Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603564N *I Ship Prel Design & Feasibility Studies*							
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	17.097	18.369	13.348	69.084	-	69.084	75.480	75.544	55.217	21.810	Continuing	Continuing
0411: *Future Surface Combatant Concept Development*	0.000	0.000	0.000	46.550	-	46.550	53.160	51.050	45.530	11.930	Continuing	Continuing
3261: *TAGOS Design & Total Ship Integration*	0.000	7.050	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.050
3377: *T-ATS Ship Concept Development*	4.587	0.000	0.393	0.893	-	0.893	0.000	0.000	0.000	0.000	0.000	5.873
3389: *OPLOG IPT Development*	12.510	0.000	12.955	21.641	-	21.641	22.320	24.494	9.687	9.880	Continuing	Continuing
9999: *Congressional Adds*	0.000	11.319	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.319

Note

Project 0411 (Future Surface Combatant Concept Development) is a new start in FY 2020.

A. Mission Description and Budget Item Justification

0411 - The Navy's Large Surface Combatant (LSC) Program is a new ship evolutionary acquisition program essential to the Future Surface Combatant Force. The purpose of the program is to initially integrate non-developmental systems into a new hull design that incorporates platform flexibility and growth capabilities to meet projected future Fleet system requirements. Initial LSCs will leverage DDG 51 Flight III combat systems as well as increased flexibility/adaptability features including expanded Space, Weight, Power & Cooling Service Life Allowances (SWaP-C SLA) to allow for more rapid and affordable upgrades in capabilities over the ships' service life and allow for fielding of future high demand electric weapons and sensor systems and computing resources. The ability of the ship's Vertical Launch System to accommodate longer and larger diameter missiles for increased speed and range of weapons, additional capacity for an embarked warfare commander and staff, support for 360-degree coverage with Directed Energy weapons, and improved signatures with support for additional improvements over time. The new ships will be designed to provide these initial capability increases as well as the growth capacity to support projected future systems requirements. The design will also incorporate flexibility features to quickly back-fit and forward-fit systems to pace known threats and meet future emergent needs through evolutionary block upgrades and modernization.

3261 - T-AGOS Design & Total Ship Integration - Ocean surveillance ships gather underwater acoustical data to support the mission of the Integrated Undersea Surveillance System by providing a ship platform capable of theater anti-submarine acoustic passive and active surveillance. Auxiliary General Ocean Surveillance Ships (T-AGOS) are operated by Military Sealift Command to support the anti-submarine warfare mission of the commanders of the Atlantic and Pacific Fleets. The two current classes of surveillance ships use surveillance towed-array sensor system (SURTASS) equipment to gather undersea acoustic data. The ships also carry electronic equipment to process and transmit that data via satellite to shore stations for evaluation. Funding will support recapitalization of the four SWATH (T-19 Class) and one SWATH (T-23 Class) Auxiliary General Ocean Surveillance ships (T-AGOS). Funding in FY19 and later was transferred to PE 0204313N (Ship-Towed Array Surveillance Systems).

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy	Date: March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603564N *I Ship Prel Design & Feasibility Studies*

3377 - The Navy requires ocean-going towing, salvage, and rescue capabilities to support Fleet operations. The Navy's current capabilities are provided by four T-ATF 166 class Fleet Tugs and four T-ARS 50 class Salvage ships which reach the end of their expected service lives starting in 2020 and 2025, respectively.

The T-ATF Fleet Tugs perform towing at sea, salvage, and diving operations; act as a support ship for portable deep-diving equipment and submarine rescue operations; provide fire-fighting assistance; and perform oil spill pollution abatement. The T-ARS Salvage Ships perform combat salvage, lifting, emergency repair, and rescue towing of combatant or support ships damaged, stranded, scuttled, distressed, or abandoned at sea to repair yards or safe havens. The T-ATS program will recapitalize the current Fleet Tugs and Salvage Ships with a common hull Towing, Salvage and Rescue Ship (T-ATS) that is capable of performing the missions of the retiring T-ATF and T-ARS classes.

3389 - Naval Operational Logistics (OPLOG) Integration IPT Development - Develops enabling technologies for future and in-service afloat operational logistics and integrated supply force and combatant logistics requirements; and conducts cooperative initiatives with acquisition programs, program sponsors, engineering managers, the Navy science and technology community and Fleet customers. OPLOG develops integrated, cross-platform (i.e. applicable to more than one ship class/type) operational logistics and energy conservation technologies and capabilities as well as draft acquisition and operations policy ensuring future Naval systems leverage emerging logistic capabilities and technologies to provide operationally effective and energy efficient logistics delivery.

9999 - (Congressional Add Proj C404)- Continues efforts in FY2018 previously financed under the National Defense Sealift Fund (NDSF) PE0408042N Project 3117 OPLOG IPT Development in FY2016 and prior and PE0603564N Project 3389 OPLOG IPT Development in FY2017 to develop enabling technologies for future and in-service afloat operational logistics and integrated supply force and combatant logistics requirements.

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	12.012	13.348	22.534	-	22.534
Current President's Budget	18.369	13.348	69.084	-	69.084
Total Adjustments	6.357	0.000	46.550	-	46.550
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.592	0.000			
• SBIR/STTR Transfer	-0.780	0.000			
• Program Adjustments	0.000	0.000	46.550	-	46.550
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Congressional Add Adjustments	11.729	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy	Date: March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603564N *I Ship Prel Design & Feasibility Studies*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: 9999: *Congressional Adds*		
Congressional Add: *Naval Operational Logistics Integration*	11.319	0.000
Congressional Add Subtotals for Project: 9999	11.319	0.000
Congressional Add Totals for all Projects	11.319	0.000

Change Summary Explanation

The FY 2018 budget changes are due to an increase from the congressional transfer of $11.729 million from NDSF to RDTEN and a reprogramming reduction of $4.592 million to fund higher priority Navy requirements.

The FY 2020 increase is in support of the Large Surface Combatant design and development.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 0411 / *Future Surface Combatant Concept Development*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
0411: *Future Surface Combatant Concept Development*	0.000	0.000	0.000	46.550	-	46.550	53.160	51.050	45.530	11.930	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Project 0411, Future Surface Combatant Concept Development, is a new start in FY 2020.

