Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604503N / *SSN-688 & Trident Modernization*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	1,413.955	90.148	93.435	97.953	-	97.953	97.378	97.066	98.414	100.426	Continuing	Continuing
0219: *Sub Sonar Improvement (ENG)*	1,279.216	58.246	60.822	62.874	-	62.874	62.570	62.903	63.655	64.956	Continuing	Continuing
0775: *Submarine Supt Equip Prog*	134.739	31.902	32.613	35.079	-	35.079	34.808	34.163	34.759	35.470	Continuing	Continuing

Note

Beginning in FY20, funding for the following projects was realigned from PE 0603503N to PE 0604280N: Project 0742 - Sub Integrated Antenna System and Project 1411 - Sub Tactical Communication System.

A. Mission Description and Budget Item Justification

SSN-688 & Trident Modernization delivers block updates to Submarine Sonar systems and develops improved Submarine Electronic Warfare (EW) systems. These development activities ensure all Submarine Classes maintain clear acoustical, tactical, and operational superiority over Submarines and Surface Combatants in Joint Littoral Warfare, Joint Intelligence Surveillance Reconnaissance (ISR), Indications and Warnings, Information Operations including Cyber, and Special Operations Force (SOF) support. Current developments are focused on supporting Joint Littoral Warfare, Regional Sea Denial, Strike Group Support, Diesel Submarine Detection, Joint Surveillance and Peacetime Engagement, Space and Electronic Warfare, Intelligence Collection, Maritime Protection, and Joint Strike.

FY 2025 funding request reflects a net increase of $4.928 million from FY 2024 to FY 2025. Funding increase is associated with APB-23 design, integration, and testing efforts associated with TI-24, which transitions Acoustic Rapid COTS Insertion (A-RCI) to Development, Cyber Security, and Operations (DevSecOps) in the Technical Insertion (TI)/Advanced Processing Build (APB) TI/APB process to better align with software development industry standards and meet fleet demands for rapid capability deliveries and increased focus on machine learning, automation, and behavioral analysis, Light Weight Wide Aperture Array (LwWAA) technology refresh development.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy					Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604503N *I SSN-688 & Trident Modernization*		
B. Program Change Summary ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Previous President's Budget	93.501	93.435	98.363	-	98.363
Current President's Budget	90.148	93.435	97.953	-	97.953
Total Adjustments	-3.353	0.000	-0.410	-	-0.410
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.003	0.000			
• SBIR/STTR Transfer	-3.350	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.410	-	-0.410

Change Summary Explanation

FY 2023 funding reflects a decrease of (-$3.353) million from previous President's Budget. Funding decrease reflects a Small Business Innovation Research (SBIR) / Submarine Tactical Requirements (STTR) Transfer.

FY 2025 funding request reflects a net increase of $2.315 million from FY 2024 to FY 2025 for Proj: 0219. Funding increase is associated with rate adjustments, APB-23 design, integration, and testing efforts associated with TI-24, which transitions Acoustic Rapid COTS Insertion (A-RCI) to Development, Cyber Security, and Operations (DevSecOps) in the Technical Insertion (TI)/Advanced Processing Build (APB) TI/APB process to better align with software development industry standards and meet fleet demands for rapid capability deliveries and increased focus on machine learning, automation, and behavioral analysis, Light Weight Wide Aperture Array (LwWAA) technology refresh development.

FY 2025 funding request also reflects a net increase of $2.613 million from FY 2024 to FY 2025 for Proj: 0775. This is for Submarine Tethered Expendable Buoy (STEB) development. STEB will build off a prototype currently in development, funding will also be used to pursue additional communications and imaging capabilities not resident in the current prototype. The FY25 funding increase also supports the development of TI-24 and APB capabilities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604503N / *SSN-688 & Trident Modernization*				Project (Number/Name) 0219 / *Sub Sonar Improvement (ENG)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
0219: *Sub Sonar Improvement (ENG)*	1,279.216	58.246	60.822	62.874	-	62.874	62.570	62.903	63.655	64.956	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AN/BQQ-10(V) Acoustic Rapid COTS Insertion (A-RCI) aubmarine SONAR system will continue to add new capabilities via Technical Insertion (TI)/Advanced Processing Build (APB) process while working across Submarine Warfare Federated Tactical System (SWFTS) programs to transition to Development Security Operations (DevSecOps) software processes and migrate to a cloud based architecture. The Navy is pursuing a transformation across SWFTS (PE 0604503N Project 0219, PE 0604562N Project 0236, PE 0604777N Project 0253 and PE 0604503N Project 0775) to maximize cyber-resiliency and the speed of capability delivery.

