Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0708730N *I Maritime Tech (MARITECH)*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	43.102	6.406	6.329	2.133	-	2.133	4.102	3.833	3.328	3.361	Continuing	Continuing
2466: *NSRP ASE*	37.345	4.226	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	41.571
3435: *Advanced Shipyard Technology*	5.757	2.180	3.329	2.133	-	2.133	4.102	3.833	3.328	3.361	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.000

A. Mission Description and Budget Item Justification

The Advanced Shipyard Technology (AST) seeks to improve the productivity, quality, and reduce costs of maintenance performed by the Naval public shipyards. The resulting technologies implemented by this program benefit both the naval shipyard and the US Navy.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	6.667	3.329	0.000	-	0.000
Current President's Budget	6.406	6.329	2.133	-	2.133
Total Adjustments	-0.261	3.000	2.133	-	2.133
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.261	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	2.133	-	2.133

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 9999: *Congressional Adds*		
Congressional Add: *Maritime technology to mitigate IoT/ICS security vulnerabilities*	0.000	3.000
Congressional Add Subtotals for Project: 9999	0.000	3.000
Congressional Add Totals for all Projects	0.000	3.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0708730N *I Maritime Tech (MARITECH)*

Change Summary Explanation

The FY 2023 funding request was reduced by $1.4 million to account for the availability of prior year execution balances.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*	Project (Number/Name) 2466 / *NSRP ASE*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
2466: *NSRP ASE*	37.345	4.226	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	41.571
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

NSRP ASE is a collaboration of U.S. shipyards working with the Navy customer to reduce the cost of building and repairing naval ships and improving shipbuilding industry productivity through advanced technology and processes. NSRP ASE is an innovative and proven approach to public/private cooperation to manage cost-shared R&D based on a national consensus Strategic Investment Plan. The Plan targets potential industry-wide technology and process solutions which are vetted by industry experts and builds upon the progress made over the previous years. The collaboration's organizational structure promotes teaming of industry, government and academia to achieve the continuous product and process improvements necessary for improved Navy ship affordability. Solutions include both leverage of best commercial practices and creation of industry-wide initiatives with aggressive technology transfer to, and buy-in by, multiple U.S. shipyards. Navy PEOs (Ships, Subs and Carriers) and NAVSEA are directly involved in NSRP. The Plan calls for matching government and industry investments over several years.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Technology Development Projects	4.226	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The NSRP is an ongoing Research and Development program. This program awards small research projects and large research projects to (1) Improve Quality; (2) Reduce Total Ownership Costs; and, (3) Increase Energy Efficiency. These research projects have been known to produce technological advances in shipbuilding that, once implemented, have resulted in savings for the Navy. ***FY 2022 Plans:*** N/A ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** N/A					
Accomplishments/Planned Programs Subtotals	4.226	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 2466 / *NSRP ASE*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

R&D projects have been solicited and awarded by an industry collaboration represented by the Executive Control Board (ECB) of the National Shipbuilding Research Program (NSRP). The Navy has entered into an agreement with the industry collaboration using "other transaction" authority pursuant to 10 U.S.C. 2371.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*	Project (Number/Name) 2466 / *NSRP ASE*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development	Various	ECB NSRP : Not Specified	36.474	4.226	Dec 2020	0.000		0.000		-		0.000	0.000	40.700	-
		Subtotal	36.474	4.226		0.000		0.000		-		0.000	0.000	40.700	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gov't Support Services	WR	NSWCCD : Not Specified	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	-
Contractor Support Services	Various	Various : Not Specified	0.221	0.000		0.000		0.000		-		0.000	0.000	0.221	-
		Subtotal	0.871	0.000		0.000		0.000		-		0.000	0.000	0.871	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.345	4.226		0.000		0.000		-		0.000	0.000	41.571	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 2466 / *NSRP ASE*

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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 2466																												
Ship Collaborative Framework Technologies	[redacted]																											