A. Mission Description and Budget Item Justification

The Navy's Large Surface Combatant (LSC) Program is a new ship evolutionary acquisition program essential to the Future Surface Combatant Force. The purpose of the program is to initially integrate non-developmental systems into a new hull design that incorporates platform flexibility and growth capabilities to meet projected future Fleet system requirements. Initial LSCs will leverage DDG 51 Flight III combat systems as well as increased flexibility/adaptability features including expanded Space, Weight, Power & Cooling Service Life Allowances (SWaP-C SLA) to allow for more rapid and affordable upgrades in capabilities over the ships' service life and allow for fielding of future high demand electric weapons and sensor systems and computing resources. The ability of the ship's Vertical Launch System to accommodate longer and larger diameter missiles for increased speed and range of weapons, additional capacity for an embarked warfare commander and staff, support for 360-degree coverage with Directed Energy weapons, and improved signatures with support for additional improvements over time. The new ships will be designed to provide these initial capability increases as well as the growth capacity to support projected future systems requirements. The design will also incorporate flexibility features to quickly back-fit and forward-fit systems to pace known threats and meet future emergent needs through evolutionary block upgrades and modernization.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Large Surface Combatant Design Studies and Analysis	0.000	0.000	46.550	0.000	46.550
Articles:	-	-	-	-	-
Description: Beginning in FY 2020, this project will continue the efforts started under PE 0603563N PU 2196 Ship Concept Advanced Design. Prior to FY 2020, the Large Surface Combatant (LSC) program will have released requests for Information (RFI) to the shipbuilding industry and the supplier industry to collect product and process information to support the design effort as well as solicit input on acquisition and competition strategies that will optimally involve industry in the design effort and lead to a seamless RFP release and Detailed Design Contract award.					
FY 2019 Plans: N/A					
FY 2020 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *Future Surface Combatant Concept Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
In FY 2020, the LSC program office will conduct additional concept refinement Preliminary Design Phase 1 culminating in a System Requirements Review in Q4FY20. Set Based Design will be utilized during this phase of design to narrow subsystem trade space, refine and allocate draft Capabilities Development Document (CDD) requirements, develop a draft ship Concept of Operations (CONOPS), and ultimately develop an Initial Ship Baseline design as a starting point for Preliminary Design Phase 2 (PDD2). PDD2 will begin in Q4FY20 with the primary goal of refining the Initial Baseline into a Ship Functional Baseline. Key activities during this phase of design are down select of major ship systems and subsystems (including hull form and power and propulsion system), hull form scale model testing, development of draft ship specifications and validation of CDD performance objectives. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The FY 2020 increase is in support of the Large Surface Combatant design and development.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	46.550	0.000	46.550

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTEN/0603563N/2196: *Ship Concept Advanced Design*	4.309	22.451	33.595	-	33.595	22.400	6.923	6.898	7.234	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Navy envisions an evolutionary acquisition strategy for LSC utilizing a flexible, adaptable HM&E design coupled with open architecture mission systems that will allow for affordable block buys utilizing the most up to date mission systems available at the time of acquisition. The initial block of LSCs will utilize the DDG 51 Flight III Combat System with additional capabilities as described above. The schedule for LSC Block 1 continues Concept Refinement until 3QFY20 at which point Preliminary Design will commence. Contract Design, with primary objectives of development of an Allocated Baseline and development of a ship specification and selected procurement specifications will follow Preliminary Design. While the design for Block 1 is ongoing there will be aligned activity to work feasibility studies and concept refinement and technology maturation for block 2. The design activities would be low level of effort initially and start ramping up as block 1 goes into Detail Design. The block 1 and block 2 efforts would be closely aligned to ensure consistency and seamless handover from block 1 to block 2 design.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *Future Surface Combatant Concept Development*

E. Performance Metrics

Quarterly Program Reviews with Industry Partners

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 0411 / *Future Surface Combatant Concept Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sytems Engineering	Various	Various : Various	0.000	0.000		0.000		46.550	Dec 2019	-		46.550	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		46.550		-		46.550	Continuing	Continuing	N/A

