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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604777N / <i>Navigation/Id System</i>
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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	416.574	58.069	45.262	44.326	-	44.326	44.060	44.685	45.503	46.438	Continuing	Continuing
0253: <i>Nav & Electro-Optical Supt</i>	146.155	48.230	39.236	39.086	-	39.086	39.811	40.361	41.063	41.903	Continuing	Continuing
0676: <i>Improve ID Development</i>	75.555	1.236	3.710	3.156	-	3.156	2.236	2.275	2.335	2.386	Continuing	Continuing
1253: <i>Combat Ident System</i>	193.706	1.845	2.316	2.084	-	2.084	2.013	2.049	2.105	2.149	Continuing	Continuing
9999: <i>Congressional Adds</i>	1.158	6.758	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.916

A. Mission Description and Budget Item Justification

Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. The Photonics Imaging System (0253) is a non-hull penetrating replacement for existing optical periscopes. The Photonics Imaging System exploits a wide portion of the electro-magnetic spectrum utilizing advanced Electro-Optic/thermal imaging, and communications intercept/Electronic Warfare Support (ES). The Integrated Submarine Imaging System (ISIS) (0253) is a back fit system to integrate all imaging capabilities on existing submarine classes. The Combat Identification System (CIS) project (1253) for Mark XIIA, and Improved Identification Development (0676) for AN/UPX-29(V), covers the Mark XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and North Atlantic Treaty Organization (NATO) interoperable. Per Office Secretary of Defense (OSD) direction, NATO participation is encouraged and performance data is exchanged to ensure the opportunity for interoperability with allied identification systems is maximized. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems).

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	60.209	45.262	44.996	-	44.996
Current President's Budget	58.069	45.262	44.326	-	44.326
Total Adjustments	-2.140	0.000	-0.670	-	-0.670
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.078	0.000			
• SBIR/STTR Transfer	-2.062	0.000			
• Program Adjustments	0.000	0.000	-0.081	-	-0.081
• Rate/Misc Adjustments	0.000	0.000	-0.589	-	-0.589

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity
 1319: *Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)*

R-1 Program Element (Number/Name)
 PE 0604777N / *Navigation/Id System*

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Micro 5 IFF interrogator*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

FY 2023	FY 2024
6.758	0.000
6.758	0.000
6.758	0.000

Change Summary Explanation

FY2025 decrease driven by the completion of the Signature Reduction Mast Prototype.

FY2023 decreases of \$2.062 million due to SBIR and \$0.078 million due to Cancelled Account Liabilities.

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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 0604777N / Navigation/Id System				Project (Number/Name) 0253 / Nav & Electro-Optical Supt			
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
0253: Nav & Electro-Optical Supt	146.155	48.230	39.236	39.086	-	39.086	39.811	40.361	41.063	41.903	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AN/BVY-1 Integrated Submarine Imaging System (ISIS) 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 develop according to Development Security Operations (DevSecOps) software processes and 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. FY25 maintains the investment in imaging sensors and algorithms to improve submarine operations in high intensity littoral environments, intelligence gathering, real time imagery, and supports the safe and effective employment of surveillance and weapons systems. Funding also supports the commencement of the Type 26 Mast Capability Enhancement development, improvements to inboard hardware for processing outboard mast data, and supports non-recurring inboard hardware engineering activities which develop the Technical Insertion kits installed in all submarine classes. Finally, FY25 funds the TI-20/APB21 OT and other tests that verify software improvements funded in previous fiscal years.

The Navigation and Electro-Optical (E-O) program enables littoral operations by procuring ISIS, production of low profile masts (Low Profile Photonics Mast (LPPM), Type 20, and Type 24), maintenance and sustainment of periscope and legacy photonic masts, production and sustainment of Universal Modular Mast Systems and Dip Loops, and development of the ISIS inboard processing component of Submarine Warfare Federated Tactical Systems (SWFTS). The Department of the Navy established the ISIS to rapidly field the Type 18 periscope, RADAR rangefinder, Type 8 Mod 4 Infra-Red (IR) periscope systems, and integrate existing periscope imagery systems into a single imaging system for installation on board SSN 688 class and SEAWOLF class submarines. The ISIS baseline also includes the Imaging System with the Photonics mast (PM) and all configurations of low profile masts onboard VIRGINIA and Photonics Mast Variant (PMV) onboard SSGN class submarines and ISIS on SSBN class submarines. The PM, LPPM, and PMV design exploit a wide portion of the electro-magnetic spectrum through advanced E-O and thermal imaging and Electronic Warfare Support (ES)/communications intercept. The Common Submarine Imaging System (CSIS) capability development document (CDD), that covers both ISIS and Legacy Imaging systems was approved 22 Dec 2011 with an updated CDD approved on 15 Mar 2018. The CDD Annex for Low Profile Digital Photonics Mast, approved on 02 Dec 2019, provides additional specifications for the development of low profile masts within the ISIS system.