FY 2025 funding request reflects a net increase of $2.052 million from FY 2024 to FY 2025. Funding increase is associated with APB-23 design, integration, and testing efforts associated with TI-24, which transitions Acoustic Rapid COTS Insertion (A-RCI) to Development, Cyber Security, and Operations (DevSecOps) in the TI/APB process to better align with software development industry standards and meet fleet demands for rapid capability deliveries as well as increased focus on machine learning, automation, and behavioral analysis. Increase also associated with design, integration, and testing efforts associated with the Light Weight Wide Aperture Array (LwWAA) technical refresh for Block I/II VIRGINIA Class Submarines.

This program delivers block updates to Sonar Systems installed on SSN 688, 688I, SSN 21, VIRGINIA, SSBN, and SSGN Class Submarines to maintain clear acoustical, tactical, and operational superiority over Submarines and Surface Combatants in all scenarios through detection, classification, localization, and contact following.

Acoustics Rapid COTS Insertion (A-RCI) provides multi-phased evolutionary development geared toward addressing acoustic superiority issues through the rapid introduction of interim development products applicable to all Classes of Submarines.
- A-RCI Phase I and II introduced Towed Array processing improvements
- Phase III introduced Spherical Array processing improvements
- Phase IV provided High Frequency (HF) Array processing improvements for SSN 688I, SSGN, SSBN, VIRGINIA, and SSN 21 Class Submarines.

As part of the Navy's plan to maintain acoustic superiority for in-service submarines, a joint cooperative effort was established to deliver bi-annual Advanced Processing Builds (APBs) to prevent obsolescence and deliver ongoing capability improvements.
- Capabilities in the APBs will be integrated as part of A-RCI certified systems.

Sensor Efforts provide increased operational capabilities for littoral operations, situational awareness, and reliability improvements.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0219 / *Sub Sonar Improvement (ENG)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: APB Productionization	17.057	16.143	17.300	0.000	17.300
Articles:	-	-	-	-	-
Description: APB Productionization provides for the transition of APB capability improvements to the Fleet for integration, testing and formal certification. ***FY 2024 Plans:*** -Continue Advanced Processing Build (APB) development and transition of APB software from development to A-RCI for integration, testing, and formal certification. -Ensure continued transition of the SSBN legacy sonar system to the TI/APB model. -Transition development of in-board signal processing associated with the Large Vertical Array (LVA) to VIRGINIA Class modernization. ***FY 2025 Base Plans:*** -Continue Advanced Processing Build (APB) development and transition of APB software from development to A-RCI for integration, testing, and formal certification. -Ensure continued transition of the SSBN legacy sonar system to the TI/APB model. -Transition development of in-board signal processing associated with the Large Vertical Array (LVA) to VIRGINIA Class modernization. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase associated with development of in-board signal processing associated with the Large Vertical Array (LVA) to VIRGINIA Class.					
Title: Integration and Testing	37.233	40.644	41.457	0.000	41.457
Articles:	-	-	-	-	-
Description: Integration and Testing provides support to integrate and test APBs into all Submarine Classes containing multiple sensor systems. ***FY 2024 Plans:*** -Continue support of Advanced Processing Builds installed on SSN688I, SSN 21, SSBN, SSGN, and VA Class Submarines.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0219 / *Sub Sonar Improvement (ENG)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
-Continue integration and testing associated with signal processing in support of Large Vertical Array (LVA) on SSBN and VA Class submarines. -Transition A-RCI APB content delivery to SWFTS Continuous Capability Insertion Model through implementation of Development, Cyber Security, and Operations (DevSecOps) and Agile development for flexible APB content releases to fleet platforms. These efforts increase focus on machine learning, automation, and behavioral analysis. ***FY 2025 Base Plans:*** -Continue support of Advanced Processing Builds installed on SSN688I, SSN 21, SSBN, SSGN, and VA Class Submarines. -Continue integration and testing associated with signal processing in support of Large Vertical Array (LVA) on SSBN and VA Class submarines. -Transition A-RCI APB content delivery to SWFTS Continuous Capability Insertion Model through implementation of Development, Cyber Security, and Operations (DevSecOps) and Agile development for flexible APB content releases to fleet platforms. These efforts increase focus on machine learning, automation, and behavioral analysis. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** -Increase A-RCI APB content delivery to SWFTS Continuous Capability Insertion Model through implementation of Development, Cyber Security, and Operations (DevSecOps) and Agile development for flexible APB content releases to fleet platforms. These efforts increase focus on machine learning, automation, and behavioral analysis.					
Title: A-RCI Acoustic Superiority Integration	3.956	4.035	4.117	0.000	4.117
Articles:	-	-	-	-	-
Description: Maintain Acoustic Superiority for In-service Submarines to deliver bi-annual Advance Processing Builds (APBs) to prevent obsolescence and deliver emerging capability improvements for current and future threats.					
FY 2024 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0219 / *Sub Sonar Improvement (ENG)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
-Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives. OCO: -Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives. ***FY 2025 Base Plans:*** -Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives. OCO: -Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives.					
Accomplishments/Planned Programs Subtotals	58.246	60.822	62.874	0.000	62.874