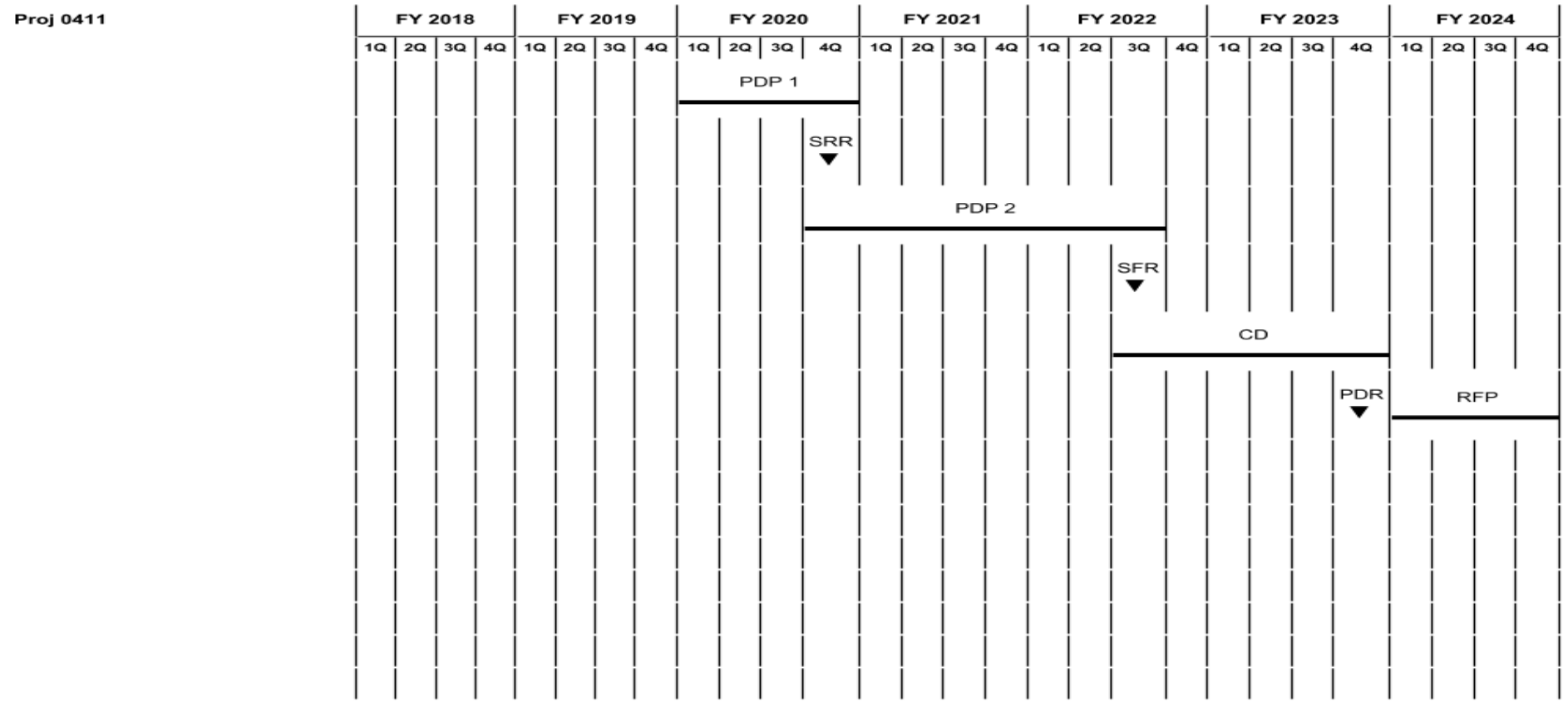
Remarks

In FY 2020, the large surface combatant program will build a national team of design agents, shipbuilders, and system integrators through open competition using competitive contract vehicles.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		46.550		-		46.550	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *Future Surface Combatant Concept Development*



2020PB - 0603564N - 0411

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *Future Surface Combatant Concept Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0411				
Preliminary Design Phase 1	1	2020	4	2020
System Requirements Review	4	2020	4	2020
Preliminary Design Phase 2	4	2020	3	2022
System Functional Review	3	2022	3	2022
Contract Design	3	2022	4	2023
Preliminary Design Review	4	2023	4	2023
Request for Proposal	1	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3261 / *TAGOS Design & Total Ship Integration*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3261: *TAGOS Design & Total Ship Integration*	0.000	7.050	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.050
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding for FY 2019 to FY 2022 was transferred to Ship-towed Array Surveillance Systems (PE 0204313N).

A. Mission Description and Budget Item Justification

T-AGOS Design & Total Ship Integration - Ocean surveillance ships gather underwater acoustical data to support the mission of the Integrated Undersea Surveillance System by providing a ship platform capable of theater anti-submarine acoustic passive and active surveillance. Auxiliary General Ocean Surveillance Ships (T-AGOS) are operated by Military Sealift Command to support the anti-submarine warfare mission of the commanders of the Atlantic and Pacific Fleets. The two current classes of surveillance ships use surveillance towed-array sensor system (SURTASS) equipment to gather undersea acoustic data. The ships also carry electronic equipment to process and transmit that data via satellite to shore stations for evaluation. Funding will support recapitalization of the four SWATH (T-19 Class) and one SWATH (T-23 Class) Auxiliary General Ocean Surveillance ships (T-AGOS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: T-AGOS Design & Total Ship Integration	7.050	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2019 Plans: Funding for FY 2019 to FY 2022 was transferred to Ship-towed Array Surveillance Systems (PE 0204313N).					
FY 2020 Base Plans: N/A					
FY 2020 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	7.050	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3261 / *TAGOS Design & Total Ship Integration*

D. Acquisition Strategy

Develop CDD, conduct trade studies and Pre-Preliminary Design in FY18. Issue RFP for Industry Studies for award of multiple contracts in FY19 to participate in Navy-led Preliminary/Contract Design (PD/CD) efforts. Complete Navy-led PD/CD efforts in FY21in order to issue Detail Design and Construction (DD&C) RFP and award to a single shipbuilder in FY22 for DD&C of a Lead Ship with options for up to four follow-on ships.

E. Performance Metrics

None.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3261 / *TAGOS Design & Total Ship Integration*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Integration/ Design	Various	Various : Various	0.000	2.243	Feb 2018	0.000		0.000		-		0.000	0.000	2.243	-
Model Testing	Various	Various : Various	0.000	0.000	Jun 2018	0.000		0.000		-		0.000	0.000	0.000	-
SURTASS Integration	Various	various : various	0.000	1.000	Feb 2018	0.000		0.000		-		0.000	0.000	1.000	-
		Subtotal	0.000	3.243		0.000		0.000		-		0.000	0.000	3.243	N/A

Remarks

Funding for FY19 to FY23 was transferred to PE 0204313N.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MS documentation prep & RFP Development	Various	Various : Various	0.000	1.300	Feb 2018	0.000		0.000		-		0.000	0.000	1.300	-
Specification & TDP Development	Various	Various : Various	0.000	1.107	Feb 2018	0.000		0.000		-		0.000	0.000	1.107	-
Systems Integration (C4I/ Safety/Risk)	Various	Various : Various	0.000	1.000	Feb 2018	0.000		0.000		-		0.000	0.000	1.000	-
		Subtotal	0.000	3.407		0.000		0.000		-		0.000	0.000	3.407	N/A

Remarks

Funding for FY19 to FY23 was transferred to PE 0204313N.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Planning	Various	Various : Various	0.000	0.400	Feb 2018	0.000		0.000		-		0.000	0.000	0.400	-
		Subtotal	0.000	0.400		0.000		0.000		-		0.000	0.000	0.400	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3261 / *TAGOS Design & Total Ship Integration*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
Funding for FY19 to FY23 was transferred to PE 0204313N.															

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	7.050		0.000		0.000		-		0.000	0.000	7.050	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3261 / *TAGOS Design & Total Ship Integration*