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

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: ISIS and Photonics common software and hardware capabilities development and obsolescence	24.863	29.284	29.307	0.000	29.307
Articles:	-	-	-	-	-
FY 2024 Plans:					

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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 0604777N / Navigation/Id System	Project (Number/Name) 0253 / Nav & Electro-Optical Supt

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p>Continues the development of TI-24 capabilities which includes the engineering, technical program, project and configuration management for the hardware and software baseline and modifying the ISIS architecture to support rapid insertion of new war fighting capabilities and enhanced cyber security protection.</p> <p>FY 2025 Base Plans: Commence the TI-26 capability development process which provides the necessary engineering, technical program, project and configuration management of the hardware and software baseline to incorporate additional sensitive software imaging algorithms, while concluding the development of TI-24.</p> <p>FY 2025 OCO Plans: N/A</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: The \$0.023M increase is due to inflation adjustment which will fund the design, management, and evaluation results of the TI-26 for modernizing boats and conclusion of the development of TI-24.</p>					
<p>Title: Imaging Systems Test Efforts</p> <p align="right">Articles:</p> <p>FY 2024 Plans: Inflationary increase to fund ISIS and mast system testing including the TI-20/APB21 DT.</p> <p>FY 2025 Base Plans: Inflationary increase to fund ISIS and mast system testing including the TI-20/APB-21 OT.</p> <p>FY 2025 OCO Plans: N/A</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: The \$0.016M increase is due to inflation adjustment to fund ISIS and mast system testing including the TI-20/APB-21 OT.</p>	0.778 -	0.794 -	0.810 -	0.000 -	0.810 -
<p>Title: Type 24 Mast</p> <p align="right">Articles:</p> <p>FY 2024 Plans: Specific efforts include: - Continue the test plans and commencement of test activities - Completion of development activities</p>	11.173 -	9.158 -	8.969 -	0.000 -	8.969 -

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System	Project (Number/Name) 0253 / Nav & Electro-Optical Supt

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Commence enhancement development to be incorporated into Type 24 mast FY 2025 Base Plans: Continued Type 24 Mast Capability Enhancement development of technology candidates to engineering change proposals and improvements. FY 2025 OCO Plans: N/A FY 2024 to FY 2025 Increase/Decrease Statement: The \$0.189M decrease is due to additional funds shifted to the commencement of the TI-26 capability development.					
Title: Signature Reduction Mast Prototype FY 2024 Plans: N/A FY 2025 Base Plans: N/A FY 2025 OCO Plans: N/A	11.416	0.000	0.000	0.000	0.000
Articles:	1	-	-	-	-
Accomplishments/Planned Programs Subtotals	48.230	39.236	39.086	0.000	39.086

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

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

Remarks

D. Acquisition Strategy

The Acquisition Strategy for AN/BVY-1 Integrated Submarine Imaging System (ISIS) is dated 07 Jul 2003. The Single Acquisition Management Plan (SAMP) for the LPPM is dated 01 Jul 2013. The ISIS will provide mission critical, all weather, visual, and electronic search, digital image management, indication, warning, and platform

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
1319 / 5	PE 0604777N / <i>Navigation/Id System</i>	0253 / <i>Nav & Electro-Optical Supt</i>

