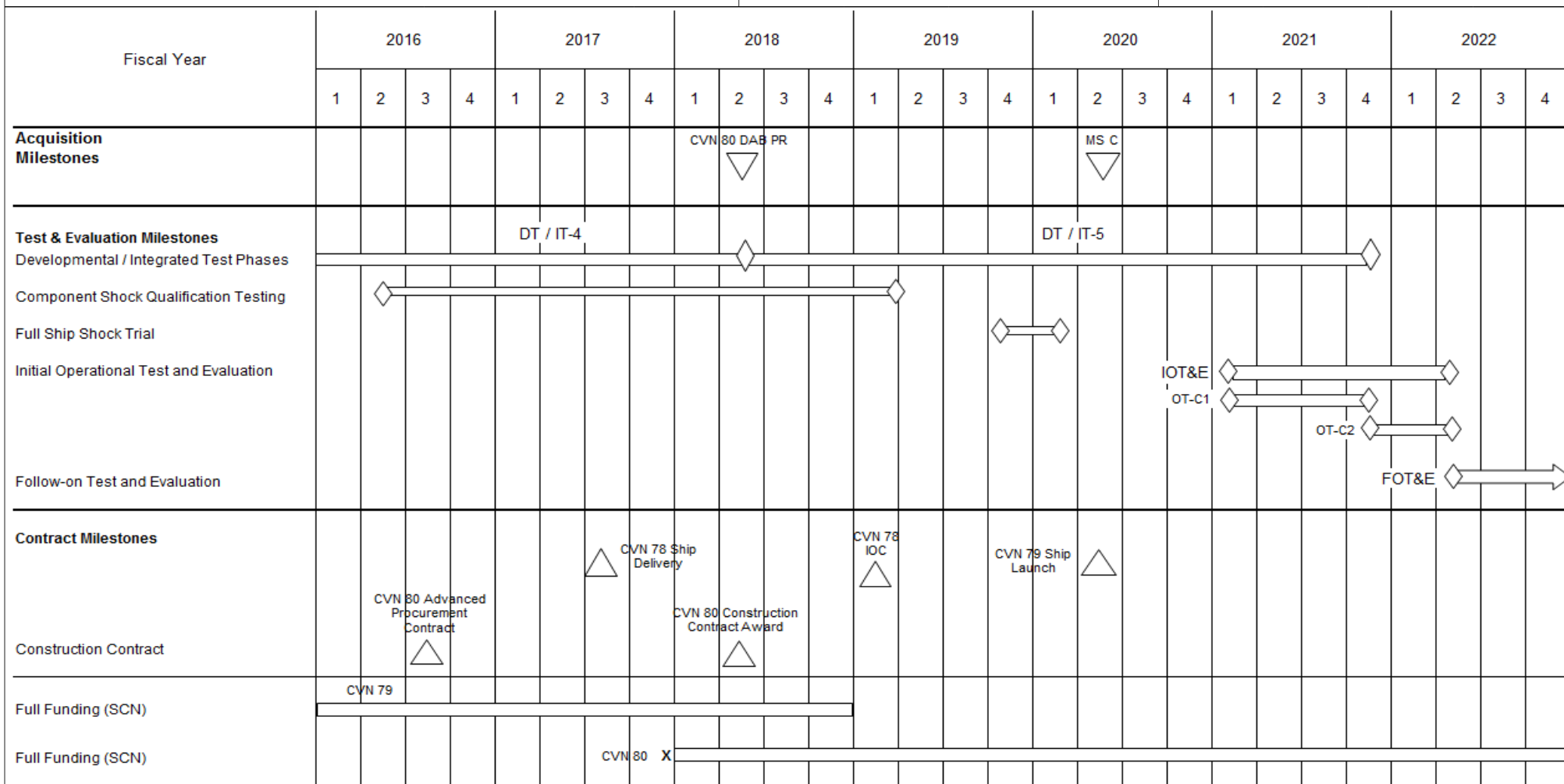
Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy

Date: May 2017

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



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Exhibit R-4A, RDT&amp;E Schedule Details: FY 2018 Navy

Date: May 2017

## 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

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3108</b>				
CVN 80 DAB PR	2	2018	2	2018
Milestone C	2	2020	2	2020
DT/IT -4- Developmental Test / Integrated Test Phase 4	1	2016	2	2018
DT/IT -5- Developmental Test / Integrated Test Phase 5	2	2018	4	2021
Component Shock Qualification Testing	2	2016	1	2019
Full Ship Shock Trial	4	2019	1	2020
Initial Operational Test & Evaluation	1	2021	2	2022
OT-C1 - Initial Operational Test & Evaluation - Phase C1	1	2021	4	2021
OT-C2 - Initial Operational Test & Evaluation - Phase C2	4	2021	2	2022
FOT&E - Follow-On Test & Evaluation	2	2022	4	2022
CVN 78 Ship Delivery	3	2017	3	2017
CVN 78 Initial Operational Capability (IOC)	1	2019	1	2019
CVN 80 Advanced Procurement Contract Award	3	2016	3	2016
CVN 80 Construction Contract Award	2	2018	2	2018
CVN 79 SCN Full Funding	1	2016	4	2018
CVN 79 Ship Launch	2	2020	2	2020
CVN 80 SCN Full Funding	1	2018	4	2022

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3179: CVN-79 Total Ship Integration	172.286	13.035	17.081	16.953	-	16.953	14.894	15.207	15.509	15.806	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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: CVN-79 Total Ship Integration								13.035	17.081	16.953	0.000	16.953
								Articles: -	-	-	-	-
FY 2016 Accomplishments:												
Continued to develop cost reduction measures in support of CVN 79 and follow-on ship affordability. Assessed design and process changes to further address JP-5 CRES piping system integrity. Continued to integrate the unique maintenance, storage and handling requirements to deploy with the F-35C. Continued to address design, equipment, and system changes between CVN 78 and CVN 79 to identify candidate equipment and / or systems that might have required Follow-on Test and Evaluation (FOT&E). Continued to address design and construction issues based on the results of CVN 78 testing. Continued to manage fact-of-life and obsolescence changes on government-furnished equipment systems.												
FY 2017 Plans:												

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
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>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Continue to address design, equipment and system changes between CVN 78 and CVN 79 to identify candidate equipment and / or systems that may require FOT&E. 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. Initiate CVN 79 Phase II study to develop a strategy to efficiently transition from Phase I construction to Phase II and final delivery of CVN 79.  <b><i>FY 2018 Base Plans:</i></b> Continue to address design, equipment and system changes between CVN 78 and CVN 79 to identify candidate equipment and/or systems that may require FOT&E. Continue to address design and construction issues based on the results of CVN 78 testing. Continue to manage fact-of-life, obsolescence changes on government furnished equipment systems, challenges encountered on CFE, and material analysis. Perform throughput analysis on Facility investments (Shop Lathe, Panel Line, Weather Covers, Outfitting Hall & Dry Dock)and Non-Touch Labor to solidify cost improvements. Continue CVN 79 Phase II study to develop a strategy to efficiently transition from Phase I construction to Phase II and final delivery of CVN 79.  <b><i>FY 2018 OCO Plans:</i></b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	13.035	17.081	16.953	0.000	16.953