T-AGOS Design & Total Ship Integration

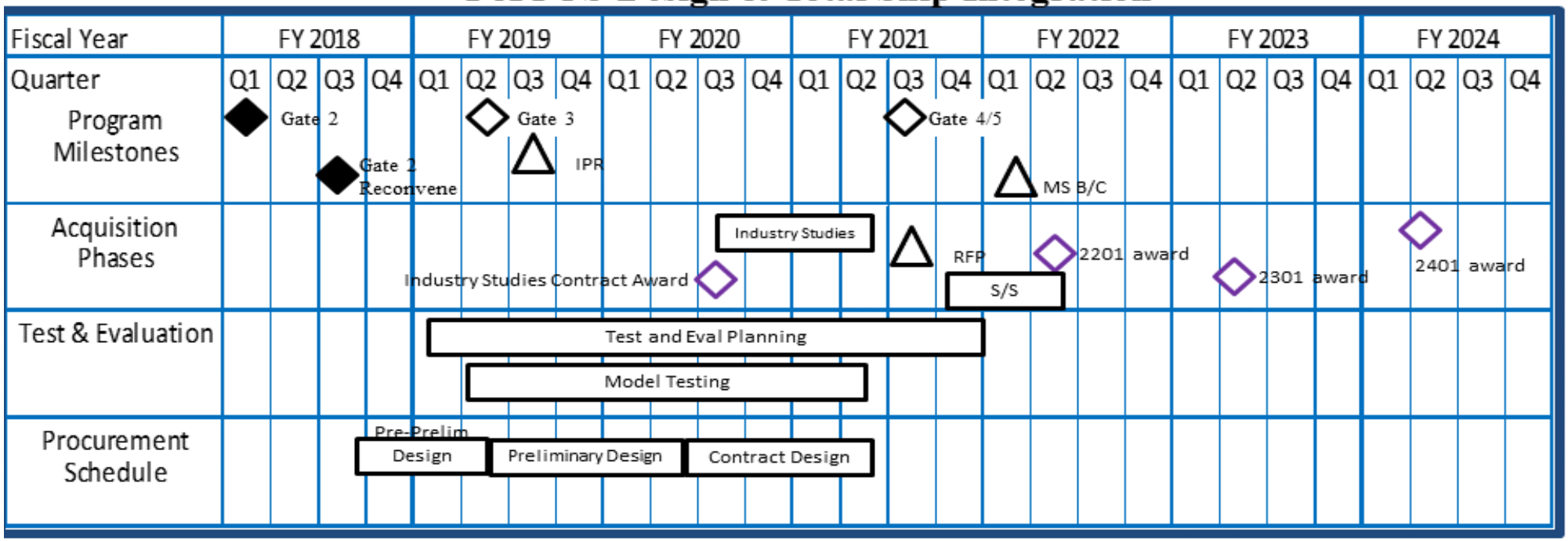


Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3261 / *TAGOS Design & Total Ship Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3261				
Gate 3	2	2019	2	2019
Milestone B/C	1	2022	1	2022
DD&C Award	2	2022	2	2022

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3377 / *T-ATS Ship Concept Development*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3377: *T-ATS Ship Concept Development*	4.587	0.000	0.393	0.893	-	0.893	0.000	0.000	0.000	0.000	0.000	5.873
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

T-ATS Design - Recapitalizes the existing T-ATF 166 Fleet Tug and T-ARS 50 Salvage Ship Classes with a common hull Towing, Salvage and Rescue Ship (T-ATS) to support Fleet operations. The T-ATF Fleet Tugs perform towing at sea, salvage, and diving operations; act as a support ship for portable deep-diving equipment and submarine rescue operations; provide fire-fighting assistance; and perform oil spill pollution abatement. The T-ARS Salvage Ships perform combat salvage, lifting, emergency repair, and rescue towing of combatant or support ships damaged, stranded, scuttled, distressed, or abandoned at sea to repair yards or safe havens. Funding supports Ship Concept Development and Test & Evaluation (T&E) for future tug, salvage, and rescue mission capabilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Ship Concept Development	0.000	0.393	0.893	0.000	0.893
Articles:	-	-	-	-	-
Description: Ship Concept Development and Test & Evaluation (T&E) for future tug, salvage, and rescue mission capabilities.					
FY 2019 Plans: Support the execution of Test and Evaluation Phase Developmental Test (DT) schedule per the Test and Evaluation Master Plan (TEMP)and cybersecurity testing. Coordinate efforts with NAVSEA, Military Sealift Command (MSC), PEO Ships, Operational Test and Evaluation Force (OPTEVFOR) , Joint Interoperability Test Command (JITC) and OSD Director of Operational Test & Evaluation (ODT&E).					
FY 2020 Base Plans: Support the execution of Test and Evaluation Phase Developmental Test (DT) schedule per the Test and Evaluation Master Plan (TEMP). Operational Test and Evaluation Force (OPTEVFOR) , Joint Interoperability Test Command (JITC) and OSD Director of Operational Test & Evaluation (ODT&E).					
FY 2020 OCO Plans: N/A					
FY 2019 to FY 2020 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3377 / *T-ATS Ship Concept Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY18 increase on Project Unit 3377 due to T&E schedule (starts FY18 4Q and continues in FY19).					
Accomplishments/Planned Programs Subtotals	0.000	0.393	0.893	0.000	0.893

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• SCN/5035: *Towing, Salvage and Rescue Ship (T-ATS)*	76.204	80.517	150.282	-	150.282	77.893	79.237	80.469	0.000	0.000	619.602

Remarks

D. Acquisition Strategy

Contract was awarded March 2018 for Lead Hull.

E. Performance Metrics

None.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3377 / *T-ATS Ship Concept Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	NAVAIR/NSWC/ SPAWAR : MD, MD, SC	0.769	0.000		0.000		0.000		-		0.000	0.000	0.769	-
Industry Design Studies	Various	Various : Various	0.679	0.000		0.000		0.000		-		0.000	0.000	0.679	-
		Subtotal	1.448	0.000		0.000		0.000		-		0.000	0.000	1.448	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Milestone Documention Support	C/FFP	CACI : DC	2.041	0.000		0.000		0.000		-		0.000	0.000	2.041	-
RFP and Specification Development	Various	Alion/CACI/ SPAWAR : DC, DC, SC	0.708	0.000		0.000		0.000		-		0.000	0.000	0.708	-
Test & Evaluation Planning	Various	OPTEVFOR, CACI, ALION : VA, DC	0.390	0.000		0.300	Jan 2019	0.350	Dec 2019	-		0.350	0.000	1.040	-
		Subtotal	3.139	0.000		0.300		0.350		-		0.350	0.000	3.789	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	C/FFP	Various : Various	0.000	0.000		0.093	Jun 2019	0.543	Apr 2020	-		0.543	0.393	1.029	-
		Subtotal	0.000	0.000		0.093		0.543		-		0.543	0.393	1.029	N/A

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.587	0.000		0.393		0.893		-		0.893	0.393	6.266	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3377 / *T-ATS Ship Concept Development*	

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3377 / *T-ATS Ship Concept Development*

