

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy **Date:** May 2021

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0303354N / <i>ASW Systems Development - MIP</i>							
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	62.820	9.991	9.151	8.571	-	8.571	-	-	-	-	-	-
0490: <i>Airborne Acoustic Intelligence (AAI)</i>	62.820	9.991	9.151	8.571	-	8.571	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The mission of Airborne ASW Intelligence (AAI) (CNO Project K-0416) is to provide advanced Anti-Submarine Warfare (ASW) capabilities through rapid development of new technology and prototype mechanisms for the collection and analysis of ASW related intelligence. This includes full spectrum intelligence collections, analysis, and cataloging of current peer and near peer adversaries. The program develops and swiftly deploys disruptive technologies to counter emerging threats in order to maintain the United States' current undersea warfare superiority. AAI employs the capability to quickly collect, reconstruct, and analyze passive and active measurements of current generation and next generation submarine vulnerabilities providing actionable intelligence to fleet commanders and the Intelligence Community (IC). The AAI data collection program provides full spectrum, measured intelligence data essential for the design and development of advanced sensors, weapon systems, environmental models, and tactical decision aids. AAI collection systems are installed and employed on uniquely configured platforms, specially configured ground support facilities, ships, and other assets as required for the collection, processing, exfiltration, and dissemination of undersea intelligence. AAI develops advanced components and system prototype for advanced detection and tracking systems, specially designed sensors, advanced processing systems and techniques, and specially derived tactics.

This is a Military Intelligence Program (MIP).

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	9.991	9.151	9.335	-	9.335
Current President's Budget	9.991	9.151	8.571	-	8.571
Total Adjustments	0.000	0.000	-0.764	-	-0.764
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	-0.764	-	-0.764

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0303354N / <i>ASW Systems Development - MIP</i>	
<u>Change Summary Explanation</u> Funding: FY 2022 reduction from previous President's Budget submission due to miscellaneous rate adjustments. Technical: Not Applicable Schedule: Not Applicable		

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy										Date: May 2021		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP				Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
0490: Airborne Acoustic Intelligence (AAI)	62.820	9.991	9.151	8.571	-	8.571	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of Airborne ASW Intelligence (AAI) (CNO Project K-0416) is to provide advanced Anti-Submarine Warfare (ASW) capabilities through rapid development of new technology and prototype mechanisms for the collection and analysis of ASW related intelligence. This includes full spectrum intelligence collections, analysis, and cataloging of current peer and near peer adversaries. The program develops and swiftly deploys disruptive technologies to counter emerging threats in order to maintain the United States' current undersea warfare superiority. AAI employs the capability to quickly collect, reconstruct, and analyze passive and active measurements of current generation and next generation submarine vulnerabilities providing actionable intelligence to fleet commanders and the Intelligence Community (IC). The AAI data collection program provides full spectrum, measured intelligence data essential for the design and development of advanced sensors, weapon systems, environmental models, and tactical decision aids. AAI collection systems are installed and employed on uniquely configured platforms, specially configured ground support facilities, ships, and other assets as required for the collection, processing, exfiltration, and dissemination of undersea intelligence. AAI develops advanced components and system prototype for advanced detection and tracking systems, specially designed sensors, advanced processing systems and techniques, and specially derived tactics.

This is a Military Intelligence Program (MIP).