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/2150: *SSN Acoustic Equipment*	446.648	463.577	502.115	-	502.115	549.164	551.332	606.537	519.207	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0219 / *Sub Sonar Improvement (ENG)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Acoustic Systems:
-A-RCI utilizes an open architecture and Commercial Off-the-Shelf (COTS) products in support of new and upgraded sonar systems.
-Program Reviews with the Milestone Decision Authority (MDA) are conducted in conjunction with approval for contract production options.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604503N / *SSN-688 & Trident Modernization*	Project (Number/Name) 0219 / *Sub Sonar Improvement (ENG)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPIF	LMC : Manassas, VA	458.880	17.243	Dec 2022	19.003	Dec 2023	20.217	Dec 2024	-		20.217	Continuing	Continuing	Continuing
Ancillary Hardware Development	SS/CPFF	ARL University of Texas : Austin, TX	56.469	3.266	Mar 2023	3.331	Mar 2024	3.398	Mar 2025	-		3.398	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	Johns Hopkins APL : Baltimore, MD	58.787	3.385	Dec 2022	3.452	Dec 2023	3.521	Dec 2024	-		3.521	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	LMC : VA - Keyport	56.603	3.481	Jan 2023	3.550	Jan 2024	3.621	Jan 2025	-		3.621	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPIF	Progeny Systems : Manassas, VA	102.887	6.750	Jan 2023	6.885	Jan 2024	7.022	Jan 2025	-		7.022	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC : Newport, RI	218.242	10.297	Dec 2022	10.503	Dec 2023	10.713	Dec 2024	-		10.713	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Carderock, MD	43.708	3.031	Dec 2022	3.091	Dec 2023	3.153	Dec 2024	-		3.153	Continuing	Continuing	Continuing
		Subtotal	995.576	47.453		49.815		51.645		-		51.645	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development	C/CPIF	General Dynamics, AIS : Fairfax, VA	190.262	5.439	Dec 2022	5.547	Dec 2023	5.658	Dec 2024	-		5.658	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	Sedna Digital, : Manassas, VA	59.629	4.114	Dec 2022	4.196	Dec 2023	4.280	Dec 2024	-		4.280	Continuing	Continuing	Continuing
		Subtotal	249.891	9.553		9.743		9.938		-		9.938	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : Norfolk, VA	13.126	0.508	Dec 2022	0.518	Dec 2023	0.529	Dec 2024	-		0.529	Continuing	Continuing	Continuing
		Subtotal	13.126	0.508		0.518		0.529		-		0.529	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604503N / *SSN-688 & Trident Modernization*	Project (Number/Name) 0219 / *Sub Sonar Improvement (ENG)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Services	C/FFP	Alion, BAH, AECOM : Washington, DC	17.716	0.638	Dec 2022	0.650	Dec 2023	0.663	Dec 2024	-		0.663	Continuing	Continuing	Continuing
Travel	WR	NAVSEA : Washington, DC	2.907	0.094	Dec 2022	0.096	Dec 2023	0.099	Dec 2024	-		0.099	Continuing	Continuing	Continuing
		Subtotal	20.623	0.732		0.746		0.762		-		0.762	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,279.216	58.246		60.822		62.874		-		62.874	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0219 / *Sub Sonar Improvement (ENG)*