T-ATS Design & Total Ship Integration

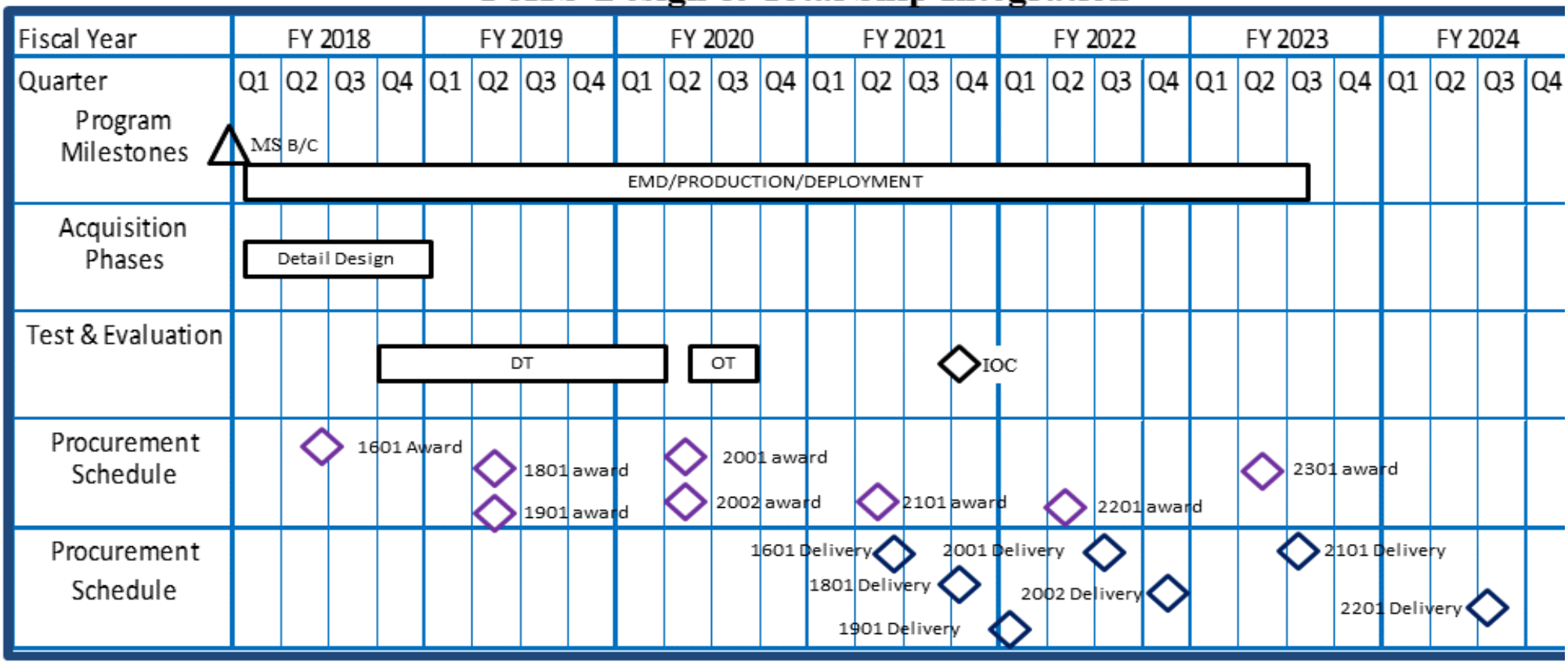


Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3377 / *T-ATS Ship Concept Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3377				
MILESTONE B/C	1	2018	1	2018
DT/OT	4	2018	3	2020
IOC	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3389 / *OPLOG IPT Development*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3389: *OPLOG IPT Development*	12.510	0.000	12.955	21.641	-	21.641	22.320	24.494	9.687	9.880	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

FY2016 and prior year efforts were financed under NDSF BA4 PE 0408042N Project 3117 Naval Operational Logistics (OPLOG) Integration. FY2017 is financed under this Program Element (Project 3389). FY2018 financed under Congressional add Project 9999/C404 in this budget.

A. Mission Description and Budget Item Justification

Project 3389 - Develops enabling technologies for future and in-service afloat operational logistics and integrated supply systems; defines integrated combat logistics force and combatant logistics requirements; and conducts cooperative initiatives with acquisition programs, program sponsors, engineering managers, the Navy science and technology community, and Fleet customers. OPLOG develops integrated, cross-platform (i.e. applicable to more than one ship class/type) operational logistics and energy conservation technologies and capabilities as well as draft acquisition and operations policy ensuring future Naval systems leverage emerging logistic capabilities and technologies to provide operationally effective and energy efficient logistics delivery.

Though the operational logistics family of systems touches all aspects of Naval presence and power projection, operational logistics capability and system interfaces typically have been left to individual acquisition programs to develop and resolve. Technology development is necessary to mitigate technological and operational risk before ship acquisition programs accept new technologies. This project provides a foundation for the transition and systems development of science & technology initiatives evolving from the Office of Naval Research (ONR) Power & Energy Future Naval Capabilities (FNC), Enterprise and Platform Enablers FNC, Seabasing FNC, and from other enabling Government, industry and academia concepts to the acquisition community. Thus, this project resources continued research and development of appropriate technologies with applicability to multiple acquisition programs and defines and matures performance and interface requirements for those technologies. This project continues to identify, develop, integrate, demonstrate, and transition logistics technologies to improve the cost effectiveness of Fleet at sea logistics delivery through outreach, coordination and collaboration with industry, academia, Fleet, and Enterprise representatives.

This project will continue to develop improved shipboard replenishment, transfer, and handling systems and components as well as asset visibility and standardized packaging technologies. This project includes development of approaches to reduce operation and maintenance costs of, and energy consumption by the logistics Fleet. This integrated suite of developed capabilities will enable multiple ship types to leverage common technologies common across DoD (Joint) and commercial transportation networks providing a more affordable, energy efficient, mission capable force. These capabilities and system-of-systems approach will be applied to concept development of future auxiliary force
architectures.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Advanced Systems	0.000	9.250	17.475	0.000	17.475