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

<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018 Base</u>	<u>FY 2018 OCO</u>	<u>FY 2018 Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SCN / 2001: <i>Carrier Replacement Program</i>	2,555.689	2,662.567	4,461.772	-	4,461.772	1,576.966	2,234.571	2,966.013	2,351.884	2,326.440	39,854.130
• SCN / 5300: <i>Completion of Prior Year Shipbuilding Programs</i>	123.760	0.000	20.000	-	20.000	0.000	0.000	0.000	0.000	0.000	1,394.860
• RDTEN / 0604112N: <i>Project Units 2208, 4004</i>	95.408	70.528	83.935	-	83.935	84.195	57.668	27.503	28.009	Continuing	Continuing
• OMN / 1B2B: <i>CVN 78 Ford Class Training and Sustainment (12BJ0)</i>	25.534	14.111	14.099	-	14.099	9.422	8.398	6.580	7.165	Continuing	Continuing
• OPN / 5664: <i>Surface Training Equipment</i>	0.000	4.733	12.010	-	12.010	8.039	1.006	5.034	3.024	0.000	33.846
• OMN / 1B1B: <i>Mission and Other Ship Operations (11B20)</i>	0.000	21.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.000

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017	
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)											
			FY 2018	FY 2018	FY 2018					Cost To	
Line Item	FY 2016	FY 2017	Base	OCO	Total	FY 2019	FY 2020	FY 2021	FY 2022	Complete	Total Cost
Remarks											
D. Acquisition Strategy											
<p>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.</p>											
E. Performance Metrics											
<p>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.</p>											



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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	86.689	4.736	Nov 2015	6.633	Nov 2016	7.480	Nov 2017	-		7.480	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC CARDEROCK : MD	13.342	1.371	Oct 2015	0.200	Nov 2016	0.616	Nov 2017	-		0.616	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC DAHLGREN : VA	10.666	1.541	Oct 2015	1.700	Oct 2016	2.273	Nov 2017	-		2.273	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC PHILADELPHIA : PA	0.497	0.634	Oct 2015	0.000		0.625	Nov 2017	-		0.625	0.000	1.756	-
Total Ship Integration	WR	NAWCAD PAX RIVER : MD	5.037	0.490	Oct 2015	1.268	Oct 2016	0.750	Oct 2017	-		0.750	Continuing	Continuing	Continuing
Total Ship Integration	WR	SPAWAR : SD	4.165	0.326	Nov 2015	0.300	Nov 2016	0.295	Nov 2017	-		0.295	Continuing	Continuing	Continuing
Total Ship Integration	C/CPFF	NAVSEA SEAPORT : DC	23.059	0.973	Dec 2015	1.950	Dec 2016	2.159	Dec 2017	-		2.159	Continuing	Continuing	Continuing
Total Ship Integration	C/CPAF	RAYTHEON : MA	8.943	0.840	Jan 2016	1.815	Dec 2016	1.000	Dec 2017	-		1.000	Continuing	Continuing	Continuing
Total Ship Integration	WR	SSC CHARLESTON : SC	0.798	0.049	Apr 2016	0.000		0.000		-		0.000	0.000	0.847	-
Total Ship Integration	C/CPFF	SAIC : VA	1.445	0.000		0.000		0.000		-		0.000	0.000	1.445	-
Total Ship Integration	Various	NSRP : Various	12.256	1.670	Mar 2016	1.670	Dec 2016	0.835	Dec 2017	-		0.835	Continuing	Continuing	Continuing
Subtotal			166.897	12.630		15.536		16.033		-		16.033	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	NSWC CARDEROCK : MD	4.721	0.000		0.000		0.000		-		0.000	0.000	4.721	-
Developmental Test & Evaluation	WR	NUWC NEWPORT : RI	0.123	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NSWC DAHLGREN : VA	0.188	0.388	Nov 2015	1.188	Nov 2016	0.569	Nov 2017	-		0.569	Continuing	Continuing	Continuing
Developmental Test & Evaluation	TBD	MISCELLANEOUS : TBD	0.000	0.017	Oct 2015	0.127	Nov 2016	0.125	Dec 2017	-		0.125	Continuing	Continuing	Continuing