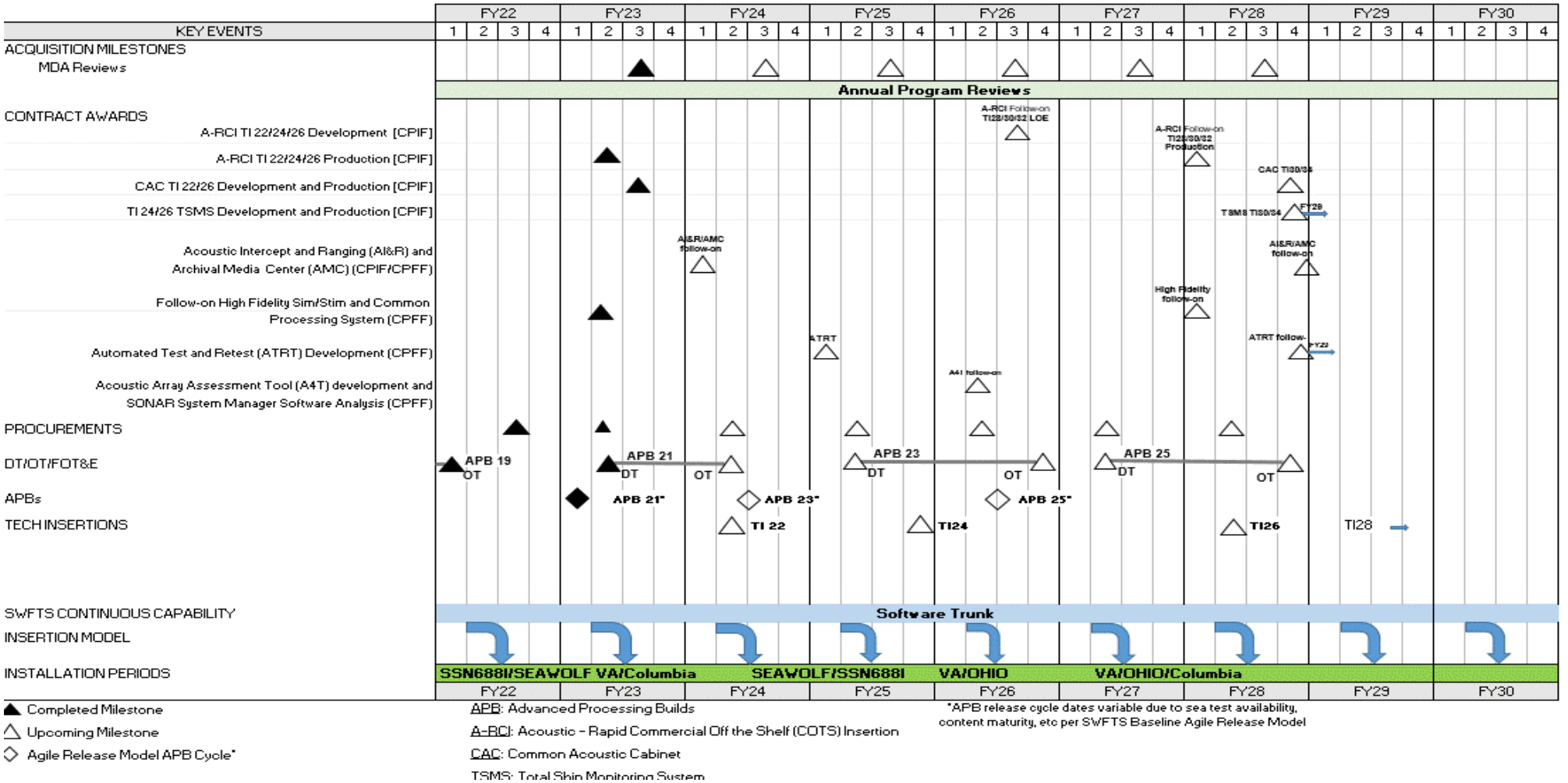

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0219 / *Sub Sonar Improvement (ENG)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0219				
ACOUSTICS	3	2023	4	2029
---Acquisition Milestones - Acoustics	3	2023	3	2029
---Annual Program Reviews - Acoustics	1	2023	4	2029
---Contract Awards - Acoustics	3	2023	1	2029
---Procurements - Acoustics	2	2023	2	2029
---DT/OT/FOT&E Tests	2	2023	2	2029
---APB Deliveries	2	2024	2	2029
---Tech Insertions	1	2023	1	2029
---Installation Periods - Acoustics	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604503N / *SSN-688 & Trident Modernization*	Project (Number/Name) 0775 / *Submarine Supt Equip Prog*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0775: *Submarine Supt Equip Prog*	134.739	31.902	32.613	35.079	-	35.079	34.808	34.163	34.759	35.470	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AN/BLQ-10 Electronic Warfare (EW) system will continue to add new capabilities via Technical Insertion (TI)/Advanced Processing Build (APB) while working across Submarine Warfare Federated Tactical System (SWFTS) programs to transition to Development Security Operations (DevSecOps) software processes and migrate to a cloud based architecture. The Navy is pursuing a transformation across SWFTS (PE 0604503N Project 0219, PE 0604562N Project 0236, PE 0604777N Project 0253 and PE 0604503N Project 0775) to maximize cyber-resiliency and the speed of capability delivery. Major capabilities that will be pursued in FY25 include a server-based RADAR Wide Band capability, upgraded and new tactical software solutions, and a Submarine Tethered Expendable Buoy (STEB).

The Submarine Support Equipment Program (SSEP) is responsible for the development and improvement of submarine EW systems in support of effective operations in the following mission areas: Joint Littoral Warfare; Joint Intelligence Surveillance Reconnaissance (ISR), Indications and Warnings; Electronic Warfare; Information Operations including Cyber; and Special Operations Force (SOF) support. The rapid proliferation of complex radar, communications and navigation equipment available to potential adversaries creates an increasingly dense and sophisticated electromagnetic environment. Sustained and significant improvements to submarine EW systems are required to maintain tactical ship safety and operational effectiveness. As such, EW was raised to a submarine primary mission area in FY2012 by Commander Submarine Forces, and EW is listed as a Tier 1 modernization requirement by the Submarine Tactical Requirements Group (STRG).

TI-24 provides the VA Class a server-based Radar Wide Band capability. Additionally, TI-24 looks to improve the basic cloud based architecture developed during TI-20 and TI-22 as well as integrate new generations of EW Payloads. Funding is critical to developing enabling technologies that will provide maximized electronic spectrum digitization and processing, allowing Submarine EW system to continue to pace the threat.