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Systems Engineering / Active Acoustic Program	1.399	1.426	1.445	0.000	1.445
Articles:	-	-	-	-	-
FY 2021 Plans: Engineering support of Acoustic Intelligence (ACINT) Collection Suites (ACS) and Anti-Submarine Warfare Mission Planning and Reconstruction System (AMPRS) for certified AAI collection platforms and management of full spectrum database. Engineering support for design upgrades to ACINT Collection Suites for certified AAI collection platforms. Develop AAI adjunct sensor station for prototyping of in-flight analysis and dissemination of ACINT. Continue evaluation of Fleet software releases for Office of Naval Intelligence (ONI) certification aboard ASW collection platforms. Continue upgrades and development of hardware and software for unique airborne avionics and sensors. Continue development of AAI sensors and systems.					
FY 2022 Base Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>Engineering support of Acoustic Intelligence (ACINT) Collection Sensors and Systems as well as Anti-Submarine Warfare Mission Planning and Reconstruction System (AMPRS) for certified AAI collection platforms and management of full spectrum database. Engineering support for design upgrades to ACINT Collection Suites for certified AAI collection platforms. Enhance P-8 aircraft adjunct sensor station for prototyping of in-flight analysis and dissemination of ACINT. Continue evaluation of Fleet software releases for Office of Naval Intelligence (ONI) certification aboard ASW collection platforms. Continue upgrades and development of hardware and software for unique airborne avionics and sensors. Continue fielding ACS kits in support of P-8A deployments.</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increase of \$0.019M is due to inflation.</p>					
<p>Title: Data Collection and Analysis</p> <p align="right">Articles:</p> <p>FY 2021 Plans: Data collection support at Operational Wings and Tactical Anti-Submarine Warfare (ASW) commands. Ongoing collection of high interest current and future generation target acoustic data in support of Measurement and Signatures Intelligence(MASINT)/Office of Naval Intelligence (ONI) threat assessment and trend analysis requirements for further development of future USN Undersea Warfare Warfighting (USW) capabilities. Characterization, analysis, and certification of the upgraded Fleet MASINT collection assets. Data reduction, Analysis and Fleet Rapid Feedback. Conduct special operations support. Provide essential performance modeling and evaluation for advanced technology sensor systems design and Fleet tactics development. Develop in mission and post mission analysis hardware, software, and processes in response to evolving enemy capabilities.</p> <p>FY 2022 Base Plans: Data collection support at Operational Wings and Tactical ASW commands. Ongoing collection of high interest current and future generation target acoustic data in support of MASINT/ONI threat assessment and trend analysis requirements for further development of future USN Undersea Warfare Warfighting (USW) capabilities. Characterization, analysis, and certification of the upgraded Fleet MASINT collection assets. Data reduction, Analysis and Fleet Rapid Feedback. Conduct special operations support. Provide essential performance modeling and evaluation for advanced technology sensor systems design and Fleet tactics development.</p>	1.098	1.120	1.143	0.000	1.143
	-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Develop in mission and post mission analysis hardware, software, and processes in response to evolving enemy capabilities. FY 2022 OCO Plans: N/A FY 2021 to FY 2022 Increase/Decrease Statement: Increase of \$0.023M is for inflation.					
Title: Active Measurement Validation Articles:	0.146 -	0.148 -	0.000 -	0.000 -	0.000 -
FY 2021 Plans: Active Measurement Validation of targets of interest. Provide the acoustic analysis of echo characterization (which includes: signal excess measurements, peak frequency, trend analysis, and pulse duration measurements) and target strength. FY 2022 Base Plans: Active Measurement Validation of targets of interest effort complete. FY 2022 OCO Plans: N/A FY 2021 to FY 2022 Increase/Decrease Statement: Effort complete.					
Title: Navy Underwater Active Multiple Ping (NUAMP) Product Development Articles:	5.144 -	5.209 -	3.757 -	0.000 -	3.757 -
FY 2021 Plans: Continue sonic frequency design, development, integration, and test for remaining sonic frequencies of the NUAMP sonobuoy family. Procure prototype systems for data collection activities. FY 2022 Base Plans: Continue sonic frequency design, development, integration, and test for remaining sonic frequencies of the NUAMP sonobuoy family. Procure prototype systems for data collection activities. FY 2022 OCO Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A					
FY 2021 to FY 2022 Increase/Decrease Statement: Decrease of \$1.452M due to reduced design development efforts.					
Title: Passive Extended Range Sonobuoy System (PERSS) Product Development	1.225	1.248	2.226	0.000	2.226
Articles:	-	-	-	-	-
FY 2021 Plans: Continue development of disruptive innovative sensors required for the PERSS System of Systems by experimenting and prototyping in a high fidelity and realistic operating environment. Transition various laboratory sonobuoy subsystems by proving the subsystems maturity in real world environments. Perform risk reduction technology demonstration efforts using high gain beamforming sonobuoy transducer assemblies.					
FY 2022 Base Plans: Continue development of disruptive innovative sensors required for the PERSS System of Systems by experimenting and prototyping in a high fidelity and realistic operating environment. Transition various laboratory sonobuoy subsystems by proving the subsystems maturity in real world environments. Perform risk reduction technology demonstration efforts using high gain beamforming sonobuoy transducer assemblies. Transition Extended Range - Directional Frequency and Recording (ER-DIFAR) Office of Naval Research (ONR) Future Naval Capability (FNC) to AAI Program of Record for platform integration. ER-DIFAR IOC FY 2025.					
FY 2022 OCO Plans: N/A					
FY 2021 to FY 2022 Increase/Decrease Statement: Increase of \$0.978M is due to the transition of ONR FNC to Program of Record.					
Title: Furious Krypton	0.979	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2021 Plans: N/A					
FY 2022 Base Plans: N/A					
FY 2022 OCO Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A					
Accomplishments/Planned Programs Subtotals	9.991	9.151	8.571	0.000	8.571