architecture interface capabilities for SSN 688, SSN 21, SSN 774 and SSGN class submarines. The Single Acquisition Management Plan (SAMP) for the Type 20 Mast is dated 07 Jul 2017.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604777N / Navigation/Id System				0253 / Nav & Electro-Optical Supt							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPIF	Lockheed Martin : Manassas, VA	53.099	10.469	Dec 2022	12.627	Dec 2023	12.597	Dec 2024	-		12.597	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC : Newport, RI	29.229	4.973	Nov 2022	5.072	Nov 2023	5.173	Nov 2024	-		5.173	Continuing	Continuing	Continuing
Hardware Development	C/CPIF	Lockheed Martin : Manassas, VA	44.981	9.368	Dec 2022	11.531	Dec 2023	11.482	Dec 2024	-		11.482	Continuing	Continuing	Continuing
Hardware Development - Type 24/Mast Capability Enhancements	C/CPIF	L-3 KEO : Northampton, MA	5.502	11.173	Jan 2023	9.158	Jan 2024	8.969	Jan 2025	-		8.969	Continuing	Continuing	Continuing
Signature Reduction Mast Prototype	C/CPIF	L-3 KEO : Northampton, MA	0.000	11.416	Jan 2023	0.000		0.000		-		0.000	0.000	11.416	-
Subtotal			132.811	47.399		38.388		38.221		-		38.221	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	10.038	0.487	Oct 2022	0.497	Oct 2023	0.507	Oct 2024	-		0.507	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	2.487	0.291	Oct 2022	0.297	Oct 2023	0.303	Oct 2024	-		0.303	Continuing	Continuing	Continuing
Subtotal			12.525	0.778		0.794		0.810		-		0.810	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	NAVSEA : Washington, DC	0.819	0.053	Oct 2022	0.054	Oct 2023	0.055	Oct 2024	-		0.055	Continuing	Continuing	Continuing
Subtotal			0.819	0.053		0.054		0.055		-		0.055	Continuing	Continuing	N/A

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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 0604777N / <i>Navigation/Id System</i>				Project (Number/Name) 0253 / <i>Nav & Electro-Optical Supt</i>					
	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	146.155	48.230		39.236		39.086		-		39.086	Continuing	Continuing	N/A

Remarks

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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 0604777N / <i>Navigation/Id System</i>	Project (Number/Name) 0253 / <i>Nav & Electro-Optical Supt</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Nav & Electro-Optical Supt</i>				
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-22)	3	2023	3	2023
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-24)	3	2025	3	2025
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-26)	3	2027	3	2027
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-28)	3	2029	3	2029
Developments: ISIS APB: ISIS TI-22	1	2023	3	2023
Developments: ISIS APB: ISIS TI-24	3	2023	2	2025
Developments: ISIS APB: ISIS TI-26	3	2025	2	2027
Developments: ISIS APB: ISIS TI-28	3	2027	2	2029
Developments: ISIS APB: Developments: Signature Reduction Mast Prototype	2	2023	4	2024
Developments: Mast Development: Type 24	1	2023	2	2024
Developments: Mast Development: Type 24 Mast Capability Enhancement (MCE)	4	2024	2	2026
Developments: Mast Development: Type 28 Mast	4	2026	2	2028
Developments: Mast Development: Type 28 Mast Capability Enhancement (MCE)	4	2028	4	2029
Mast Procurement: Type 20 (Buy): CCM / POR Masts 6-8	2	2023	2	2023
Mast Procurement: Type 24 (Buy): POR Masts 1-4	2	2024	2	2024
Mast Procurement: Type 24 (Buy): POR Masts 5-9	2	2025	2	2025
Mast Procurement: Type 24 (Buy): POR Masts 10-13	2	2026	2	2026
Mast Procurement: Type 24 (Buy): POR Masts 14-17	2	2027	2	2027
Mast Procurement: Type 28 (Buy): POR Masts 1-4	2	2028	2	2028

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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 0604777N / Navigation/Id System	Project (Number/Name) 0253 / Nav & Electro-Optical Supt
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Mast Procurement: Type 28 (Buy): POR Masts 5-8	2	2029	2	2029
Test & Evaluation: ISIS (TI/APB): TI-22/APB-21 DT	2	2023	2	2023
Test & Evaluation: ISIS (TI/APB): TI-20/APB-21 DT	4	2024	4	2024
Test & Evaluation: ISIS (TI/APB): TI-20/APB-21 OT	1	2025	1	2025
Test & Evaluation: ISIS (TI/APB): TI-22/APB-23 DT	1	2026	1	2026
Test & Evaluation: ISIS (TI/APB): TI-24/APB-23 DT	2	2027	2	2027
Test & Evaluation: ISIS (TI/APB): TI-24/APB-23 OT	3	2027	3	2027
Test & Evaluation: ISIS (TI/APB): TI-24/APB-25 DT	1	2028	1	2028
Test & Evaluation: ISIS (TI/APB): TI-24/APB-25 OT	2	2028	2	2028
Test & Evaluation: ISIS (TI/APB): TI-26/APB-25 DT	4	2029	4	2029

