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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	646.717	82.946	67.166	60.062	-	60.062	59.688	54.596	55.677	56.859	Continuing	Continuing
1803: Ship Contract Design	132.813	2.198	3.880	3.111	-	3.111	3.246	3.320	3.379	3.455	Continuing	Continuing
2465: LHA(R) FLT Design and Total Ship Integration	250.257	9.486	8.169	6.841	-	6.841	9.876	5.949	6.072	6.204	Continuing	Continuing
3108: CVN 80 Total Ship Integration	0.977	29.257	33.195	31.563	-	31.563	27.423	25.726	26.239	26.787	Continuing	Continuing
3179: CVN-79 Total Ship Integration	185.317	16.663	16.953	14.536	-	14.536	14.976	15.290	15.582	15.913	Continuing	Continuing
3369: Hybrid Electric Drive	11.531	1.691	0.986	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.208
3374: MPF(F)	0.000	0.679	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.679
4007: CVN 21 LFT&E	65.822	3.629	3.983	4.011	-	4.011	4.167	4.311	4.405	4.500	Continuing	Continuing
9999: Congressional Adds	0.000	19.343	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.343
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 333, 223												
A. Mission Description and Budget Item Justification												
The FY 2019 funding request was reduced by \$.598 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.												
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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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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget		63.311	67.166	69.618	-	69.618
Current President's Budget		82.946	67.166	60.062	-	60.062
Total Adjustments		19.635	0.000	-9.556	-	-9.556
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-2.055	0.000			
• Program Adjustments		1.691	0.000	-8.616	-	-8.616
• Rate/Misc Adjustments		-0.001	0.000	-0.940	-	-0.940
• Congressional Add Adjustments		20.000	-	-	-	-
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: CVN Cost Reduction Activities						
Congressional Add Subtotals for Project: 9999						
Congressional Add Totals for all Projects						
Change Summary Explanation						
FY17:						
PROJ 3369: Request for Additional Appropriations (RAA) FY 2017 source unused. Hybrid Electric Drive funds added back.						
PROJ 9999: \$19.343M added for CVN Cost Reduction Activities.						
FY19:						

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PROJ 3369: Cancelled the Hybrid Electric Drive program. Funds removed from FY19 and FY20.		

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
1803: Ship Contract Design	132.813	2.198	3.880	3.111	-	3.111	3.246	3.320	3.379	3.455	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 Sea 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)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Ship Contract Design	2.198	2.238	3.111	0.000	3.111
Articles:	-	-	-	-	-
FY 2018 Plans:					

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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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Continue ship design and alteration development for superstructure cracking/aluminum sensitization and HM&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. FY 2019 Base Plans: Continue ship design and alteration development for service life extension and HM&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 19. FY 2019 OCO Plans: N/A FY 2018 to FY 2019 Increase/Decrease Statement: Increase associated with the Extended Service Life (ESL) studies for the CG Service Life Extension Program (SLEP).												
Title: ESB Articles:								0.000 -	1.642 -	0.000 -	0.000 -	0.000 -
FY 2018 Plans: Complete ESB FOT&E. Complete ESB 3 final reporting for all test events pertaining to SOF efforts. Execute ESB 4 SOF PDT&T and complete final reporting. FY 2019 Base Plans: N/A FY 2019 OCO Plans: N/A FY 2018 to FY 2019 Increase/Decrease Statement: FY 18 to FY 19 decrease reflects completion of ESB testing events.												
Accomplishments/Planned Programs Subtotals								2.198	3.880	3.111	0.000	3.111
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• OPN 0900: DDG Mod	429.614	603.355	487.999	-	487.999	681.567	584.972	911.570	1,057.869	Continuing	Continuing	

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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			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2019</u>	<u>FY 2019</u>	<u>FY 2019</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Complete</u>	<u>Total Cost</u>
• OPN 0960: CG Mod	319.920	306.050	276.446	-	276.446	302.185	221.839	139.942	26.378	2.529	4,164.807
Remarks											
D. Acquisition Strategy											
Continuing systems and software development for both development models and production machinery control units at Land Based Engineering Sites.											
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.											
ESB:											
Completion of Post PSA Certification Testing including Dynamic Interface Testing.											
Task Force Cyber Awareness (TFCA):											
NAVSEA Boundary Defense Capability.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DON Energy Initiative - OEM	C/FPIF	L-3 Maritime Systems : Leesburg, VA	34.857	0.000		0.000		0.000		-		0.000	0.000	34.857	-
DON Energy Initiative	WR	NSWC/SSES : Philadelphia, PA	3.629	0.000		0.000		0.000		-		0.000	0.000	3.629	-
Engineering Development and Design	Various	COTF/NAVAIR/NSWCCD/NSWCDD/NSWCPC/NSWCPCPD/NSWCSSSES : DC/MD/PA/CA	1.085	0.000		0.000		0.000		-		0.000	0.000	1.085	-
Preliminary and Contract Design	C/FPIF	NASSCO : San Diego, CA	6.500	0.000		0.000		0.000		-		0.000	0.000	6.500	-
Hybrid Electric Drive	C/CPIF	L-3 Maritime Systems : Leesburg, VA	6.911	0.000		0.000		0.000		-		0.000	0.000	6.911	-
Hybrid Electric Drive	C/CPAF	Rolls Royce : Walpole, MA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
Hybrid Electric Drive	C/CR	General Atomics : San Diego, CA	0.040	0.000		0.000		0.000		-		0.000	0.000	0.040	-
Hybrid Electric Drive	C/CPAF	Herren Engineering : Alexandria, VA	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	-
Hybrid Electric Drive	C/CPAF	Syntek : Arlington, VA	0.099	0.000		0.000		0.000		-		0.000	0.000	0.099	-
Hybrid Electric Drive	WR	NSWC/SSES : Philadelphia, PA	0.750	0.000		0.000		0.000		-		0.000	0.000	0.750	-
Hybrid Electric Drive	TBD	Not Specified : Not Specified	8.500	0.000		0.000		0.000		-		0.000	0.000	8.500	-
Subtotal			80.484	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