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 2466 / *NSRP ASE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2466				
Ship Collaborative Framework Technologies	1	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*	Project (Number/Name) 3435 / *Advanced Shipyard Technology*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3435: *Advanced Shipyard Technology*	5.757	2.180	3.329	2.133	-	2.133	4.102	3.833	3.328	3.361	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Advanced Shipyard Technology (AST) develops, matures, and transitions technology (production processes, human augmentation, business process, IT, tooling, etc.), into the naval shipyards. Advanced Shipyard Technology funding will facilitate collaboration between government (Naval Sea Systems Command (NAVSEA), the public naval shipyards, Navy customers, Naval Warfare Centers, and others), academia, and industry. AST is an innovative approach to leverage public/private cooperation and target technology and process solutions that build on progress made over the previous years. Funding ensures widespread adoption of innovative improvements, enhancing proficiency and productivity of the public naval shipyard workforce to achieve the continuous product and process improvements necessary for improved Navy ship repair costs, and an overall reduction in availability duration. FY23 funds will continue focus on efforts that prevent corrosion, enhance cold spray technology, laser ablation, and plasma coating removal. Additionally, our Artificial intelligence efforts will become more progressed, leading to inspections and the conduction of shipboard working paint removal and cold spray repairs.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Technology Transfer	2.180	3.329	2.133	0.000	2.133
Articles:	-	-	-	-	-
FY 2022 Plans: Complete technology development projects in the six major initiative areas (Surface Restoration, Additive Manufacturing and Repair, Expeditionary Maintenance, Automation and Robotics, Digital Shipyard, and Infrastructure) that will be competitively selected by sustainment and technology subject matter experts and Navy stakeholders. The following are priorities in Naval sustainment and repair: (1) Reduce Critical Path; (2) Reduce Cycle Times; (3) Reduce Life cycle Costs, (4) Increase throughput and, (5) Improve workforce safety and efficacy. It is anticipated that projects selected will continue to be focused in the following areas: - Modernizing Industrial Processes - Improving Material Availability - Increasing Workforce Capacity - New repair technologies					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 3435 / *Advanced Shipyard Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Reducing Re-work - Improving Worker Efficiency - Improving Scheduling and Planning - Improving Safety & Health / Reducing Environmental Impacts - Education and Training - Total Ownership Cost - Leverage technology transfer opportunities Additionally, - Artificial Intelligence - Disrupting Corrosion - Adaption to Automated Platforms ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease of $0.313M from FY22 to FY23 is due to prior year underexecution carryover and Total Force Management reductions.					
Accomplishments/Planned Programs Subtotals	2.180	3.329	2.133	0.000	2.133

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Technologies will be developed and fielded based on their level of maturity and measure of benefit to the public naval shipyards.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*	Project (Number/Name) 3435 / *Advanced Shipyard Technology*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development	Various	Various : Locations	5.757	2.180	Dec 2020	3.329	Dec 2021	2.133	Dec 2022	-		2.133	Continuing	Continuing	Continuing
		Subtotal	5.757	2.180		3.329		2.133		-		2.133	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.757	2.180		3.329		2.133		-		2.133	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 3435 / *Advanced Shipyard Technology*

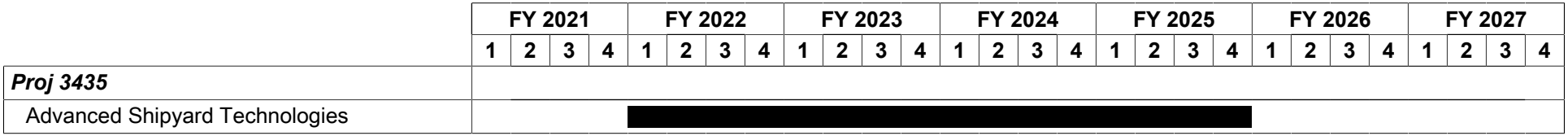

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 3435 / *Advanced Shipyard Technology*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3435				
Advanced Shipyard Technologies	1	2022	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The President's Budget Fiscal Year 2022 enactment added funds to LI 0708730N for the Maritime Technology to Mitigate IoT/ICS Security Vulnerabilities program.

A. Mission Description and Budget Item Justification

FY 2022 Congressional Add for C802 - Maritime Technology to mitigate IoT/ICS security vulnerabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Maritime technology to mitigate IoT/ICS security vulnerabilities	0.000	3.000
FY 2021 Accomplishments: N/A		
FY 2022 Plans: Commence work on Maritime Technology to mitigate IoT/ICS security vulnerabilities.		
Congressional Adds Subtotals	0.000	3.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

RDTEN Contracts are Competitive Procurements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 9999 / *Congressional Adds*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IT Management Services Contract	TBD	Various : Various	0.000	0.000		3.000	Jul 2022	0.000		-		0.000	0.000	3.000	-
		Subtotal	0.000	0.000		3.000		0.000		-		0.000	0.000	3.000	N/A

Remarks

Award IoT/ICS security vulnerabilities contract in FY22 to provide support in the areas of asset and device cataloging, vulnerability database, dashboard of the IoT technology landscape and alert reporting.

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		3.000		0.000		-		0.000	0.000	3.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 9999 / *Congressional Adds*

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9999																												
maritime technology to mitigate IoT/ICS security vulnerabilities																												

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
maritime technology to mitigate IoT/ICS security vulnerabilities	3	2022	3	2022