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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 0604777N / Navigation/Id System				Project (Number/Name) 0676 / Improve ID Development			
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
0676: <i>Improve ID Development</i>	75.555	1.236	3.710	3.156	-	3.156	2.236	2.275	2.335	2.386	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. In addition to providing platform identification for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and Air Traffic Control. The Improved ID Development project addresses the Mark XIIA Mode 5 and Mode Select (S) upgrades to the existing AN/UPX-29(V) Mark XII family of systems that is Joint and North Atlantic Treaty Organization interoperable, as well as modernization of the DDG 1000 Zumwalt Class IFF Sensor Suite. The AN/UPX-29(V) Interrogator System is comprised of the Interrogator Set AN/UPX-24(V), OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment including but not limited to AN/UPX-41(C), AN/UPX-45(C), or AN/UPX-50(C) Digital Interrogators (DI) and associated equipment. The DDG 1000 IFF Sensor Suite is comprised of three electronically scanned array (ESA) antennas, one UPX-42(C) Interrogator, and three RT-1912(C)/APX Transponders. Additionally, the Improved ID Development project may include product improvements designed to be installed through upgrade and deficiency correction studies, which in turn become engineering changes to other IFF solutions.

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

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Mark XIIA Mode 5 and Mode S Improvement for AN/UPX-29(V)	0.229	0.463	0.578	0.000	0.578
Articles:	-	-	-	-	-
Description: Engineering, development, and integration of improvements to Mark XIIA Shipboard Identification Friend or Foe (IFF) Systems, including, but not limited to 1) AN/UPX-29(V) Interrogator System, which is comprised of the Interrogator Set AN/UPX-24, OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment such as AN/UPX-41, AN/UPX-45 or AN/UPX-50 Digital Interrogators, and 2) AN/UPX-46(V) Interrogator System which is comprised reduced form factor Interrogator Set, generic rotating IFF Antennas, and Mark XII or Mark XIIA equipment such as AN/UPX-41, AN/UPX-45 or AN/UPX-50 Digital Interrogators. Funds development and integration of Mark XIIA Mode 5 and Mode Select (S) Improvements to the AN/UPX-29(V) systems on CG47, DDG51, LHD1, LPD17, LHA6, and CVN68, CVN78, and future ship classes. Funds development and integration of Mark XIIA Mode 5 and Mode Select (S) Improvements to the AN/UPX-46 Systems on LCS1, LCS2, LSD41 and LSD49 Ship Classes. Correct software and performance deficiencies from Integrated Test and Operational Test, Aegis, and other Combat System Integration events to support Combat System integration with Aegis Weapon Systems (AWS), Ship Self Defense System (SSDS), Component-Based Total-Ship System - 21st Century (COMBATSS-21), Advanced Combat Direction System (ACDS), or Air Traffic Control Systems using Mark XIIA equipment to include engineering investigations, Engineering Change Proposal development, and testing. Provides core Integrated Logistics Support documentation; formalizes					