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Articles:	-	-	-	-	-
FY 2019 Plans: Continue advanced refueling system R&D to include: Complete SeaBased Petroleum Distribution System (SPDS) concept development (which began in FY18 utilizing PROJ C404 Congressional Add funds in this budget)and begin prototype development; begin Joint Offshore Fuel Farm (JOFF) concept development; continue Consolidated (CONSOL) tanker modular adapter kit detailed design and prototype development; and continue improved Modular Fuel Distribution System (iMFDS) preliminary design and Computer Aided Design (CAD) modeling. ***FY 2020 Base Plans:*** Continue advanced refueling system R&D to include: Complete SPDS prototype development and begin demonstrations, test and evaluations; complete JOFF concept development and begin prototype development; continue CONSOL tanker modular adapter kit test, evaluation, and demonstrations; and continue iMFDS detailed design and prototype development. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $8.225M increase from FY19 to FY20 is to procure additional hardware for JOFF prototype development and to procure/lease additional hardware for SPDS prototype test, evaluation, and demonstrations. It should be noted only the SPDS prototype development occurs in FY19, but both SPDS and JOFF prototype development occurs in FY20 along with the addition of the SPDS T&E.					
Title: Logistics Architectures	0.000	0.050	0.050	0.000	0.050
Articles:	-	-	-	-	-
FY 2019 Plans: Conduct combat logistics force data collection and operational studies. ***FY 2020 Base Plans:*** Conduct combat logistics force data collection and operational studies. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
No increase/decrease of funding					
Title: Shipboard Energy Conservation (E-STREAM) ***Articles:*** ***FY 2019 Plans:*** Continue energy management approach improvements including efficient ESTREAM system and components. Data package development and prototype purchase, installations, and testing for energy initiatives efficient shipboard replenishment at sea (RAS) Hybrid E-STREAM planned for FY 2019. ***FY 2020 Base Plans:*** Continue and complete Data package development for Navy Standard Transmission Replacement (NSTR) and E-RAS. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease of $2.3M from FY19 to FY20 reflects the completion of testing for energy initiatives efficient shipboard replenishment at sea (RAS) Hybrid E-STREAM.	0.000 -	3.100 -	0.800 -	0.000 -	0.800 -
Title: Shipboard Energy Conservation (Other) ***Articles:*** ***FY 2019 Plans:*** Continue limited operational energy and total ownership cost reduction initiatives to include: partial testing of adjustable speed drive (ASD) shipboard integration; holistic biofouling control hull evaluations. ***FY 2020 Base Plans:*** Continue operational energy and total ownership cost reduction initiatives from FY17, FY18, and FY19 to include: ASD and VFD pump integration development; Holistic biofouling reduction development and evaluations; mission and efficient route planning with improved energy command and control development; variable refrigerant flow and chiller improvement; new class intelligent HVAC development; shipboard energy audit, fuel/shorepower meter work package development; shorepower cost management development. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:***	0.000 -	0.205 -	2.916 -	0.000 -	2.916 -

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
The increase in FY20 is to continue the shipboard energy conservation and cost reduction initiatives that started in FY17/FY18 but were realigned in FY19 due to the priority of SeaBased Petroleum Distribution System development to meet critical COCOM Over-The-Shore fueling requirements and replace capability provided by SS Petersburg that is retiring.					
Title: Shipboard Material Transport ***Articles:*** ***FY 2019 Plans:*** Develop prototype Lithium Ion Battery storage and charging technologies for Combat Logistics Force (CLF) ships ***FY 2020 Base Plans:*** Develop and test prototype Lithium Ion Battery storage and charging technologies for Combat Logistics Force (CLF) ships ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** No significant changes from FY19 to FY20	0.000 -	0.350 -	0.400 -	0.000 -	0.400 -
Accomplishments/Planned Programs Subtotals	0.000	12.955	21.641	0.000	21.641

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable for OPLOG R&D efforts

E. Performance Metrics

Annual Program Review

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	VARIOUS : Various	2.650	0.000		5.357	Jan 2019	9.357	Jan 2020	-		9.357	Continuing	Continuing	Continuing
Ancillary Hardware Development	Various	VARIOUS : Various	1.296	0.000		1.500	Jan 2019	3.000	Jan 2020	-		3.000	Continuing	Continuing	Continuing
Ship Integration	Various	VAROUS : Various	1.200	0.000		0.600	Jan 2019	0.900	Jan 2020	-		0.900	Continuing	Continuing	Continuing
Ship Suitability	Various	VARIOUS : Various	0.750	0.000		0.500	Jan 2019	1.000	Jan 2020	-		1.000	Continuing	Continuing	Continuing
System Engineering	Various	VARIOUS : Various	1.250	0.000		0.940	Jan 2019	1.911	Jan 2020	-		1.911	Continuing	Continuing	Continuing
		Subtotal	7.146	0.000		8.897		16.168		-		16.168	Continuing	Continuing	N/A

Remarks

1. Primary Hardware Development, Ancillary Hardware Development and System Engineering is related to the Advanced Systems Joint Offshore Fuel Farm (JOFF) and SeaBased Petroleum Distribution System (SPDS) prototype development.
2. Award dates reflect initial award of incremental execution.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Suport	Various	VARIOUS : Various	0.750	0.000		0.900	Jan 2019	1.000	Jan 2020	-		1.000	Continuing	Continuing	Continuing
Software Development	Various	VARIOUS : Various	0.000	0.000		0.050	Jan 2019	0.100	Jan 2020	-		0.100	Continuing	Continuing	Continuing
Integrated Logistics Support	Various	VARIOUS : Various	0.300	0.000		0.350	Jan 2019	0.350	Jan 2020	-		0.350	Continuing	Continuing	Continuing
Configuration Management	Various	VARIOUS : Various	0.500	0.000		0.400	Jan 2019	1.000	Jan 2020	-		1.000	Continuing	Continuing	Continuing
Technical Data	Various	VAROUS : Various	0.800	0.000		0.600	Jan 2019	0.600	Jan 2020	-		0.600	Continuing	Continuing	Continuing
Studies & Analysis	Various	VARIOUS : Various	0.367	0.000		0.135	Jan 2019	0.250	Jan 2020	-		0.250	Continuing	Continuing	Continuing
		Subtotal	2.717	0.000		2.435		3.300		-		3.300	Continuing	Continuing	N/A

Remarks

1. Award dates reflect initial award of incremental execution.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	VARIOUS : Various	1.297	0.000		0.700	Jan 2019	0.950	Jan 2020	-		0.950	Continuing	Continuing	Continuing
Operational Test & Evaluation	Various	VARIOUS : Various	1.000	0.000		0.573	Jan 2019	0.823	Jan 2020	-		0.823	Continuing	Continuing	Continuing
		Subtotal	2.297	0.000		1.273		1.773		-		1.773	Continuing	Continuing	N/A

Remarks

1. DT&E and OT&E cost are related to prototype test and demonstration for Advanced Systems Joint Offshore Fuel Farm (JOFF) and SeaBased Petroleum Distribution System (SPDS).
2. Award dates reflect initial award of incremental execution.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	VARIOUS : Various	0.100	0.000		0.100	Jan 2019	0.150	Jan 2020	-		0.150	Continuing	Continuing	Continuing
Government Engineering Support	Various	VARIOUS : Various	0.250	0.000		0.250	Jan 2019	0.250	Jan 2020	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.350	0.000		0.350		0.400		-		0.400	Continuing	Continuing	N/A

Remarks

Award dates reflect initial award of incremental execution.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.510	0.000		12.955		21.641		-		21.641	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
13119: Research, Development, Test & Evaluation, Navy BA 04: Advanced Component Development & Prototypes (ACD&P)	PE 0603564N, Ship Preliminary Design & Feasibility Studies	Project 3389 OPLOG IPT development

Note: FY16 and Prior, Project 3889 was funded in PE 0408042N / *National Defense Sealift Fund* under Project 3117 OPLOG IPT development.