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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			
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDGM Program/ Engineering Spt	Various	SUPSHIP/BATH : Bath, ME	3.331	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPAF	CSC/BAE : Hampton, VA	4.713	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	WR	SPAWARSSYSCEN : Charleston, SC	2.004	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CGM Program / Engineering Spt	WR	NRL : Washington, DC	0.617	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CGM Program / Engineering Spt	C/CPAF	JJMA/ALION : Washington, DC	2.947	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPAF	Lockheed Martin : Moorestown, NJ	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
DDG/CGM Program / Engineering Spt	WR	NSWC/PHD : Port Hueneme, CA	2.889	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Logistics Support	C/CPFF	CSC : Washington DC	0.085	0.000		0.000		0.000		-		0.000	0.000	0.085	-
CGM/DDG Program / Engineering Spt	WR	COMOPTEVFOR : Norfolk, VA	0.420	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDGM/HED Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	4.900	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDGM Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	4.455	0.227	Jan 2017	0.527	Jan 2018	0.733	Jan 2019	-		0.733	0.000	5.942	-
HED Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HED	C/CPAF	L-3 Maritime Systems : Leesburg, VA	1.048	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CG Program / Engineering Spt	WR	NSWC/BETHESDA : Bethesda, MD	9.615	0.025	Jan 2017	0.329	Jan 2018	0.457	Jan 2019	-		0.457	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 Program / Engineering Spt	Various	SUPSHIP/ PASCAGOULA : Pascagoula, MS	4.430	0.306	Aug 2017	0.180	Jun 2018	0.250	Jun 2019	-		0.250	Continuing	Continuing	Continuing
CG Program / Engineering Spt	WR	NSWC/SSSES : Philadelphia, PA	0.341	0.340	Jan 2017	0.880	Jan 2018	1.223	Jan 2019	-		1.223	0.000	2.784	-
DDG/CGM Program / Engineering Spt	C/CPFF	John Hopkins University : Laurel, MD	0.000	1.300	Apr 2017	0.322	Apr 2018	0.448	Apr 2019	-		0.448	0.000	2.070	-
ESB	Various	TBD : TBD	3.663	0.000		1.642	Jan 2018	0.000		-		0.000	0.000	5.305	-
NAVSEA Boundary Defense Capability	Various	TBD : TBD	1.995	0.000		0.000		0.000		-		0.000	0.000	1.995	-
Subtotal			52.329	2.198		3.880		3.111		-		3.111	Continuing	Continuing	N/A
Remarks Award dates for ESB reflects initial date of incremental funding execution in support of ESB SOF MOD backfit efforts.															
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			132.813	2.198		3.880		3.111		-		3.111	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy																Date: February 2018																												
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																								
Proj 1803										FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023										
										1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q							
Ship Contract Design																																												
										CGM Baseline 4 Mod Design																																		
										CG Class Design																																		
										DDG Technical Insertion 16 Mod Design																																		
										DDG FLT IIA Mod Design																																		
										CG Deliveries (CG 59,61,62,63-73)																																		
										DDGM Deliveries (DDG 61,80,81,84,87																																		
										DDG Class Design																																		
										ESB SOF PDT&T (incl Dynamic Interface Testing)																																		
														ESB FOT&E																														
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2019PB - 0604567N - 1803

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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>				
Ship Contract Design: CGM Baseline 4 Mod Design	1	2017	4	2020
Ship Contract Design: CG Class Design	1	2017	4	2023
Ship Contract Design: DDG Technical Insertion 16 Mod Design	1	2017	4	2019
Ship Contract Design: DDG FLT IIA Mod Design	1	2017	2	2019
Ship Contract Design: CG Deliveries (CG 59,61,62,63-73)	1	2017	4	2021
Ship Contract Design: DDGM Deliveries (DDG 61,80,81,84,87)	1	2017	3	2021
Ship Contract Design: DDG Class Design	1	2017	4	2023
Ship Contract Design: ESB SOF PDT&T (incl Dynamic Interface Testing)	1	2017	2	2018
Ship Contract Design: ESB FOT&E	1	2018	2	2018

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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			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
2465: LHA(R) FLT Design and Total Ship Integration	250.257	9.486	8.169	6.841	-	6.841	9.876	5.949	6.072	6.204	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 333												
A. Mission Description and Budget Item Justification <p>This project provides the contract design, development and testing efforts for the Amphibious Assault Ship Replacement Program LHA(R). 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 (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).</p>												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	
Title: LHA (R) FLT 0 Design and Total Ship Integration - LHA 6							7.022	1.295	1.064	0.000	1.064	
Articles:							-	-	-	-	-	
FY 2018 Plans: LHA 6 Complete Final Vulnerability Assessment Report (VAR). LHA 6 Complete Operational Test and Evaluation (OT&E). LHA 6 Continue LHA Class Reliability Maintainability and Availability (RMA).												
FY 2019 Base Plans: - LHA 6 Complete LHA Class Reliability Maintainability and Availability (RMA).												
FY 2019 OCO Plans: N/A												
FY 2018 to FY 2019 Increase/Decrease Statement:												

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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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>****Note - Decrease from FY 2018 to FY 2019 is a result of planned completion of the Final Vulnerability Assessment Report (VAR) in FY18 Q3. As well as the shifting of the Follow-on Operational Test and Evaluation from FY 2019 to FY 2020.</p> <p>Title: LHA (R) FLT 1 Design and Total Ship Integration - LHA 8</p> <p align="right">Articles:</p> <p>FY 2018 Plans: 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).</p> <p>FY 2019 Base Plans: 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).</p> <p>FY 2019 OCO Plans: N/A</p> <p>FY 2018 to FY 2019 Increase/Decrease Statement: Decrease from FY18 to FY19 is a result of reduced requirements in the Live Fire Test and Evaluation (LFT&E) for the Enterprise Air Search Radar (EASR) Land Based Test System, and planned reductions in Verification, Validation & Accreditation (VV&A) and Vulnerability Assessment Report (VAR) efforts in the LHA 8 FLT1.</p>	2.464	6.874	5.777	0.000	5.777
	-	-	-	-	-
Accomplishments/Planned Programs Subtotals	9.486	8.169	6.841	0.000	6.841

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• SCN/3041: LHA (R) Ships	1,617.719	1,725.127	25.100	-	25.100	0.000	0.000	0.000	191.892	0.000	10,482.184
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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>
<p><u>D. Acquisition Strategy</u></p> <p>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.</p> <p>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.</p> <p>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 was awarded on 16 June 2017. The Planning, Advanced Engineering and Procurement of Long Lead Time Material (LLTM) efforts were subsumed into this Fixed Price Incentive, Firm Target DD&C contract option.</p> <p>LHA 9 Acquisition Strategy is under review.</p> <p><u>E. Performance Metrics</u></p> <p>Successfully achieve Initial Operational Capability, successfully complete Operational Test and Milestone Reviews.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	44.087	0.000		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			151.801	0.000		0.000		0.000		-		0.000	0.000	151.801	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	2.300	Dec 2016	4.251	Dec 2017	3.316	Dec 2018	-		3.316	Continuing	Continuing	Continuing
Subtotal			0.000	2.300		4.251		3.316		-		3.316	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	4.409	0.150	Dec 2016	0.000		0.000		-		0.000	0.000	4.559	-
Operational Test & Evaluation	WR	OPTEVFOR/ MCOTEA/NAVSUP : Norfolk, VA/ Quantico, VA	17.978	3.403	Dec 2016	1.045	Dec 2017	1.029	Dec 2018	-		1.029	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	WR	NSWC : Various	59.125	3.547	Dec 2016	2.785	Dec 2017	2.408	Dec 2018	-		2.408	Continuing	Continuing	Continuing
Follow-on Operational Test and Evaluation	WR	OPTEVFOR / MCOTEA : Norfolk, VA / Quantico, VA	0.000	0.000		0.000		0.000	Dec 2018	-		0.000	0.000	0.000	-
Subtotal			81.512	7.100		3.830		3.437		-		3.437	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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			
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	16.201	0.046	Dec 2016	0.068	Dec 2017	0.083	Dec 2018	-		0.083	Continuing	Continuing	Continuing
Travel	Various	Navsea Travel : Washington, DC	0.732	0.040	Dec 2016	0.020	Dec 2017	0.005	Dec 2018	-		0.005	Continuing	Continuing	Continuing
Defense Acquisition Workforce	Various	Various : Various	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
Subtotal			16.944	0.086		0.088		0.088		-		0.088	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			250.257	9.486		8.169		6.841		-		6.841	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy

Date: February 2018

Appropriation/Budget Activity

1319 / 5

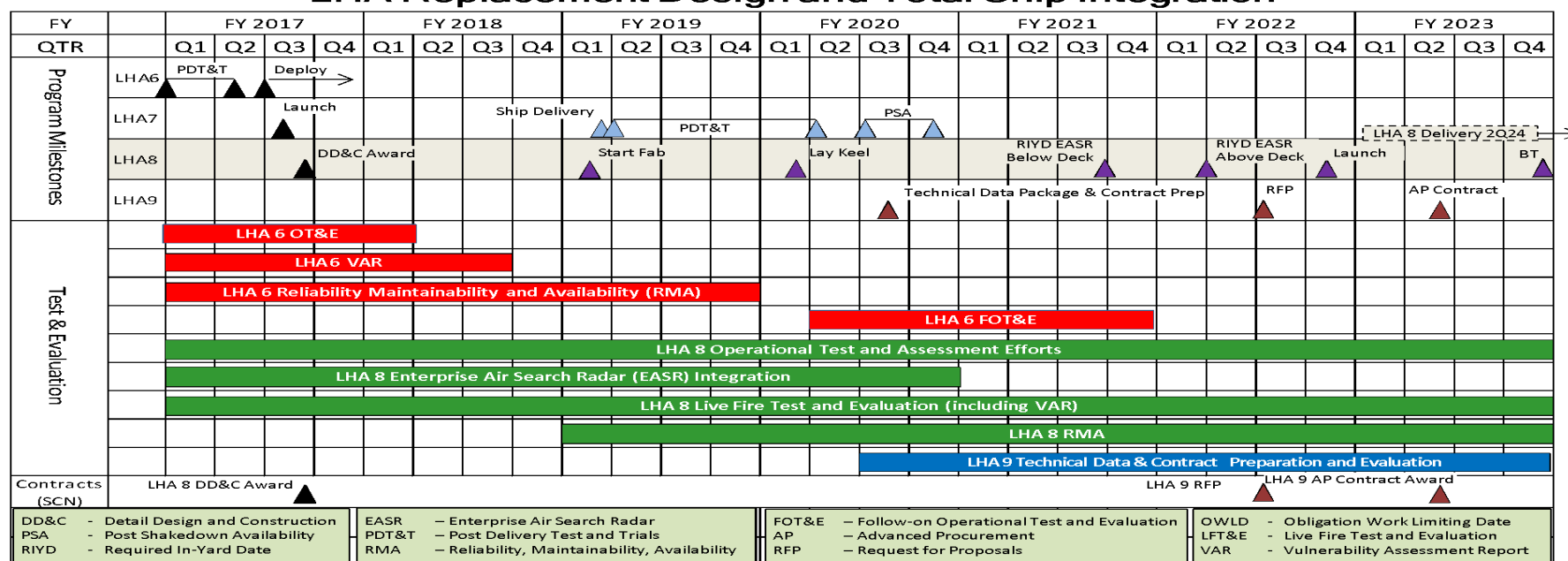
R-1 Program Element (Number/Name)

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

Project (Number/Name)

2465 / LHA(R) FLT Design and Total Ship Integration

LHA Replacement Design and Total Ship Integration



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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
<i>Proj 2465</i>				
LHA 6 Reliability Maintainability and Availability (RMA)	1	2017	4	2019
LHA 8 Enterprise Air Search Radar (EASR) Integration	1	2017	4	2020
LHA 8 Reliability Maintainability and Availability (RMA)	1	2019	4	2023
LHA 8 Vulnerability Assessment Report	1	2017	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3108: CVN 80 Total Ship Integration	0.977	29.257	33.195	31.563	-	31.563	27.423	25.726	26.239	26.787	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)							FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	
Title: Enterprise Radar Suite (ERS) Articles:							8.255	9.265	8.620	0.000	8.620	
							-	-	-	-	-	
FY 2018 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 Government Furnished Information (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 TEMP: platform impacts & updates to the Test												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>& Evaluation Master Plan (TEMP); cybersecurity analysis; Information Support Plan (ISP) updates supporting Net Ready Key Performance Parameter (KPP). Continue conducting Reliability, Maintainability and 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, shipbuilder and Government. Participate in Preliminary Design Review.</p> <p>FY 2019 Base Plans: Continue conducting / preparing risk reduction studies / reports, to include management of a risk / opportunity database to support 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 suite. Continue analyzing / performing integrated topside design due to new radar sensor suite. 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 TEMP; platform impacts & updates to TEMP; cybersecurity analysis; and 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 and cost estimates. Continue operation of the Integrated Product Team to include vendor, ship builder and Government. Participate in Preliminary and Critical Design Reviews of Warfare System elements.</p> <p>FY 2019 OCO Plans: N/A</p> <p>FY 2018 to FY 2019 Increase/Decrease Statement: Decrease due to service wide funding adjustments.</p>						
<p>Title: CVN 78 Class Design for Affordability (DFA)</p> <p>Articles:</p> <p>FY 2018 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</p>		21.002 -	23.930 -	22.943 -	0.000 -	22.943 -