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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 0604777N / Navigation/Id System	Project (Number/Name) 0676 / Improve ID Development
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
hardware/software configuration: finalizes technical/ design data, resolves testing anomalies, and integrates with shipboard training systems.					
<p>FY 2024 Plans: Continue AN/UPX-29(V) Interrogator System integration testing with Mode 5/Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades in preparation for deployment to Aegis and Ship Self Defense System (SSDS) Platforms. Continue AN/UPX-46(V) Interrogator System integration testing with Mode 5/ Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades for deployment to COMBATTTS-21 Platforms. Continue to evaluate inter-operability test data to validate planned combat systems design changes and capability updates.</p> <p>FY 2025 Base Plans: Continue AN/UPX-29(V) Interrogator System integration testing with Mode 5/Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades in preparation for deployment to Aegis and Ship Self Defense System (SSDS) Platforms on LPD, LHA and CVN Class ships. Continue AN/UPX-46(V) Interrogator System integration testing with Mode 5/Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades for deployment to COMBATTTS-21 Platforms. Continue to evaluate inter-operability test data to validate planned combat systems design changes and capability updates.</p> <p>FY 2025 OCO Plans: N/A</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Increase due to plans for continued oversight of Mode 5 and Mode S integration events and test data analysis for upgrading Contractor Furnished Equipment (CFE) IFF systems to the AN/UPX-46 configuration and Mode S platform certification flight testing.</p>					
<p>Title: AN/UPX-29(V) Management Support</p> <p align="right">Articles:</p> <p>Description: Engineering and Program Management of the AN/UPX-29(V) and AN/UPX-46(V) Interrogator Systems. Perform related system integration efforts.</p> <p>FY 2024 Plans: Continue logistics and technical data management for the AN/UPX-29(V) Mode 5/Mode S integration. Develop improved cyber designs and cyber security controls for implementation in future software releases. Assess cyber</p>	0.228	0.729	0.744	0.000	0.744
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
software assurance tools for applicability to IFF products. Assume management of AN/UPX-46(V) ship change documents for LCS 1 and LCS 2 ship classes.					
FY 2025 Base Plans: Continue logistics and technical data management for the AN/UPX-29(V) Mode 5/Mode S integration. Develop improved cyber designs and cyber security controls for implementation in future software releases. Assess cyber software assurance tools for applicability to IFF products.					
FY 2025 OCO Plans: N/A					
FY 2024 to FY 2025 Increase/Decrease Statement: No significant change.					
Title: UPX-36 Engineering Change Proposal - Mode 5 Capable					
Articles:					
Description: Upgrade the AN/UPX-36(V) from Mark XII to Mark XIIA with Mode 5 capability. The AN/UPX-36(V) is a centralized Identification Friend or Foe (IFF) interrogator system consisting of a processor, dedicated IFF antennas, and Mark XII interrogation capability providing identification of friendly and neutral contacts via cooperative means. System installations are limited to the 10 LSD41/49 class ships currently in-service.					
FY 2024 Plans: Continue system integration efforts. Continue to provide technical documentation to support combat system certification with SSDS Mark II combat system for LSD 41 and LSD 49 ship classes as configured. Complete AIMS certification interoperability testing and commence weapons system certification process.					
FY 2025 Base Plans: Complete weapons system certification process and finalize system retrofit plans.					
FY 2025 OCO Plans: N/A					
FY 2024 to FY 2025 Increase/Decrease Statement: Increase due to installation of prototype systems at Surface Combat Systems Center, Wallops Island, for Ship Self Defense System (SSDS) baselines with land based testing events to verify proper UPX-36 integration.					
Title: Radar Track Discriminator System (RTDS) UPX-34A ECP Part I					
	0.183	0.796	1.214	0.000	1.214
	-	-	-	-	-
	0.596	1.722	0.620	0.000	0.620

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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 0604777N / Navigation/Id System	Project (Number/Name) 0676 / Improve ID Development
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Articles:	-	-	-	-	-
<p>Description: Capability upgrades to the AN/UPX-34A(V) RTDS, which is installed on CG47 Class Aegis Cruisers and provides high fidelity, long range, Non-cooperative Target Recognition (NCTR) capability to support the Air-Sea battle by providing timely tactical engagement decisions by Aegis action officers.</p> <p>FY 2024 Plans: Provide technical documentation to support combat system certification of RTDS upgrades with Aegis combat system on CG47 ship class.</p> <p>FY 2025 Base Plans: Continue concept refinement and evaluation of new performance capabilities for RTDS system modernization. Conduct initial AEGIS combat system integration.</p> <p>FY 2025 OCO Plans: N/A</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Decrease due to the transition from development testing in FY24 at Surface Combat Systems Center, Wallops Island, for Aegis baselines to verify the system design in FY25. New capability updates require testing and integration to verify proper UPX-34A replacement to Aegis host platform integration.</p>					
Accomplishments/Planned Programs Subtotals	1.236	3.710	3.156	0.000	3.156

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/2851: ID Systems	59.226	59.234	59.602	-	59.602	61.070	62.323	63.780	65.164	90.461	953.660

Remarks

D. Acquisition Strategy

The acquisition strategy is to develop Mode 5 and Mode S Engineering Change Proposals for modern Mark XII Identification Friend or Foe (IFF) equipment and integrate into all Navy Combat Weapons systems platforms and augment the Navy's Cooperative Identification Capability to include Mode 5 and Mode S.