STEB is a 3" Launcher deployed, expendable, free-floating buoy that will communicate with the submarine through a fiber-optic tether providing imaging, Radar Indications and Warning, Radar Direction Finding, and communications.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Submarine Support Equipment Program	31.902	32.613	35.079	0.000	35.079
Articles:	-	-	-	-	-
FY 2024 Plans: -- In the SWFTS TI/APB model, continue development of a server-based RADAR wide band capability for incorporation into the AN/BLQ-10 system to enhance the capabilities of the VA class ships.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0775 / *Submarine Supt Equip Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
-- APB-23 development and integration into TI-22 and TI-24 baselines. -- TI-24 development, design, integration, configuration, architecture documentation, and software design. -- APB-21 development and integration into TI-22 baseline. -- APB-21 development and integration into TI-20 baseline. -- Update AN/BLQ-10 software baseline changes for SWFTS and NPES, SPR Resolution and Software Enhancement via the APB process to fully utilize the new technology being fielded in TI-22 and TI-24 with broader spectrum digitization. -- Coordinate with ONR and NUWC Newport to develop Future Naval Capabilities (FNCs) to a high technology readiness level and transition to EW systems as appropriate. -- Develop advanced technology demonstrations. ***FY 2025 Base Plans:*** The $2.466M increase in FY25 is for the development of STEB, TI-24, and APB capabilities. This includes the engineering, technical program, and project and configuration management for the hardware and software baseline and modifying the architecture to support rapid insertion of new warfighting capabilities and enhanced cyber security protection. Specific efforts include: -- Development of a server-based RADAR wide band capability for incorporation into the AN/BLQ-10 system. -- TI-24 development, design, integration, configuration, architecture documentation, and software design. -- APB-21 development and integration into TI-22 baseline. -- APB-23 development and integration into TI-22 and TI-24 baselines. -- STEB development, design, integration, configuration, architecture documentation, and software design. STEB will build off a prototype currently in development. FY25 RDTE funding will be used to pursue additional communications and imaging capabilities not resident in the current prototype. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The $2.466M FY25 funding increase is for STEB development, which is a major capability that will be pursued in FY25 and will allow the free-floating buoy to communicate with the submarine through a fiber-optic tether providing imaging, Radar Indications and Warning, Radar Direction Finding, and communications. STEB					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0775 / *Submarine Supt Equip Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
will build off a prototype currently in development. FY25 RDTE funding will be used to pursue additional communications and imaging capabilities not resident in the current prototype. The FY25 funding increase also supports the development of TI-24 and APB capabilities.					
Accomplishments/Planned Programs Subtotals	31.902	32.613	35.079	0.000	35.079