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy									Date: February 2018			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>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.</p> <p>FY 2019 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.</p> <p>FY 2019 OCO Plans: N/A</p> <p>FY 2018 to FY 2019 Increase/Decrease Statement: Decrease due to planned phasing of work efforts.</p>												
Accomplishments/Planned Programs Subtotals								29.257	33.195	31.563	0.000	31.563
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• SCN / 2001: Carrier Replacement Program	2,626.567	4,441.772	1,598.181	-	1,598.181	2,146.535	3,239.606	2,910.491	3,378.355	10,602.689	50,900.224	
• SCN / 5300: Completion of Prior Year Shipbuilding Programs	0.000	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,394.860	
• RD TEN / 0604112N: Project Units 2208, 4004, C295	69.184	83.935	58.121	-	58.121	57.236	43.713	30.904	39.306	Continuing	Continuing	
• OMN / 1B2B: CVN 78 Ford Class Training and Sustainment (12BJ0)	17.536	14.008	9.043	-	9.043	8.150	6.346	6.907	7.054	Continuing	Continuing	
• RD TEN / 0604501N: Project Unit 3236 Advanced Radar Technology	53.331	68.665	25.257	-	25.257	2.141	0.000	0.000	0.000	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018	
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPN / 5664: Surface Training Equipment	4.490	12.010	7.942	-	7.942	0.994	4.965	2.964	3.023	Continuing	Continuing
• OMN / 1B1B: Mission and Other Ship Operations (11B30)	24.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.000
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 and CVN 79 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, 3) Development and maintenance of new CVN Warfare System architecture database, and 4) Development of FORD Class affordability initiatives to incorporate into the CVN 80 design and CVN 79 production as applicable.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	0.300	17.254	Nov 2016	17.044	Nov 2017	17.540	Nov 2018	-		17.540	Continuing	Continuing	Continuing
Advanced Design & Development	C/CPFF	GRYPHON (SEI&T) : IN	0.000	3.910	Nov 2016	0.000		2.500	Nov 2018	-		2.500	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC DAHLGREN : VA	0.151	2.536	Nov 2016	5.125	Nov 2017	3.700	Nov 2018	-		3.700	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC CARDEROCK : MD	0.000	1.485	Nov 2016	2.750	Nov 2017	1.200	Nov 2018	-		1.200	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NSWC PHILADELPHIA : PA	0.000	0.000		1.125	Nov 2017	0.500	Nov 2018	-		0.500	Continuing	Continuing	Continuing
Advanced Design & Development	C/CPFF	NAVSEA SEAPORT : DC	0.000	2.162	Nov 2016	3.000	Jan 2018	2.353	Dec 2018	-		2.353	Continuing	Continuing	Continuing
Advanced Design & Development	C/BA	NAWCAD PAX RIVER : MD	0.000	0.806	Nov 2016	0.500	Nov 2017	1.305	Nov 2018	-		1.305	Continuing	Continuing	Continuing
Advanced Design & Development	WR	NAWCAD LAKEHURST : NJ	0.313	0.000		0.000		0.000		-		0.000	0.000	0.313	-
Advanced Design & Development	WR	SPAWAR : CA	0.190	0.000		0.500	Nov 2017	0.490	Nov 2018	-		0.490	Continuing	Continuing	Continuing
Advanced Design & Development	Various	NSRP : VARIOUS	0.000	0.000		0.835	Dec 2017	0.835	Dec 2018	-		0.835	Continuing	Continuing	Continuing
Advanced Design & Development	Various	MISCELLANEOUS : VARIOUS	0.023	1.104	Nov 2016	2.316	Nov 2017	1.140	Nov 2018	-		1.140	Continuing	Continuing	Continuing
Subtotal			0.977	29.257		33.195		31.563		-		31.563	Continuing	Continuing	N/A
Remarks															
-- HII will continue to further identify Design for Affordability opportunities to decrease the CVN 78 class ship construction acquisition cost and facilitate implementation of developed processes and tools. HII will also continue to support the research of Enterprise Radar Suite (ERS) topside integration efforts.															
-- The System Engineering, Integration, and Test contractor is now Gryphon, Inc. This function was previously served by Raytheon. Gryphon will be conducting analysis and development support for the warfare system architecture design and integration efforts as well as ERS integration efforts.															
-- NAWCAD Pax River will be conducting analysis and support for the TPX-42 and Identification Friend or Foe (IFF) architecture design and integration efforts to support the new Enterprise Air Surveillance Radar (EASR) system.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy										Date: February 2018			
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>			
	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.977	29.257		33.195		31.563		-		31.563	Continuing	Continuing	N/A
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy