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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 0604777N / Navigation/Id System	Project (Number/Name) 0676 / Improve ID Development
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Primary Hardware Development	WR	NAWCAD : St Inigoes, MD	11.368	0.200	Nov 2022	0.850	Nov 2023	1.053	Nov 2024	-		1.053	Continuing	Continuing	Continuing
Ship Integration	WR	NAWCAD : St Inigoes, MD	2.821	0.124	Nov 2022	0.200	Nov 2023	0.204	Nov 2024	-		0.204	0.000	3.349	-
Systems Engineering	WR	NAWCAD : St Inigoes, MD	8.096	0.204	Nov 2022	0.392	Nov 2023	0.458	Nov 2024	-		0.458	0.000	9.150	-
DDG 1000 Development	C/FFP	Raytheon : Tewksbury, MA	2.549	0.000		0.000		0.000		-		0.000	0.000	2.549	-
OE-120 Tech Refresh	SS/FFP	BAE : Nashua, NH	18.810	0.000		0.000		0.000		-		0.000	0.000	18.810	15.483
RTDS UPX-34A ECP Part I	WR	NAWCAD : St Inigoes, MD	9.705	0.125	Nov 2022	0.130	Nov 2023	0.000		-		0.000	0.000	9.960	-
UPX-36 ECP Part I	WR	NAWCAD : St Inigoes, MD	2.522	0.171	Nov 2022	0.178	Nov 2023	0.000		-		0.000	0.000	2.871	-
Subtotal			55.871	0.824		1.750		1.715		-		1.715	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Configuration Management	WR	NAWCAD : St Inigoes, MD	0.169	0.000		0.000		0.000		-		0.000	0.000	0.169	-
ILS	WR	NAWCAD : St Inigoes, MD	3.095	0.082	Nov 2022	0.083	Nov 2023	0.092	Nov 2024	-		0.092	0.000	3.352	-
Software Development	WR	NAWCAD : St Inigoes, MD	6.533	0.108	Nov 2022	0.117	Nov 2023	0.125	Nov 2024	-		0.125	0.000	6.883	-
Technical Data	WR	NAWCAD : St Inigoes, MD	2.377	0.076	Nov 2022	0.080	Nov 2023	0.082	Nov 2024	-		0.082	0.000	2.615	-
Training	WR	NAWCAD : St Inigoes, MD	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
Engineering	WR	NAWCAD : PAX River, MD	0.244	0.000		0.917	Nov 2023	0.935	Nov 2024	-		0.935	0.000	2.096	-
Subtotal			12.618	0.266		1.197		1.234		-		1.234	0.000	15.315	N/A

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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 0604777N / Navigation/Id System	Project (Number/Name) 0676 / Improve ID Development
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Mode 5 Improv Identification Dev	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones																												
Test & Evaluation Milestones																												
Deliveries																												
	Mode 5/S Prod. Line Insertion																											
	Mode 5/S SCDs																											
	Mode 5/S Host Platform Integration																											
	Mode 5/S FRP Deliveries																											
RTDS UPX-34A																												
	System Development (UPX-34A ECP)																											
UPX-36																												
	System Development (UPX-36 ECP)																											

2025PB - 0604777N - 0676

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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 0604777N / Navigation/Id System	Project (Number/Name) 0676 / Improve ID Development
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Mode 5 Improv Identification Dev</i>				
Deliveries: Mode 5/S - Production Line Insertion	1	2023	4	2029
Deliveries: Mode 5/S - Prepare and Evaluate ECPs/SCDs	1	2023	4	2029
Deliveries: Mode 5/S - Host Platform Integrations	1	2023	4	2029
Deliveries: Mode 5/S - FRP Deliveries	1	2023	4	2029
RTDS UPX-34A: System Development (UPX-34A ECP)	1	2023	4	2029
UPX-36: System Development (UPX-36 ECP)	1	2023	4	2029

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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 0604777N / <i>Navigation/Id System</i>				Project (Number/Name) 1253 / <i>Combat Ident System</i>			
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
1253: <i>Combat Ident System</i>	193.706	1.845	2.316	2.084	-	2.084	2.013	2.049	2.105	2.149	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MARK (MK) XIIA Mode 5 provides secure cooperative combat identification via Identification Friend or Foe (IFF). Mode 5 was developed in cooperation with North Atlantic Treaty Organization, with the DoD implementation governed by AIMS 03-1000A, AIMS 03-1000B and USN requirements defined in ORD # 577-06-01. IFF product improvements are designed to be installed through obsolescence mitigations, upgrades, technical refreshes, and deficiency correction studies, which in turn become engineering changes to IFF interrogators and transponders and their associated cryptographic material. Standards governed by AIMS 17-1000 and Crypto Modernization (CM) are required to be incorporated in future engineering changes.

The Navy MK XIIA Mode 5 program was approved for entry in Systems Development and Demonstration phase in August 2003 and into the Production and Deployment Phase and Low Rate Initial Production in July 2006, and Full Rate Production July 2012. The Navy Mode 5 program achieved Initial Operational Capability (IOC) in 2012 in accordance with the ORD. Mode 5 capable equipment was fielded in USN/USMC platforms in accordance with Joint Requirements Oversight Council Memorandums (047-07, 122-08 and 108-13) in support of Joint Mode 5 IOC in 2014 and Joint Full Operational Capability in FY2020. In order to maintain cooperative encrypted Combat Identification (CID) capabilities across the fleet, sustainment and new development efforts must continue into the foreseeable future. Studies for future leading-edge non-cooperative CID technologies are being investigated.