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/0840: *Sub Periscope, Imaging and Supt Equip Prog*	261.011	262.951	294.625	-	294.625	286.499	301.351	331.662	329.349	Continuing	Continuing

Remarks

D. Acquisition Strategy

AN/BLQ-10 EW System - Procurements are executed/managed in accordance with Acquisition Plan (Rev 10) for AN/BLQ-10 EW System dtd 02/01/17, Single Acquisition Management Plan dtd 06/12/14, Individual Streamlined Acquisition Plan (Rev 0) for AN/BLQ-10 dtd 04/09/18, and the AN/BLQ-10 Acquisition Strategy dtd 01/28/13.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604503N / *SSN-688 & Trident Modernization*	Project (Number/Name) 0775 / *Submarine Supt Equip Prog*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
H/W and S/W Development	Various	Various : Various	7.251	3.512	Oct 2022	3.286	Oct 2023	5.162	Oct 2024	-		5.162	Continuing	Continuing	Continuing
H/W and S/W Development	WR	NUWC : Newport, RI	21.895	1.288	Oct 2022	1.767	Oct 2023	1.802	Oct 2024	-		1.802	Continuing	Continuing	Continuing
H/W and S/W Development (EW TI/APB)	C/CPIF	Lockheed Martin : Syracuse, NY	81.402	26.300	Oct 2022	26.685	Oct 2023	27.218	Oct 2024	-		27.218	Continuing	Continuing	Continuing
PATRIOT Phase C Development	C/CPIF	Lockheed Martin : Syracuse, NY	4.100	0.000		0.000		0.000		-		0.000	0.000	4.100	-
		Subtotal	114.648	31.100		31.738		34.182		-		34.182	Continuing	Continuing	N/A

Remarks

FY25 funding increase in Hardware and Software Development (Various) is for STEB development.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	OTF : Norfolk, VA	2.395	0.136	Oct 2022	0.173	Oct 2023	0.181	Oct 2024	-		0.181	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	17.696	0.666	Oct 2022	0.702	Oct 2023	0.716	Oct 2024	-		0.716	Continuing	Continuing	Continuing
		Subtotal	20.091	0.802		0.875		0.897		-		0.897	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	134.739	31.902		32.613		35.079		-		35.079	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0775 / *Submarine Supt Equip Prog*