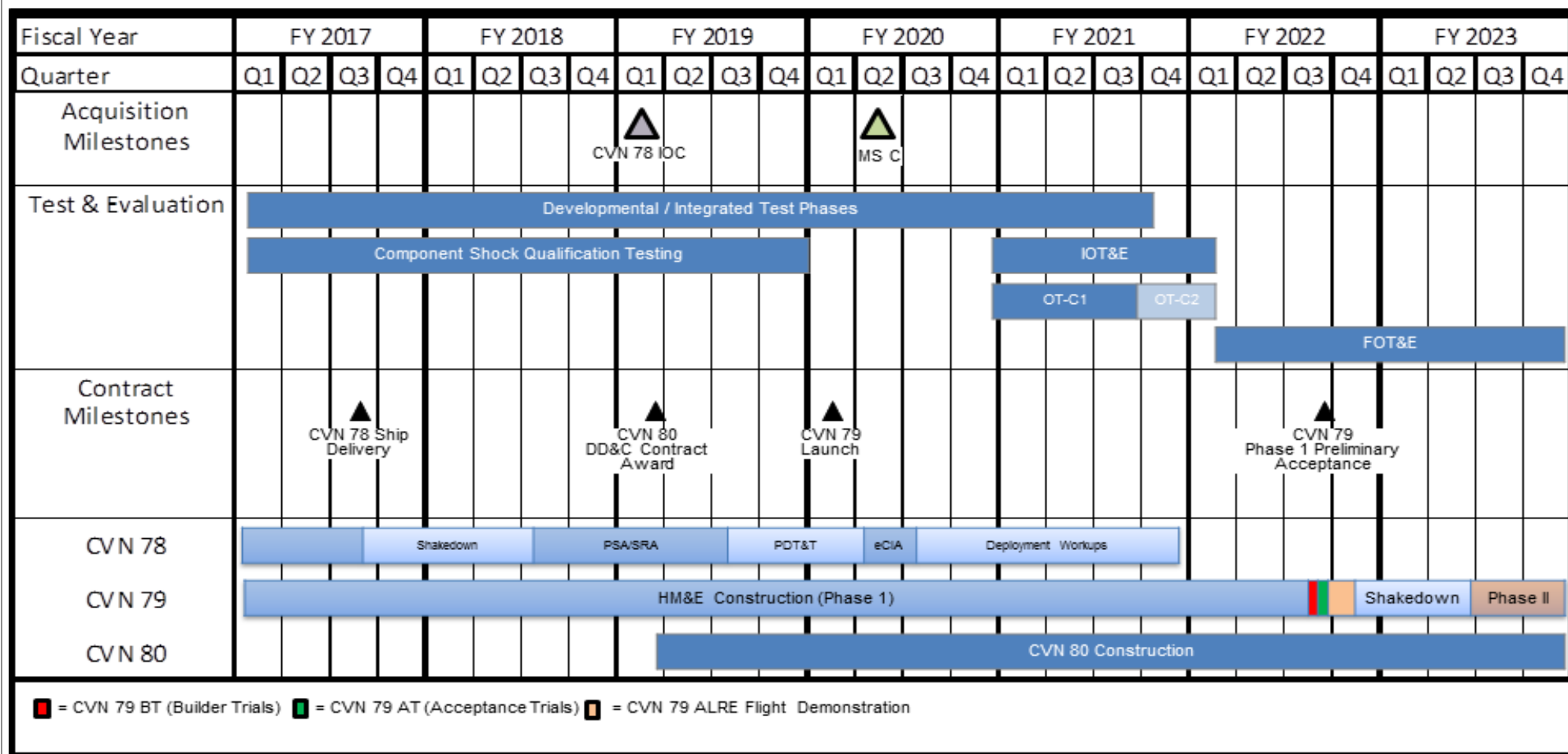
Date: February 2018

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

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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
<i>Proj 3108</i>				
Initial Operational Capability	1	2019	1	2019
Milestone C	2	2020	2	2020
Component Shock Qualification Testing	1	2017	4	2019
Initial Operational Test & Evaluation	4	2020	1	2022
CVN 80 Construction Contract Award	1	2019	1	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3179: CVN-79 Total Ship Integration	185.317	16.663	16.953	14.536	-	14.536	14.976	15.290	15.582	15.913	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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: CVN-79 Total Ship Integration								16.663	16.953	14.536	0.000	14.536
								Articles: -	-	-	-	-
FY 2018 Plans:												
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.												
FY 2019 Base Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018	
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) 3179 / <i>CVN-79 Total Ship Integration</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
				FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total			
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 and initial operations. Continue to manage fact-of-life obsolescence changes on government-furnished equipment systems, challenges encountered on contractor-furnished equipment and material analysis. Continue to 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 and refine the strategy to efficiently transition from Phase I construction to Phase II and final delivery of CVN 79. FY 2019 OCO Plans: N/A FY 2018 to FY 2019 Increase/Decrease Statement: Decrease due to service wide funding adjustments.											
Accomplishments/Planned Programs Subtotals				16.663	16.953	14.536	0.000	14.536			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• SCN / 2001: <i>Carrier Replacement Program</i>	2,626.567	4,441.772	1,598.181	-	1,598.181	2,146.535	3,239.606	2,910.491	3,378.355	10,602.689	50,900.224
• SCN / 5300: <i>Completion of Prior Year Shipbuilding Programs</i>	0.000	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,394.860
• RDTEN / 0604112N: <i>Project Units 2208, 4004</i>	69.184	83.935	58.121	-	58.121	57.236	43.713	30.904	39.306	Continuing	Continuing
• OMN / 1B2B: <i>CVN 78 Ford Class Training and Sustainment (12BJ0)</i>	17.536	14.008	9.043	-	9.043	8.150	6.346	6.907	7.054	Continuing	Continuing
• OPN / 5664: <i>Surface Training Equipment</i>	4.490	12.010	7.942	-	7.942	0.994	4.965	2.964	3.023	Continuing	Continuing
• OMN / 1B1B: <i>Mission and Other Ship Operations (11B30)</i>	24.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.000
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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) 3179 / <i>CVN-79 Total Ship Integration</i>
<p><u>D. Acquisition Strategy</u></p> <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> <p><u>E. Performance Metrics</u></p> <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: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	91.421	6.215	Nov 2016	7.480	Nov 2017	2.094	Nov 2018	-		2.094	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC CARDEROCK : MD	14.713	0.200	Nov 2016	0.616	Nov 2017	1.170	Nov 2018	-		1.170	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC DAHLGREN : VA	12.207	1.700	Oct 2016	2.273	Nov 2017	2.627	Nov 2018	-		2.627	Continuing	Continuing	Continuing
Total Ship Integration	WR	NSWC PHILADELPHIA : PA	1.131	0.000		0.625	Nov 2017	1.170	Nov 2018	-		1.170	Continuing	Continuing	Continuing
Total Ship Integration	WR	NAWCAD PAX RIVER : MD	5.527	1.268	Oct 2016	0.750	Oct 2017	1.153	Nov 2018	-		1.153	Continuing	Continuing	Continuing
Total Ship Integration	WR	SPAWAR : SD	4.491	0.300	Nov 2016	0.295	Nov 2017	0.749	Nov 2018	-		0.749	Continuing	Continuing	Continuing
Total Ship Integration	C/CPFF	NAVSEA SEAPORT : DC	24.032	1.950	Dec 2016	2.159	Dec 2017	2.467	Dec 2018	-		2.467	Continuing	Continuing	Continuing
Total Ship Integration	C/CPAF	RAYTHEON : MA	9.783	1.815	Dec 2016	1.000	Dec 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Total Ship Integration	WR	SSC CHARLESTON : SC	0.847	0.000		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	13.926	1.670	Dec 2016	0.835	Dec 2017	0.835	Dec 2018	-		0.835	Continuing	Continuing	Continuing
Total Ship Integration	C/CPFF	GRYPHON (SEI&T) : VA	0.000	0.000		0.000		0.780	Dec 2018	-		0.780	Continuing	Continuing	Continuing
Subtotal			179.523	15.118		16.033		13.045		-		13.045	Continuing	Continuing	N/A
Remarks															
-- The System Engineering, Integration, and Test contractor is now Gryphon, Inc. This function was previously served by Raytheon. The Gryphon team will be conducting analysis and development support for the warfare system architecture design and integration efforts. It will also address obsolescence issues, critical survivability shortfalls as identified in CVN 78 Class testing and future requirements and technologies.															
-- Cost growth for NSWC Carderock and NSWC Philadelphia are due to addressing issues as a result of CVN 78 testing and initial operations.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	0.576	1.188	Nov 2016	0.569	Nov 2017	1.137	Nov 2018	-		1.137	Continuing	Continuing	Continuing
Developmental Test & Evaluation	TBD	MISCELLANEOUS : TBD	0.017	0.127	Nov 2016	0.125	Dec 2017	0.124	Dec 2018	-		0.124	Continuing	Continuing	Continuing
Operational Test & Evaluation	C/CPFF	FLC : VA	0.176	0.230	Dec 2016	0.226	Nov 2017	0.230	Nov 2018	-		0.230	Continuing	Continuing	Continuing
Subtotal			5.613	1.545		0.920		1.491		-		1.491	Continuing	Continuing	N/A
Remarks															
-- Cost growth for NSWC Dahlgren is due to increased T&E cyber-security efforts for CVN 79.															
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	0.000		0.000		0.000		-		0.000	0.000	0.181	-
Subtotal			0.181	0.000		0.000		0.000		-		0.000	0.000	0.181	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			185.317	16.663		16.953		14.536		-		14.536	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy

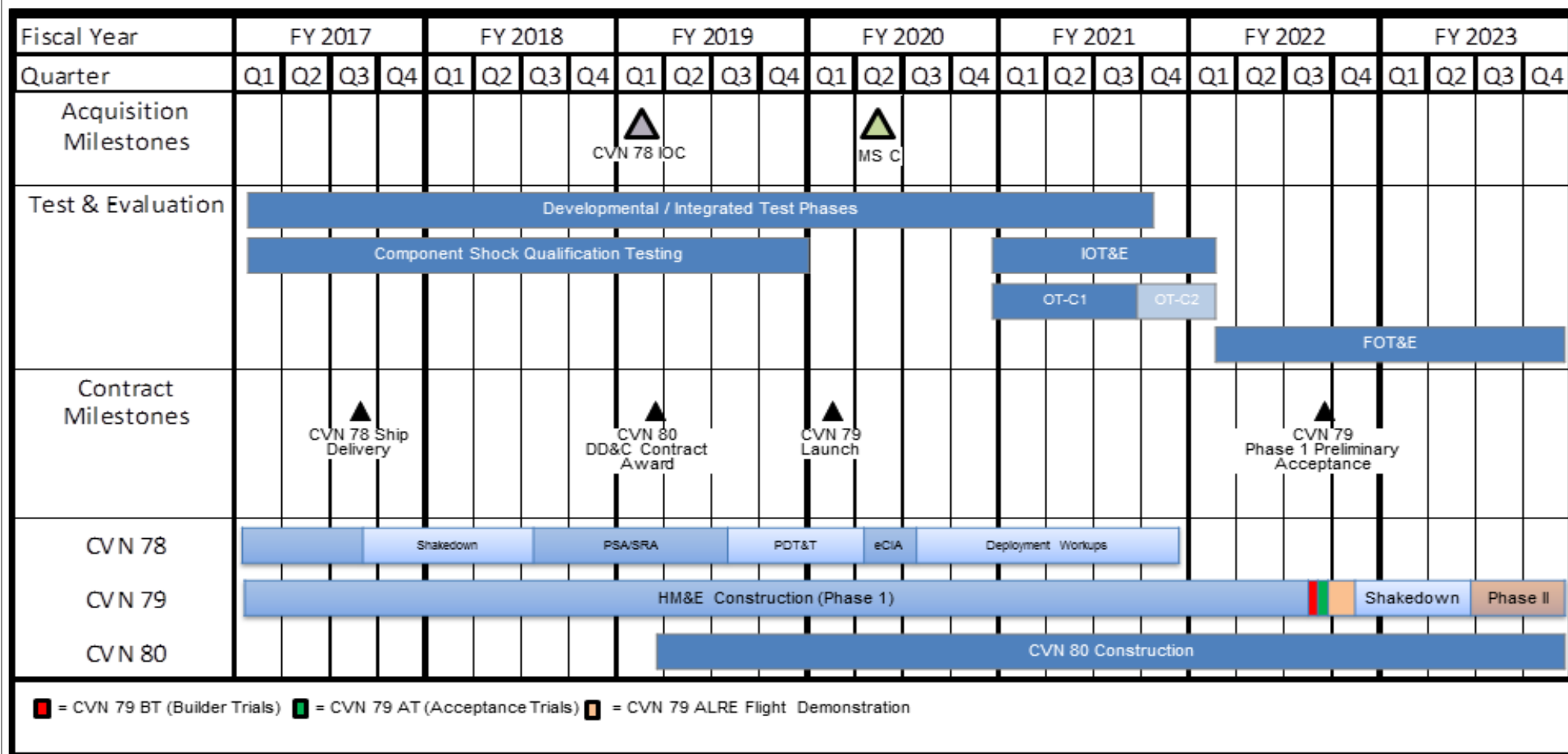
Date: February 2018

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

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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) 3179 / <i>CVN-79 Total Ship Integration</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3179</i>				
Initial Operational Capability	1	2019	1	2019
Milestone C	2	2020	2	2020
Component Shock Qualification Testing	1	2017	4	2019
Initial Operational Test & Evaluation	4	2020	1	2022
CVN 80 Construction Contract Award	1	2019	1	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3369: Hybrid Electric Drive	11.531	1.691	0.986	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.208
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. The HED program has been truncated to two installations. The operational data collected from the two ships from a deployment cycle (usage/energy savings/efficiencies) will determine future installations.												
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 2018 Plans: Develop and test additional MCS software baselines. FY 2019 Base Plans: Program has been cancelled. FY 2019 OCO Plans: N/A FY 2018 to FY 2019 Increase/Decrease Statement: FY 18 to FY 19 decrease reflects cancellation of efforts after FY 18.								1.691	0.986	0.000	0.000	0.000
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								1.691	0.986	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018	
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			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2019</u>	<u>FY 2019</u>	<u>FY 2019</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Complete</u>	<u>Total Cost</u>
• OPN 0140: Hybrid Electric Drive (HED)	10.983	6.331	0.000	-	0.000	0.000	0.000	0.000	0.000	46.585	105.643
Remarks											
D. Acquisition Strategy											
The HED program has been truncated to two installations. The operational data collected from the two ships from a deployment cycle (usage/energy savings/ efficiencies) will determine future installations.											
E. Performance Metrics											
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-3, RDT&E Project Cost Analysis: PB 2019 Navy													Date: February 2018		
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			
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	3.137	0.000	Jan 2017	0.286	Jan 2018	0.000		-		0.000	0.000	3.423	-
Subtotal			3.137	0.000		0.286		0.000		-		0.000	0.000	3.423	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	7.769	1.691	Dec 2016	0.700	Dec 2017	0.000		-		0.000	0.000	10.160	-
HED - DON Energy Initiative -OEM	Various	SUPSHIP BATH : Bath, ME	0.325	0.000		0.000		0.000		-		0.000	0.000	0.325	-
HED - DON Energy Initiative -OEM	Various	SYNTEK TECHNOLOGIES : Arlington, VA	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Subtotal			8.394	1.691		0.700		0.000		-		0.000	0.000	10.785	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			11.531	1.691		0.986		0.000		-		0.000	0.000	14.208	N/A
Remarks															

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

R-1 Line #141

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3369</i>				
Hybrid Electric Drive: Hybrid Electric Drive: Hybrid Electric Drive	1	2017	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3374: MPF(F)	0.000	0.679	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.679
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 2018 (\$0.468M) and FY 2016 and prior year efforts were financed under the National Sealift Defense Fund (NDSF) BA 04, Project 3110 (Maritime Prepositioning Force (Future)).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Engineering and Acquisition Support	0.679	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: Funded in NDSF; testing completes in FY18.					
FY 2019 Base Plans: N/A					
FY 2019 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.679	0.000	0.000	0.000	0.000

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

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• NDSF/0408042N/3110: MPFF	0.000	0.468	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.468
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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)
D. Acquisition Strategy 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 five (one each in FY12, FY14, FY16, FY19, and FY20) Expeditionary Sea Base (ESB, formerly MLP AFSB Variant configurations).		
E. Performance Metrics Annual Program Review		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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)			

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	COTF : Norfolk VA	0.000	0.350	Jan 2017	0.000		0.000		-		0.000		0.000	0.350	-
Developmental Test & Evaluation	WR	CSC : Washington DC	0.000	0.150	Jan 2017	0.000		0.000		-		0.000		0.000	0.150	-
Live Fire Test & Evaluation	WR	CSC : Washington DC	0.000	0.179	Jan 2017	0.000		0.000		-		0.000		0.000	0.179	-
Subtotal			0.000	0.679		0.000		0.000		-		0.000		0.000	0.679	N/A

Remarks Award dates reflect initial award of incremental execution.																
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	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.679		0.000		0.000		-		0.000	0.000	0.679	N/A

Remarks																
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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy										Date: February 2018									
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)									