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: FY 2018 Navy</b>													<b>Date: May 2017</b>		
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E						<b>Project (Number/Name)</b> 3179 / CVN-79 Total Ship Integration			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Operational Test & Evaluation	C/CPFF	FLC : VA	0.176	0.000		0.230	Dec 2016	0.226	Nov 2017	-		0.226	Continuing	Continuing	Continuing
<b>Subtotal</b>			5.208	0.405		1.545		0.920		-		0.920	-	-	-
<b>Management Services (\$ in Millions)</b>				<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Defense Acquisition Workforce	Various	Various : Misc	0.181	0.000		0.000		0.000		-		0.000	0.000	0.181	-
<b>Subtotal</b>			0.181	0.000		0.000		0.000		-		0.000	0.000	0.181	-
			<b>Prior Years</b>	<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			172.286	13.035		17.081		16.953		-		16.953	-	-	-
<b>Remarks</b>															

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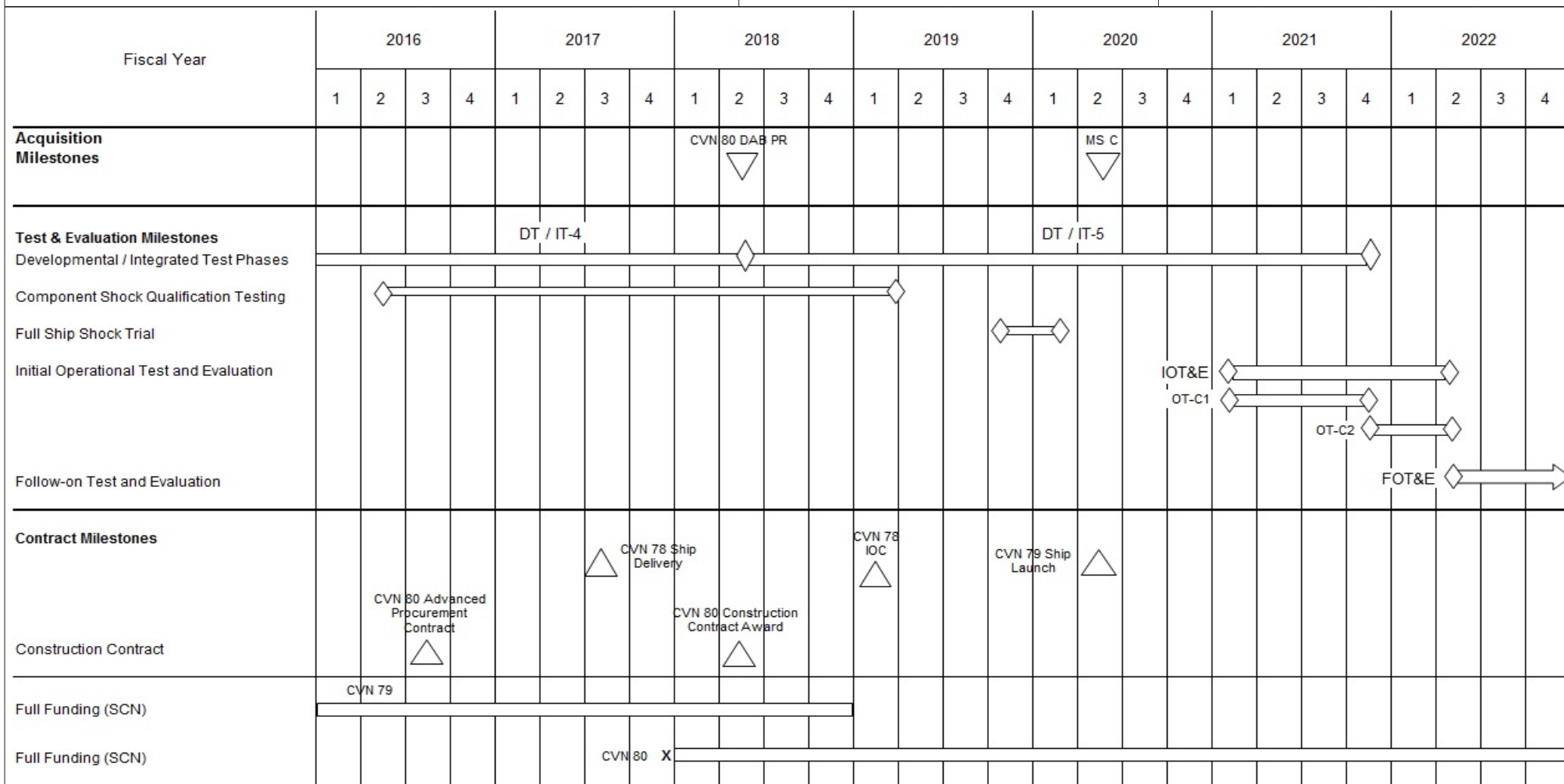
Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy