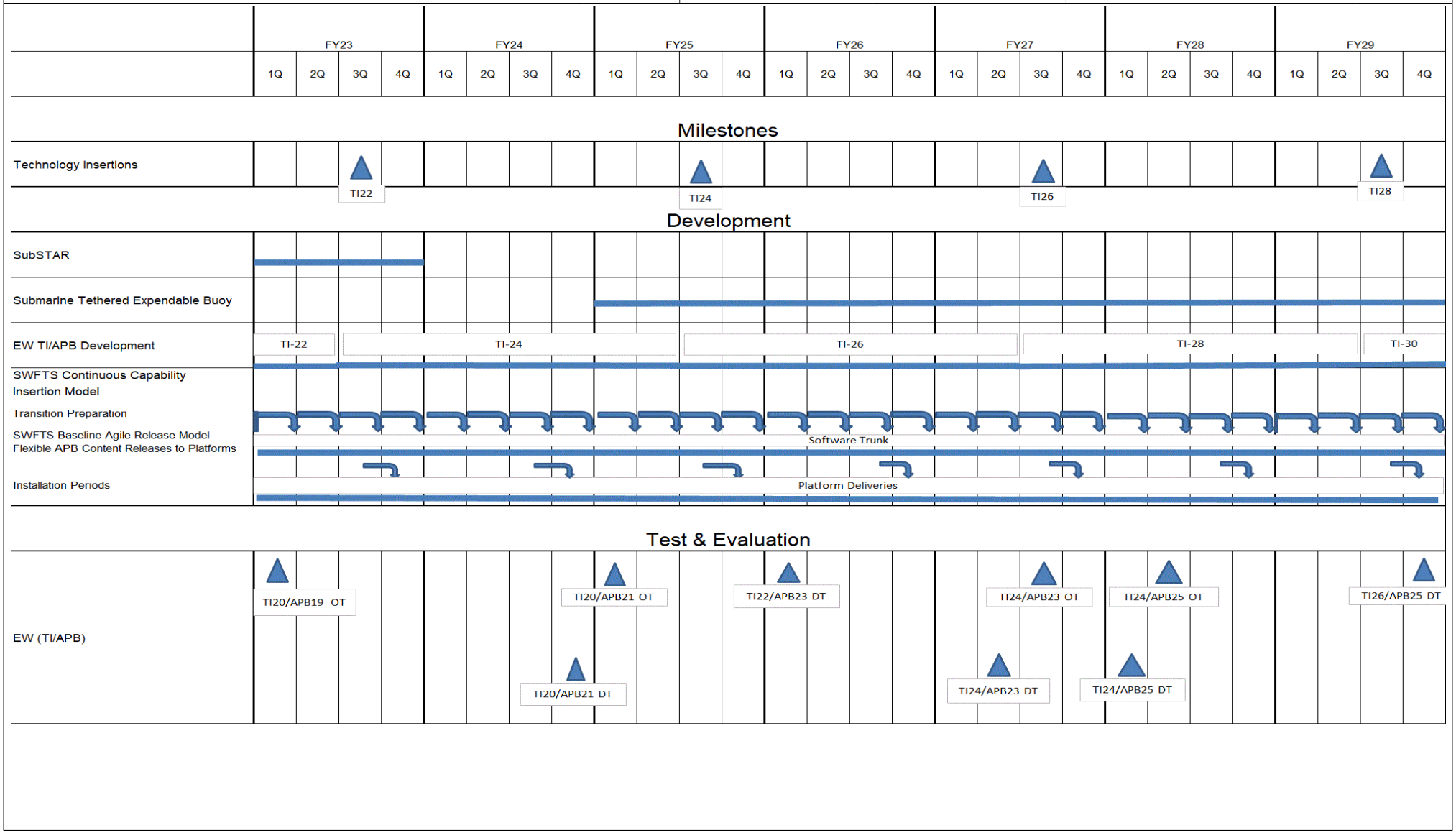

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0775 / *Submarine Supt Equip Prog*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0775				
Milestones: Technology Insertions: TI-22	3	2023	3	2023
Milestones: Technology Insertions: TI-24	3	2025	3	2025
Milestones: Technology Insertions: TI-26	3	2027	3	2027
Milestones: Technology Insertions: TI-28	3	2029	3	2029
Development: SubSTAR: SubSTAR	1	2023	4	2023
Development: Submarine Tethered Expendable Buoy: Submarine Tethered Expendable Buoy	1	2025	4	2029
Development: EW TI/APB Development: EW TI/APB Development: TI-22 (with APB-21 and APB-23)	1	2023	2	2023
Development: EW TI/APB Development: EW TI/APB Development: TI-24 (with APB-23)	3	2023	2	2025
Development: EW TI/APB Development: EW TI/APB Development: TI-26	3	2025	2	2027
Development: EW TI/APB Development: EW TI/APB Development: TI-28	3	2027	2	2029
Development: EW TI/APB Development: EW TI/APB Development: TI-30	3	2029	4	2029
Test and Evaluation: EW (TI/APB): TI-20/APB-19: Operational Testing	1	2023	1	2023
Test and Evaluation: EW (TI/APB): TI-20/APB-21: Developmental Testing	4	2024	4	2024
Test and Evaluation: EW (TI/APB): TI-20/APB-21: Operational Testing	1	2025	1	2025
Test and Evaluation: EW (TI/APB): TI-22/APB-23: Developmental Testing	1	2026	1	2026
Test and Evaluation: EW (TI/APB): TI-24/APB-23: Developmental Testing	2	2027	2	2027
Test and Evaluation: EW (TI/APB): TI-24/APB-23: Operational Testing	3	2027	3	2027
Test and Evaluation: EW (TI/APB): TI-24/APB-25: Developmental Testing	1	2028	1	2028
Test and Evaluation: EW (TI/APB): TI-24/APB-25: Operational Testing	2	2028	2	2028

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604503N / *SSN-688 & Trident Modernization*	**Project (Number/Name)** 0775 / *Submarine Supt Equip Prog*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: EW (TI/APB): TI-26/APB-25: Operational Testing	4	2029	4	2029