RDT&E articles include Mode 5 cryptographic modules and associated hardware and software changes for IFF interrogators and transponders, including, but not limited to: AN/APX-118/123, AN/APX-119, AN/APX-111, RT-2087/ZPX, and all associated test and support equipment. RDT&E units are required for government and contractor labs to support aircraft and ship integrations, test sites, test aircraft, and unmanned aircraft systems.

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

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Mode 5 Systems Engineering and Integrated Logistics Support (ILS)	0.241	0.808	0.824	0.000	0.824
Articles:	-	-	-	-	-
Description: Performed systems engineering and analysis in support of Mode 5 hardware/software development and engineering change proposals on Identification Friend or Foe (IFF) interrogators and transponders, including but not limited to: AN/APX-123 Common Digital Transponder, AN/APX-119 Transponder, AN/APX-111 Combined Interrogator Transponder, AN/ZPX-2087 Micro Transponder, Cryptographic Modules, Mode 5 Engineering Test Equipment, and Mode 5 support equipment.					
FY 2024 Plans:					

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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 0604777N / Navigation/Id System		Project (Number/Name) 1253 / Combat Ident System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
Continue research and development of APX-123 modernization to address cyber security, protective technologies, compliance with updated standards, and hardware obsolescence redesign.						
FY 2025 Base Plans: Continue development, testing, certification, and integration of the APX-123A tech refresh. Continue research into deployment of enhanced non-cooperative CID capabilities.						
FY 2025 OCO Plans: N/A						
FY 2024 to FY 2025 Increase/Decrease Statement: FY 2024 to FY 2025 increase due to inflation.						
Title: Mark XIIA Upgrade Developmental Test & Operational Test						
Articles:						
Description: Perform Mode 5 integrated and operational test phases for AN/APX-123A Common Transponder, AN/APX-119 Transponder, RT-2087/ZPX Micro Transponder, AN/APX-111 Combined Interrogator Transponder, and KIV-79 Crypto Applique.						
FY 2024 Plans: Continue small form factor IFF transponder testing. Continue testing of Mode 5 mitigating solutions for deploying platforms that did not meet Joint Full Operational Capability (JFOC).						
FY 2025 Base Plans: Continue RT-2087/ZPX and KIV-79 testing, integration, and certifications. Continue research into deployment of micro interrogator/reverse Mode 5 capability. Continue Mode 5 integration and testing on platforms.						
FY 2025 OCO Plans: N/A						
FY 2024 to FY 2025 Increase/Decrease Statement: Decrease is due to reduced DT/OT efforts in FY25.						
Accomplishments/Planned Programs Subtotals						
		1.604	1.508	1.260	0.000	1.260
		-	-	-	-	-
		1.845	2.316	2.084	0.000	2.084

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy	Date: March 2024
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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System	Project (Number/Name) 1253 / Combat Ident System
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/2851: ID Systems	59.226	59.234	59.602	-	59.602	61.070	62.323	63.780	65.164	90.461	953.660
• APN/0582: ID Sys	3.780	13.085	7.020	-	7.020	3.444	3.749	3.891	3.973	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Acquisition Strategy is to develop Mode 5 Engineering Change Proposals to modernize Mark XII Identification Friend or Foe (IFF) equipment or insert Mode 5 into existing platforms by JROC memorandums (047-07, 122-08 and 108-13). After integration into all Navy Combat Weapons systems platforms, the Navy will transition Cooperative Identification Capability to Mode 5.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604777N / Navigation/Id System				1253 / Combat Ident System							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : PAX River, MD	16.102	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : St Inigoes, MD	15.951	0.241	Nov 2022	0.808	Nov 2023	0.824	Nov 2024	-		0.824	Continuing	Continuing	Continuing
Primary Hardware Development	Various	Sikorsky : Stratford, CT	3.872	0.000		0.000		0.000		-		0.000	0.164	4.036	4.200
Prior Year Prod Dev Services costs no longer funded in FYDP	Various	Various : Various	90.857	0.000		0.000		0.000		-		0.000	0.000	90.857	43.213
Subtotal			126.782	0.241		0.808		0.824		-		0.824	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ILS	Various	Various : Various	5.344	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Support Services costs no longer funded in FYDP	Various	Various : Various	2.761	0.000		0.000		0.000		-		0.000	0.000	2.761	2.761
Subtotal			8.105	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : PAX River, MD	34.053	1.604	Nov 2022	1.508	Nov 2023	1.260	Nov 2024	-		1.260	7.705	46.130	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	Various	Various : Various	20.370	0.000		0.000		0.000		-		0.000	0.000	20.370	3.456
Subtotal			54.423	1.604		1.508		1.260		-		1.260	7.705	66.500	N/A