Date: May 2017

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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<b>Exhibit R-4A, RDT&amp;E Schedule Details: FY 2018 Navy</b>			<b>Date: May 2017</b>
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E	<b>Project (Number/Name)</b> 3179 / CVN-79 Total Ship Integration	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3179</b>				
CVN 80 DAB PR	2	2018	2	2018
Milestone C	2	2020	2	2020
DT/IT -4- Developmental Test / Integrated Test Phase 4	1	2016	2	2018
DT/IT -5- Developmental Test / Integrated Test Phase 5	2	2018	4	2021
Component Shock Qualification Testing	2	2016	1	2019
Full Ship Shock Trial	4	2019	1	2020
Initial Operational Test & Evaluation	1	2021	2	2022
OT-C1 - Initial Operational Test & Evaluation - Phase C1	1	2021	4	2021
OT-C2 - Initial Operational Test & Evaluation - Phase C2	4	2021	2	2022
FOT&E - Follow-On Test & Evaluation	2	2022	4	2022
CVN 78 Ship Delivery	3	2017	3	2017
CVN 78 Initial Operational Capability (IOC)	1	2019	1	2019
CVN 80 Advanced Procurement Contract Award	3	2016	3	2016
CVN 80 Construction Contract Award	2	2018	2	2018
CVN 79 SCN Full Funding	1	2016	4	2018
CVN 79 Ship Launch	2	2020	2	2020
CVN 80 SCN Full Funding	1	2018	4	2022

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3369: Hybrid Electric Drive	7.814	3.717	0.000	0.986	-	0.986	0.518	0.266	0.000	0.000	0.000	13.301
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 this program element.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<b>Title:</b> DON Energy Initiative  <b>Articles:</b>  <b>Description:</b> 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.  <b>FY 2016 Accomplishments:</b> 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. Develop and test additional MCS software baselines.  <b>FY 2017 Plans:</b> N/A  <b>FY 2018 Base Plans:</b> Develop and test additional MCS software baselines.  <b>FY 2018 OCO Plans:</b> N/A								3.717	0.000	0.986	0.000	0.986
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								3.717	0.000	0.986	0.000	0.986