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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 3374																												
TESTING: ESB DT&E																												
TESTING: ESB IT&E																												
TESTING: ESB OT&E																												
TESTING: ESB LFT&E																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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) 3374 / MPF(F)	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3374</i>				
TESTING: ESB DT&E	1	2017	4	2017
TESTING: ESB IT&E	1	2017	3	2017
TESTING: ESB OT&E	1	2017	4	2017
TESTING: ESB LFT&E	1	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
4007: CVN 21 LFT&E	65.822	3.629	3.983	4.011	-	4.011	4.167	4.311	4.405	4.500	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 18.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: CVN 21 LFT&E Articles: FY 2018 Plans: Continue conducting Underwater Explosive analyses on the CVN 78 full-ship structural Finite Element Model (FEM) in support of the Analytical Bridge Study task. Begin development of the final Survivability Assessment Report (SAR). 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. FY 2019 Base Plans: Complete the analyses for the analytical bridge studies and complete the report. Continue planning for the CVN 78 Total Ship Survivability Trial (TSST) with the development of the TSST drill guides and implementation sheets. Perform a cold check on CVN 78 in support of TSST planning. Continue analyses and documentation for the final SAR. FY 2019 OCO Plans:								3.629	3.983	4.011	0.000	4.011
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy				Date: February 2018				
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		

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: Increase due to inflation.					
Accomplishments/Planned Programs Subtotals	3.629	3.983	4.011	0.000	4.011

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SCN / 2001: Carrier Replacement Program	2,626.567	4,441.772	1,598.181	-	1,598.181	2,146.535	3,239.606	2,910.491	3,378.355	10,602.689	50,900.224
• SCN / 5300: Completion of Prior Year Shipbuilding Programs	0.000	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,394.860
• RDTEN / 0604112N: Project Units 2208, 4004	69.184	83.935	58.121	-	58.121	57.236	43.713	30.904	39.306	Continuing	Continuing
• OMN / 1B2B: CVN 78 Ford Class Training and Sustainment (12BJ0)	17.536	14.008	9.043	-	9.043	8.150	6.346	6.907	7.054	Continuing	Continuing
• OPN / 5664: Surface Training Equipment	4.490	12.010	7.942	-	7.942	0.994	4.965	2.964	3.023	Continuing	Continuing
• OMN / 1B1B: Mission and Other Ship Operations (11B30)	24.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.000
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 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>											

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 / <i>CVN 21 LFT&E</i>
E. Performance Metrics <p>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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	55.457	1.816	Nov 2016	3.153	Nov 2017	2.897	Nov 2018	-		2.897	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	C/CPAF	HII : VA	10.069	1.751	Nov 2016	0.750	Nov 2017	0.950	Nov 2018	-		0.950	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	WR	NSWC Dahlgren : VA	0.286	0.062	Nov 2016	0.080	Nov 2017	0.082	Nov 2018	-		0.082	Continuing	Continuing	Continuing
Live Fire Test & Evaluation	C/CPFF	NAVSEA SEAPORT : DC	0.000	0.000		0.000		0.082	Dec 2018	-		0.082	0.000	0.082	-
Subtotal			65.812	3.629		3.983		4.011		-		4.011	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			65.822	3.629		3.983		4.011		-		4.011	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy

Date: February 2018

Appropriation/Budget Activity

1319 / 5

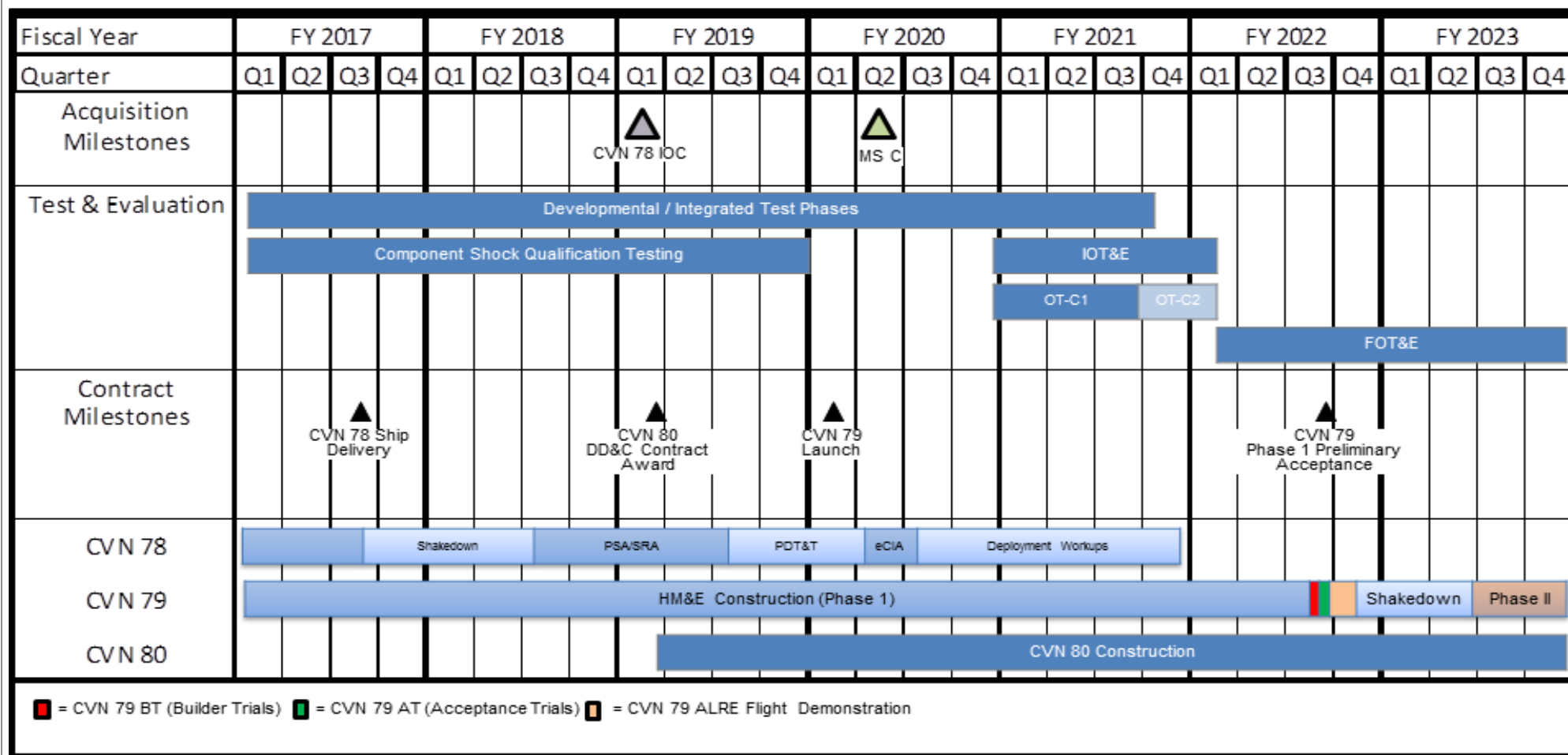
R-1 Program Element (Number/Name)

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

Project (Number/Name)