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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 0604777N / Navigation/Id System	Project (Number/Name) 1253 / Combat Ident System
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Increase from FY22 to FY23 is due to increased testing requirements of the small form factor IFF transponder.

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Year Mgmt Services costs no longer funded in FYDP	Various	Various : Various	4.396	0.000		0.000		0.000		-		0.000	0.000	4.396	4.396
Subtotal			4.396	0.000		0.000		0.000		-		0.000	0.000	4.396	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		193.706	1.845	2.316	2.084	-	2.084	Continuing	Continuing

Remarks

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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 0604777N / Navigation/Id System	Project (Number/Name) 1253 / Combat Ident System
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Combat Identification Systems	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																																
Milestones						▲ APX-123 Tech Refresh Award																										
Systems Development																																
Tech Refresh Hardware & Software									TR Development																							
	ECPs and SCDs																															
Test and Evaluation																																
Technical Evaluation													TR Test & Cert																			
	Micro Transponder & Interrogator																															
Operational Evaluation	Follow-on T & E																															
Deliveries																																
													APX-123A TR EMD Deliveries (Qty15)																			

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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 0604777N / Navigation/Id System	Project (Number/Name) 1253 / Combat Ident System

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Combat Identification Systems				
Acquisition Milestones: Milestones: APX-123 Tech Refresh Award	2	2024	2	2024
Systems Development: Tech Refresh Hardware & Software: TR Development	3	2024	4	2025
Systems Development: Tech Refresh Hardware & Software: Prepare & Evaluate ECPs/SCDs	1	2023	4	2029
Test and Evaluation: Technical Evaluation: TR Test & Cert	4	2025	4	2027
Test and Evaluation: Technical Evaluation: Micro Transponder & Interrogator	1	2023	4	2029
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation	1	2023	4	2029
Deliveries: FRP Deliveries	1	2026	3	2026

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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 0604777N / Navigation/Id System				Project (Number/Name) 9999 / Congressional Adds			
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
9999: <i>Congressional Adds</i>	1.158	6.758	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.916
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MARK (MK) XIIA Mode 5 provides improved secure cooperative combat identification via Identification Friend or Foe (IFF). Mode 5 is developed in cooperation with North Atlantic Treaty Organization, with the DoD implementation governed by AIMS 03-1000A, AIMS 03-1000B and USN requirements defined in ORD # 577-06-01. Research, development, and acquisition to support a micro IFF transponder/interrogator with Mode 5 in order to meet the space, weight, and power (SWaP) requirements for Group 2 and 3 Unmanned Aerial Vehicles (UAVs), and other unmanned systems.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2023	FY 2024
Congressional Add: Micro 5 IFF interrogator	6.758	0.000
FY 2023 Accomplishments: Small Business Innovation Research (SBIR) Contract award. Establish Baseline configuration of Micro Interrogator Lay-in Logistics support for Micro Transponder & Interrogator to provide for Fleet sustainability and operator training.		
FY 2024 Plans: N/A		
Congressional Adds Subtotals	6.758	0.000

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

N/A

Remarks

D. Acquisition Strategy

The Acquisition Strategy is to develop a micro IFF transponder/interrogator solution through Small Business Innovation Research (SBIR) and other government development organizations.

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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 0604777N / <i>Navigation/Id System</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Navy micro interrogator	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Development		Preliminary/Critical Design Review (P/CDR) ◆	Prototype Delivery ◆	Phase 3 ◆ Prototype Testing ◆																												

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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 0604777N / <i>Navigation/Id System</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Navy micro interrogator</i>				
Development: Preliminary/Critical Design Review (P/CDR)	2	2023	2	2023
Development: Phase 3 Contract	4	2023	4	2023
Development: Prototype Delivery	3	2023	3	2023
Development: Prototype Testing	4	2023	4	2023
<i>Micro 5 IFF interrogator</i>				
Development: SBIR Contract Award	4	2023	4	2023
Development: Development Baseline configuration of Micro Interrogator	4	2023	4	2024