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017	
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			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
			<u>FY 2018</u>	<u>FY 2018</u>	<u>FY 2018</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Complete</u>	<u>Total Cost</u>
• OPN 0140: Hybrid Electric Drive (HED)	29.106	15.132	6.331	-	6.331	5.867	0.016	0.017	0.018	46.585	115.710
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
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.											
<b>E. Performance Metrics</b>											
Completion of Engineering Development Model (EDM) and complete fielding of First Article (FA) including contract award, design, manufacturing, and delivery. 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-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3374 / MPF(F)			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3374: MPF(F)	0.000	0.000	0.694	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.694
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Project 3374 - Maritime Prepositioning Force (Future) - MPF(F) - Concept studies, preliminary, contract designs and technology development and testing leading to detail design, and construction award of ship systems for the initial operational capability milestone achievement that will provide a highly flexible, operational and logistics support capability to enable Expeditionary Maneuver Warfare concepts and to meet required operational capabilities with respect to Force Closure, Amphibious Task Force Integration, Sustainment and Reconstitution/Redeployment.												
FY 2016 and prior year efforts were financed under the National Sealift Defense Fund (NDSF) BA 04, Project 3110 (Maritime Prepositioning Force (Future)). FY18 funds are reinstated under the National Sealift Defense Fund (NDSF) BA 04, Project 3110 (Maritime Prepositioning Force (Future))in the amount of \$.468M												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Engineering and Acquisition Support  Articles:  FY 2016 Accomplishments: N/A  FY 2017 Plans: FY17 - Perform tracking execution of Test and Evaluation schedule to Test and Evaluation Master Plan (TEMP) - Complete Initial Operational Test and Evaluation (IOT&E) Phase 2 for Expeditionary Mobile Base (ESB) - Complete Total Ship Survivability Trial (TSST) and Final Survivability Assessment Report (FSAR) for Expeditionary Transfer Dock (ESD/ESB) Live Fire Test and Evaluation (LFT&E)  FY 2018 Base Plans: FY18 - N/A  FY 2018 OCO Plans: N/A								0.000	0.694	0.000	0.000	0.000
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								0.000	0.694	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3374 / MPF(F)			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
			<u>FY 2018</u>	<u>FY 2018</u>	<u>FY 2018</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Complete</u>	<u>Total Cost</u>
• SCN/3039: Afloat Forward Staging Base	635.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,214.300
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
To supplement the current maritime prepositioning force, and to provide in theater capability to support resupplying a Maritime Expeditionary Brigade, the Department is procuring 2 Expeditionary Transfer Dock (ESD, formerly MLP)in FY11, and three (one each in FY12, FY14 and FY16) Expeditionary Sea Base (ESB, formerly MLP AFSB Variant configurations).											
<b>E. Performance Metrics</b>											
Annual Program Review											



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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
4007: CVN 21 LFT&E	61.683	4.139	3.736	3.983	-	3.983	4.121	4.227	4.368	4.465	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 17.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	
Title: CVN 21 LFT&E							4.139	3.736	3.983	0.000	3.983	
Articles:							-	-	-	-	-	
FY 2016 Accomplishments: Continued using the enhanced CVN 78 full-ship structural Finite Element Model (FEM) to support the accomplishment of the Modeling & Simulation (M&S) Analytical Bridge studies of the CVN 78's response to Underwater Explosive (UNDEX) events. Continued planning for the CVN 78 Total Ship Survivability Trial (TSST), which included continuing to update the Damage Scenario Based Engineering Analyses (DSBEAs) selected as TSST scenarios and beginning the development of the TSST drill guides.												
FY 2017 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. Finalize DSBEAs utilized for TSST												