4007 / CVN 21 LFT&E

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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
<i>Proj 4007</i>				
Initial Operational Capability	1	2019	1	2019
Milestone C	2	2020	2	2020
Component Shock Qualification Testing	1	2017	4	2019
Initial Operational Test & Evaluation	4	2020	1	2022
CVN 80 Construction Contract Award	1	2019	1	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	19.343	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.343
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification This project provides for CVN 78 Class cost reduction activities.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018			
Congressional Add: CVN Cost Reduction Activities								19.343	0.000			
FY 2017 Accomplishments: Discover and assess CVN 78 Class affordability initiatives. Develop cost-saving initiatives, game changers, business case analyses, and affordability 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. Conduct or support feasibility and tradeoff studies on shipbuilder processes. Conduct or support feasibility and tradeoff studies on new and modified shipboard systems and equipment. Studies shall include engineering analyses, including Key Performance Parameter (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.												
FY 2018 Plans: N/A												
Congressional Adds Subtotals								19.343	0.000			
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• SCN / 2001: Carrier Replacement Program	2,626.567	4,441.772	1,598.181	-	1,598.181	2,146.535	3,239.606	2,910.491	3,378.355	10,602.689	50,900.224	
• SCN / 5300: Completion of Prior Year Shipbuilding Program	0.000	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,394.760	

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018	
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)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• RD TEN / 0604112N: Project Units 2208, 4004	69.184	83.935	58.121	-	58.121	57.236	43.713	30.904	39.306	Continuing	Continuing
• OMN / 1B2B: CVN 78 Ford Class Training and Sustainment	17.536	14.008	9.043	-	9.043	8.150	6.346	6.907	7.054	Continuing	Continuing
• OPN / 5664: Surface Training Equipment	4.490	12.010	7.942	-	7.942	0.994	4.965	2.964	3.023	Continuing	Continuing
• OMN / 1B1B: Mission and Other Ship Operations (11B30)	24.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.000
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 and CVN 79 to gain efficiencies during the CVN 80 Construction Preparation and Construction periods.											
E. Performance Metrics											
Development of FORD Class affordability initiatives to incorporate into the CVN 80 design and CVN 79 production as applicable.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy												Date: February 2018			
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			

Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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	0.000	16.000	Jul 2017	0.000		0.000		-		0.000	0.000	16.000	-
Total Ship Integration	C/CPFF	NAVSEA SEAPORT : DC	0.000	1.717	Aug 2017	0.000		0.000		-		0.000	0.000	1.717	-
Total Ship Integration	WR	NSWC Carderock : MD	0.000	0.500	Jul 2017	0.000		0.000		-		0.000	0.000	0.500	-
Total Ship Integration	WR	NSWC Philadelphia : PA	0.000	0.296	Jul 2017	0.000		0.000		-		0.000	0.000	0.296	-
Total Ship Integration	TBD	Miscellaneous : Various	0.000	0.830	Sep 2017	0.000		0.000		-		0.000	0.000	0.830	-
Subtotal			0.000	19.343		0.000		0.000		-		0.000	0.000	19.343	N/A

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	19.343	0.000	0.000	-	0.000	0.000	19.343	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy

Date: February 2018

Appropriation/Budget Activity

1319 / 5

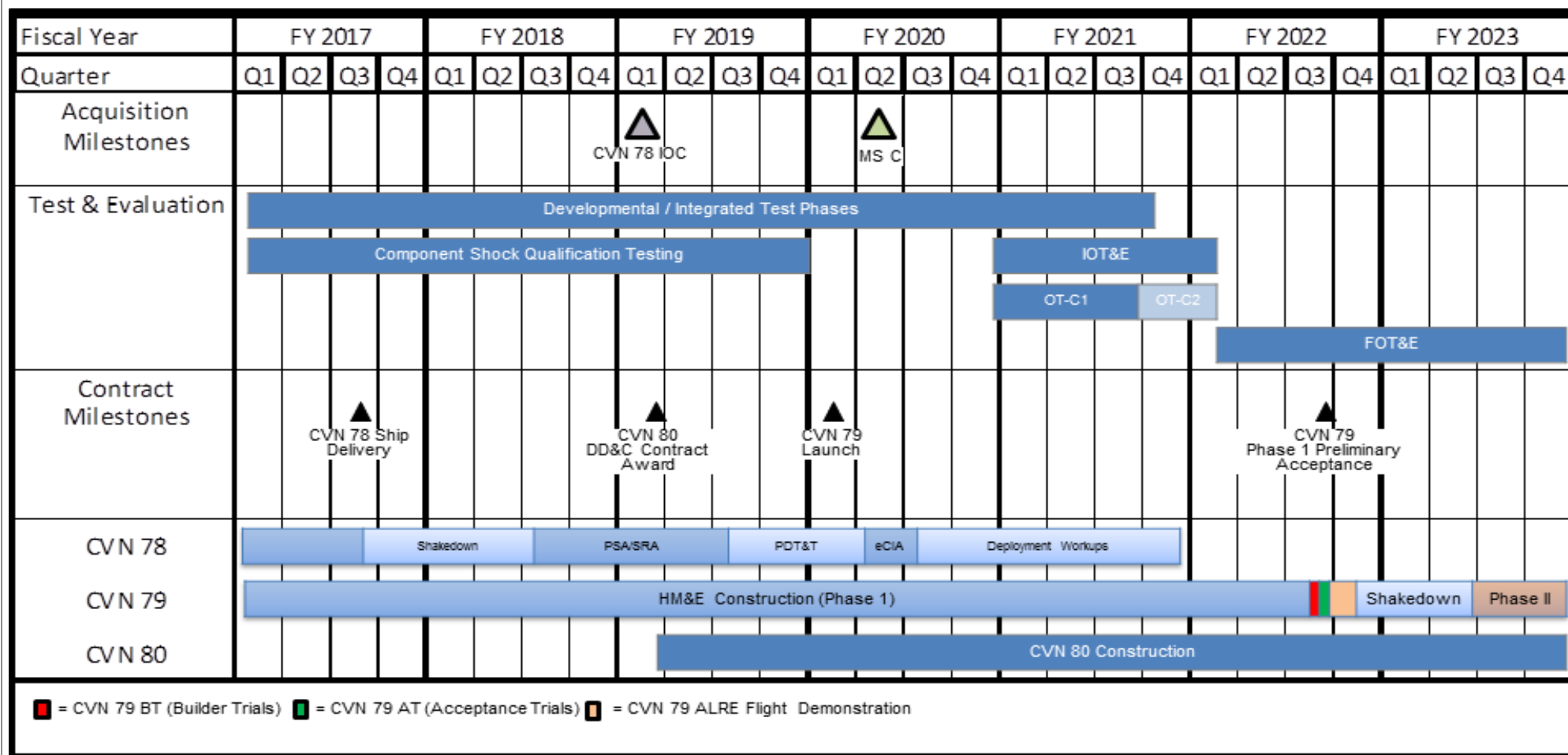
R-1 Program Element (Number/Name)

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

Project (Number/Name)

9999 / Congressional Adds

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy			Date: February 2018
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
<i>Proj 9999</i>				
Initial Operational Capability	1	2019	1	2019
Milestone C	2	2020	2	2020
Component Shock Qualification Testing	1	2017	4	2019
Initial Operational Test & Evaluation	4	2020	1	2022
CVN 80 Construction Contract Award	1	2019	1	2019