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

N/A

Remarks

D. Acquisition Strategy

Airborne ASW Intelligence (AAI) is a CNO Special Project. The included technology developments are primarily in-house with contractor participation through existing vehicles.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy **Date:** May 2021

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)
--	---	---

Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Active Measurement Validation	WR	NAWCAD : PATUXENT RIVER, MD	2.174	0.146	Dec 2019	0.148	Dec 2020	0.000		-		0.000	-	-	-
Ancillary Hdw Development	WR	NAWCAD : PATUXENT RIVER, MD	7.014	0.515	Dec 2019	0.525	Dec 2020	0.325	Dec 2021	-		0.325	-	-	-
Ancillary Hdw Development Cont	Various	VARIOUS : VARIOUS	2.724	0.600	Dec 2019	0.612	Dec 2020	1.315	Dec 2021	-		1.315	-	-	-
Systems Eng	WR	NAWCAD : PATUXENT RIVER, MD	7.159	0.690	Dec 2019	0.699	Dec 2020	0.703	Dec 2021	-		0.703	-	-	-
Systems Eng Cont	Various	VARIOUS : VARIOUS	3.781	0.717	Dec 2019	0.727	Dec 2020	1.169	Dec 2021	-		1.169	-	-	-
Primary Hdw Development	SS/CPIF	ERAPSCO : COLUMBIA CITY, IN	35.144	7.069	Dec 2019	6.182	Dec 2020	4.801	Dec 2021	-		4.801	-	-	-
Subtotal			57.996	9.737		8.893		8.313		-		8.313	-	-	N/A

Remarks
 The Ancillary Hdw Development Cont and the Systems Eng Cont categories increase in FY 2022 in accordance with the increase in PERSS efforts.
 Active Measurement Validation effort complete in FY21.

Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
Mgt & Prof Spt Svcs (Non-FFRDC)	Various	VARIOUS : VARIOUS	3.880	0.209	Dec 2019	0.213	Dec 2020	0.213	Dec 2021	-		0.213	-	-	-
Travel	Various	VARIOUS : VARIOUS	0.325	0.045	Dec 2019	0.045	Dec 2020	0.045	Dec 2021	-		0.045	-	-	-
Prior year Mgmt Svcs no longer funded in the FYDP	Various	VARIOUS : VARIOUS	0.619	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			4.824	0.254		0.258		0.258		-		0.258	-	-	N/A

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)



PB-22 Program Schedule Airborne Acoustic Intelligence (0490)

FY 2020
1 2 3 4

FY 2021
1 2 3 4

FY 2022
1 2 3 4

Systems Engineering

P-8/MH-60R Avionics Suite

ASW Systems

Data Collection and Analysis (TAPS)

TAPS

Development

Furious Krypton

PERSS

Active NUAMP

Active Target Strength Sensor Processing Development (NUAMP)

Test and Evaluation

Developmental Sensor and System Integrated Testing

Airborne Avionics Deliveries

180
▲

180
▲

180
▲

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / ASW Systems Development - MIP	Project (Number/Name) 0490 / Airborne Acoustic Intelligence (AAI)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj: 0490 Airborne Acoustic Intelligence (AAI)				
Systems Engineering: ASW Systems: P-8/MH-60R Avionics Suite/ASW Systems	1	2020	4	2022
Data Collection and Analysis/Tactical Acoustic Processor (TAPS): Tactical Acoustic Processor (TAPS)	1	2020	4	2022
Product Development: Furious Krypton	1	2020	4	2022
Product Development: Passive Extended Range Sonic Sensor	1	2020	4	2022
Product Development: Active Target Strength Sensor Processing Development	1	2020	4	2022
Test & Evaluation: Developmental Sensor & System Integrated Testing	1	2020	4	2022
Airborne Avionics Deliveries: Prototype 7	2	2020	2	2020
Airborne Avionics Deliveries: Prototype 8	2	2021	2	2021
Airborne Avionics Deliveries: Prototype 9	2	2022	2	2022