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<b>Exhibit R-2A, RDT&amp;E Project Justification: FY 2018 Navy</b>								<b>Date: May 2017</b>				
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>				<b>Project (Number/Name)</b> 4007 / <i>CVN 21 LFT&amp;E</i>				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>								<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
<p>Scenarios #3 and #4. Continue developing TSST procedures and implementation guides in support of an FY 18 TSST execution. Purchase majority of equipment that will be required for TSST in FY 18.</p> <p><b><i>FY 2018 Base Plans:</i></b> Continue conducting UNDEX analyses on the CVN 78 full-ship structural FEM in support of the Analytical Bridge Study task. Begin development of the final Survivability Assessment Report. Continue planning for the CVN 78 TSST, which includes scenario development, cold checks on CVN 78 to update drill guides and implementation sheets, and development of the TSST Plan.</p> <p><b><i>FY 2018 OCO Plans:</i></b> N/A</p>												
<b>Accomplishments/Planned Programs Subtotals</b>								4.139	3.736	3.983	0.000	3.983
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<b><u>Line Item</u></b>	<b><u>FY 2016</u></b>	<b><u>FY 2017</u></b>	<b><u>FY 2018 Base</u></b>	<b><u>FY 2018 OCO</u></b>	<b><u>FY 2018 Total</u></b>	<b><u>FY 2019</u></b>	<b><u>FY 2020</u></b>	<b><u>FY 2021</u></b>	<b><u>FY 2022</u></b>	<b><u>Cost To Complete</u></b>	<b><u>Total Cost</u></b>	
• SCN / 2001: <i>Carrier Replacement Program</i>	2,431.929	2,662.567	4,503.772	-	4,503.772	1,526.214	2,241.530	2,966.013	2,351.884	Continuing	Continuing	
• SCN / 5300: <i>Completion of Prior Year Shipbuilding Programs</i>	123.760	0.000	20.000	-	20.000	0.000	0.000	0.000	0.000	0.000	1,394.860	
• RDTEN / 0604112N: <i>Project Units 2208, 4004</i>	95.408	70.528	83.935	-	83.935	84.195	57.668	27.503	28.009	Continuing	Continuing	
• OMN / 1B2B: <i>CVN 78 Ford Class Training and Sustainment (12BJ0)</i>	25.534	14.111	14.099	-	14.099	9.422	8.398	6.580	7.165	Continuing	Continuing	
• OPN / 5664: <i>Surface Training Equipment</i>	0.000	4.733	12.010	-	12.010	8.039	1.006	5.034	3.024	0.000	33.846	
• OMN / 1B1B: <i>Mission and Other Ship Operations (11B20)</i>	0.000	21.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.000	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
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,												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>	<b>Project (Number/Name)</b> 4007 / <i>CVN 21 LFT&amp;E</i>
<p>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.</p> <p><b><u>E. Performance Metrics</u></b></p> <p>Complete: (1) the adjudication of final comments and updates to the CVN 78 Class LFT&amp;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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	52.529	2.928	Nov 2015	1.923	Nov 2016	3.153	Nov 2017	-		3.153	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	C/CPAF	HII : VA	8.938	1.131	Nov 2015	1.751	Nov 2016	0.750	Nov 2017	-		0.750	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	WR	NSWC Dahlgren : VA	0.206	0.080	Nov 2015	0.062	Nov 2016	0.080	Nov 2017	-		0.080	Continuing	Continuing	Continuing
Subtotal			61.673	4.139		3.736		3.983		-		3.983	-	-	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	0.000		0.000		0.000		-		0.000	0.000	0.010	-
Subtotal			0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	-
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			61.683	4.139		3.736		3.983		-		3.983	-	-	-
Remarks															