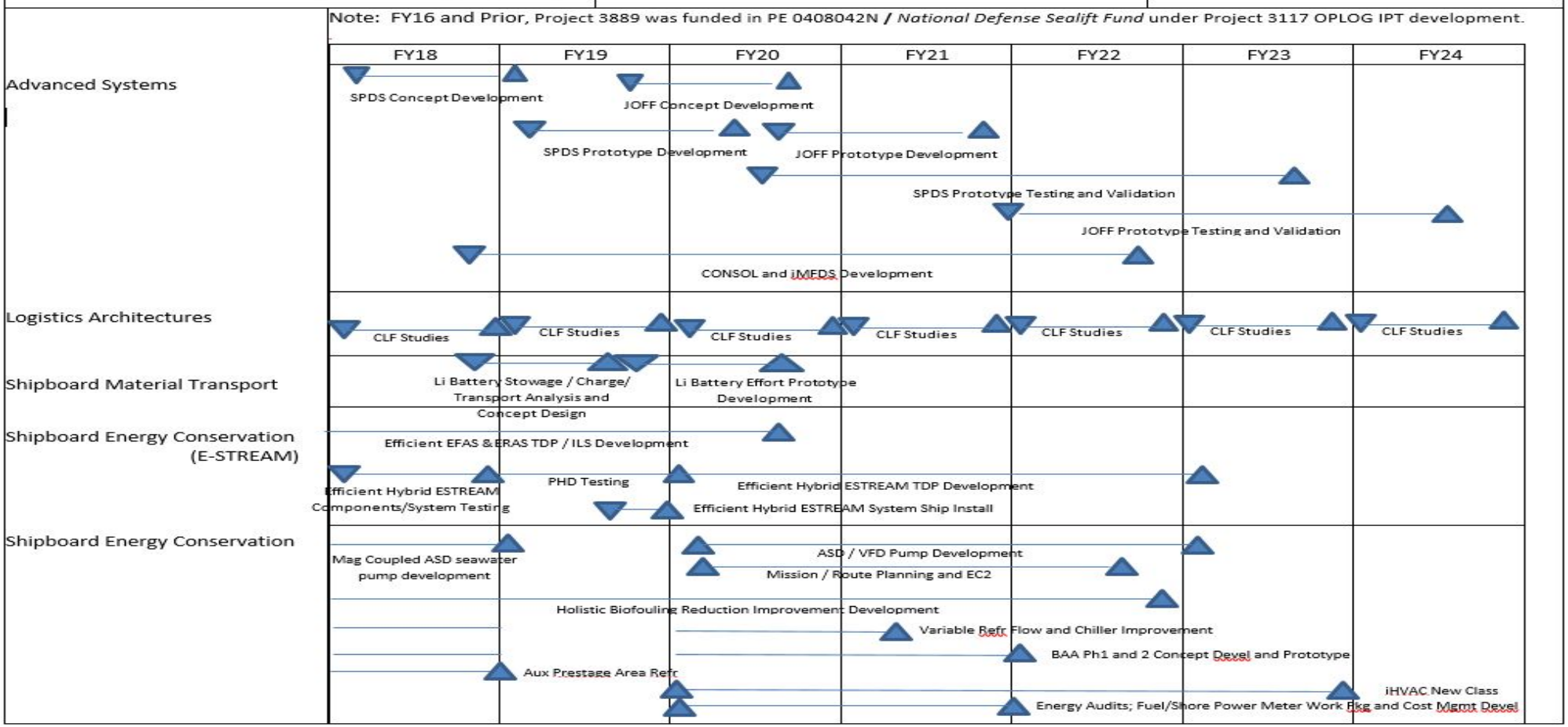


Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3389				
Advanced Systems	1	2018	4	2024
Logistics Architectures	1	2018	4	2024
Shipboard Energy Conservation (E-STREAM)	1	2018	4	2020
Shipboard Energy Conservation (Other)	1	2018	4	2023
Shipboard Material Transport	1	2018	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	11.319	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.319
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Project C404 for execution

A. Mission Description and Budget Item Justification

Project C404 funds efforts previously funded under NDSF PE0408042N Project 3117 OPLOG IPT Development for FY2016 and prior and PE0603564N Project 3389 OPLOG IPT Development in FY2017 to develop enabling technologies for future and in-service afloat operational logistics and integrated supply force and combatant logistics requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
Congressional Add: Naval Operational Logistics Integration	11.319	0.000
FY 2018 Accomplishments: Advanced Systems: Advanced refueling system concept: Start of SeaBased Petroleum Distribution System (SPDS) concept development; start of CONSOL tanker modular adapter kit and improved Modular Fuel Distribution System (iMFDS) concept development. Logistics Architectures: Conducted combat logistics force data collection and operational studies. Shipboard Material Transport: Conducted evaluation of Lithium-Ion battery storage technologies for CLF ships. Shipboard Energy Conservation (E-STREAM): Continued energy management approach improvements including efficient ESTREAM system and components. Continued Data package development and prototype purchase, installations, and testing for energy initiatives efficient shipboard replenishment at sea (RAS) ESTREAM planned for FY 2018. Shipboard Energy Conservation (OTHER): Continued energy management approach improvements including validation of energy savings from implementation of energy conservation measures, identification and evaluation of additional energy conservation concepts, transition of successful energy conservation measures to MSC		