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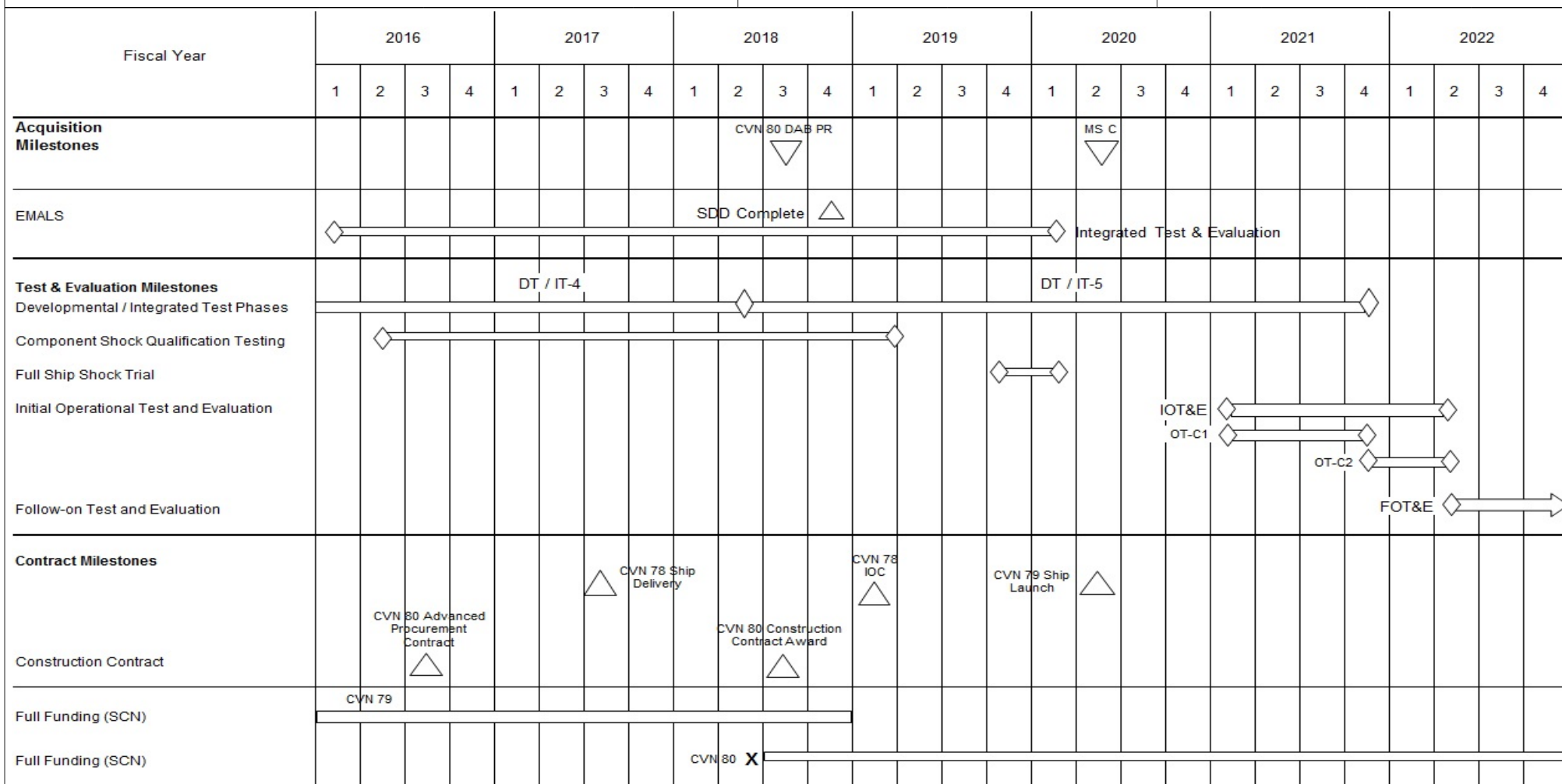
Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy

Date: May 2017

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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<b>Exhibit R-4A, RDT&amp;E Schedule Details: FY 2018 Navy</b>			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>	<b>Project (Number/Name)</b> 4007 / CVN 21 LFT&E	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 4007</b>				
CVN 80 DAB PR	2	2018	2	2018
Milestone C	2	2020	2	2020
DT/IT -4- Developmental Test / Integrated Test Phase 4	1	2016	2	2018
DT/IT -5- Developmental Test / Integrated Test Phase 5	2	2018	4	2021
Component Shock Qualification Testing	2	2016	1	2019
Full Ship Shock Trial	4	2019	1	2020
Initial Operational Test & Evaluation	1	2021	2	2022
OT-C1 - Initial Operational Test & Evaluation - Phase C1	1	2021	4	2021
OT-C2 - Initial Operational Test & Evaluation - Phase C2	4	2021	2	2022
FOT&E - Follow-On Test & Evaluation	2	2022	4	2022
CVN 78 Ship Delivery	3	2017	3	2017
CVN 78 Initial Operational Capability (IOC)	1	2019	1	2019
CVN 80 Advanced Procurement Contract Award	3	2016	3	2016
CVN 80 Construction Contract Award	2	2018	2	2018
CVN 79 SCN Full Funding	1	2016	4	2018
CVN 79 Ship Launch	2	2020	2	2020
CVN 80 SCN Full Funding	1	2018	4	2022