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
and coordination with other Navy energy conservation programs to leverage successful energy reduction approaches. ***FY 2019 Plans:*** N/A		
Congressional Adds Subtotals	11.319	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Program review.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various : Various	0.000	3.000	May 2018	0.000		0.000		-		0.000	0.000	3.000	-
Ancillary Hardware Development	Various	Various : Various	0.000	1.095	May 2018	0.000		0.000		-		0.000	0.000	1.095	-
Ship Integration	Various	Various : Various	0.000	1.600	May 2018	0.000		0.000		-		0.000	0.000	1.600	-
Ship Suitability	Various	Various : Various	0.000	1.000	May 2018	0.000		0.000		-		0.000	0.000	1.000	-
System Engineering	Various	Various : Various	0.000	1.224	May 2018	0.000		0.000		-		0.000	0.000	1.224	-
		Subtotal	0.000	7.919		0.000		0.000		-		0.000	0.000	7.919	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : Various	0.000	0.750	May 2018	0.000		0.000		-		0.000	0.000	0.750	-
Software Development	Various	Various : Various	0.000	0.250	May 2018	0.000		0.000		-		0.000	0.000	0.250	-
Integrated Logistics Support	Various	Various : Various	0.000	0.250	May 2018	0.000		0.000		-		0.000	0.000	0.250	-
Configuration Management	Various	Various : Various	0.000	0.400	May 2018	0.000		0.000		-		0.000	0.000	0.400	-
Technical Data	Various	Various : Various	0.000	0.700	May 2018	0.000		0.000		-		0.000	0.000	0.700	-
Studies & Analysis	Various	Various : Various	0.000	0.350	May 2018	0.000		0.000		-		0.000	0.000	0.350	-
		Subtotal	0.000	2.700		0.000		0.000		-		0.000	0.000	2.700	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	Various	Various : Various	0.000	0.100	May 2018	0.000		0.000		-		0.000	0.000	0.100	-
Operational Test & Evaluation	Various	Various : Various	0.000	0.250	May 2018	0.000		0.000		-		0.000	0.000	0.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	0.350		0.000		0.000		-		0.000	0.000	0.350	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	0.000	0.100	May 2018	0.000		0.000		-		0.000	0.000	0.100	-
Government Engineering Support	Various	Various : Various	0.000	0.250	May 2018	0.000		0.000		-		0.000	0.000	0.250	-
		Subtotal	0.000	0.350		0.000		0.000		-		0.000	0.000	0.350	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	11.319		0.000		0.000		-		0.000	0.000	11.319	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*

Exhibit R-4, RDT&E Schedule Profile: BES 2020 Navy		Date: September 2018
Appropriation/Budget Activity 13119: Research, Development, Test & Evaluation, Navy BA 04: Advanced Component Development & Prototypes (ACD&P)	**R-1 Program Element (Number/Name)** PE 0603564N, Ship Preliminary Design & Feasibility Studies	**Project (Number/Name)** Project 9999 Congressional Adds (OPLOG)

Note: FY16 and Prior, Project 3889 was funded in PE 0408042N / *National Defense Sealift Fund* under Project 3117 OPLOG IPT development.

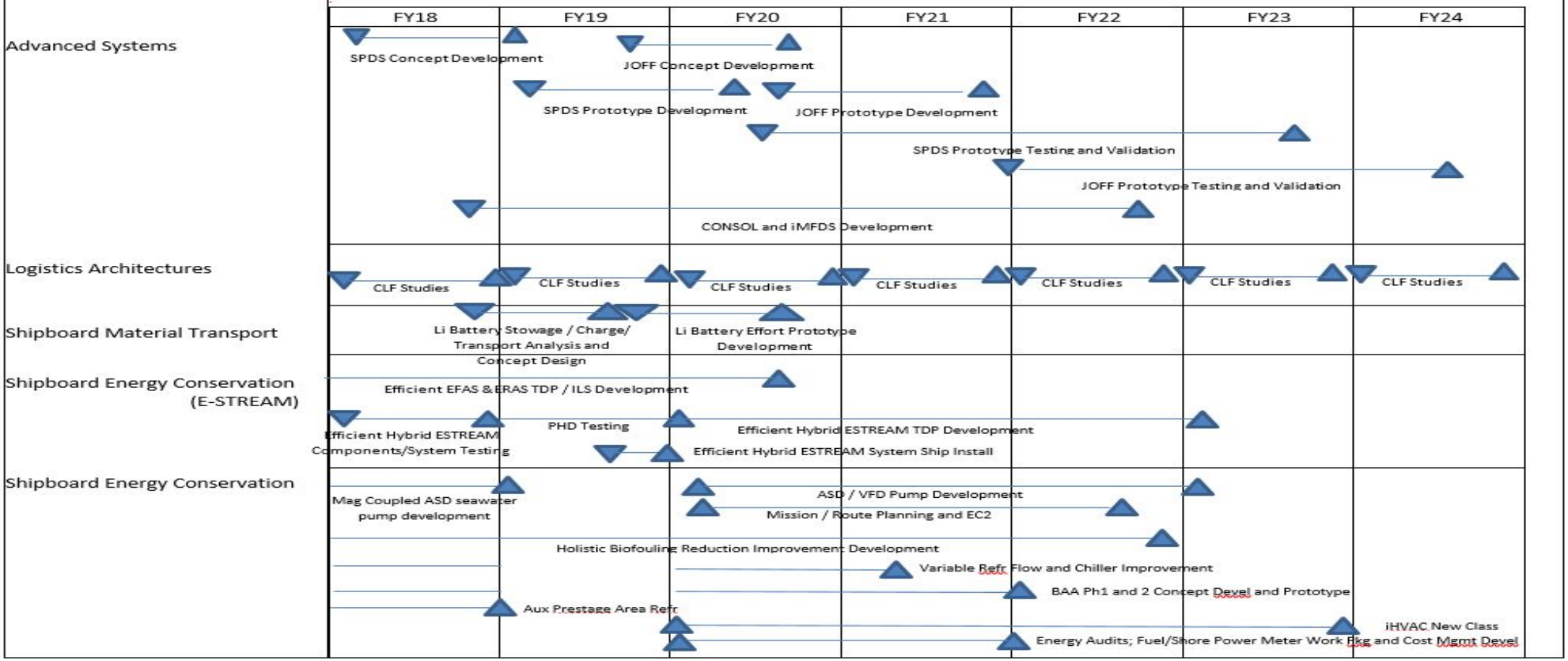


Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Advanced Systems	1	2018	4	2018
Logistics Architectures	1	2018	4	2018
Shipboard Material Transport	1	2018	4	2018
Shipboard Energy Conservation (E-STREAM)	1	2018	4	2018
Shipboard Energy Conservation (Other)	1	2018	4	2018