Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*							

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	45.653	8.278	8.889	9.991	-	9.991	9.158	9.341	10.728	10.943	Continuing	Continuing
0490: *Airborne Acoustic Intelligence (AAI)*	45.653	8.278	8.889	9.991	-	9.991	9.158	9.341	10.728	10.943	Continuing	Continuing

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 of ASW related intelligence. This includes full spectrum intelligence collections and cataloging of current targets of interest. The program develops and swiftly deploys disruptive innovation to counter emerging threats in order to maintain the United States' current undersea warfare superiority. AAI employs the capability to quickly reconstruct and analyze passive and active measurements of submarine vulnerabilities providing actionable intelligence to fleet commanders. The AAI data collection program provides full spectrum 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 aircraft, specially configured ground support facilities, ships, and other assets as required for the collection, processing, exfiltration, and dissemination of undersea intelligence. AAI includes recording systems, advanced detection and tracking systems, specially designed sensors, advanced processing systems and techniques, and specially derived tactics.

Furious Krypton is a Line of Sight (LOS) and Over the Horizon (OTH) data link utilizing a Naval Research Laboratory (NRL) communications payload onboard the Broad Area Maritime Surveillance-Demonstrator (BAMS-D) and Triton platform. The demonstration will show utilization of the payload to collect and retransmit sonobuoy data to both LOS and OTH receivers.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy			Date: March 2019	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*			**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*	

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	8.278	8.889	10.007	-	10.007
Current President's Budget	8.278	8.889	9.991	-	9.991
Total Adjustments	0.000	0.000	-0.016	-	-0.016
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	-0.016	-	-0.016

Change Summary Explanation

Technical: Not Applicable

Schedule:

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019	
Appropriation/Budget Activity 1319 / 4					**R-1 Program Element (Number/Name)** PE 0303354N / ASW Systems Development - MIP				**Project (Number/Name)** 0490 / Airborne Acoustic Intelligence (AAI)		

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
0490: *Airborne Acoustic Intelligence (AAI)*	45.653	8.278	8.889	9.991	-	9.991	9.158	9.341	10.728	10.943	Continuing	Continuing
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 of ASW related intelligence. This includes full spectrum intelligence collections and cataloging of current targets of interest. The program develops and swiftly deploys disruptive innovation to counter emerging threats in order to maintain the United States' current undersea warfare superiority. AAI employs the capability to quickly reconstruct and analyze passive and active measurements of submarine vulnerabilities providing actionable intelligence to fleet commanders. The AAI data collection program provides full spectrum 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 aircraft, specially configured ground support facilities, ships, and other assets as required for the collection, processing, exfiltration, and dissemination of undersea intelligence. AAI includes recording systems, advanced detection and tracking systems, specially designed sensors, advanced processing systems and techniques, and specially derived tactics.

Furious Krypton is a Line of Sight (LOS) and Over the Horizon (OTH) data link utilizing a Naval Research Laboratory (NRL) communications payload onboard the Broad Area Maritime Surveillance-Demonstrator (BAMS-D) and Triton platform. The demonstration will show utilization of the payload to collect and retransmit sonobuoy data to both LOS and OTH receivers.

This is a Military Intelligence Program (MIP).

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

	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Systems Engineering / Aircraft Mods Active Acoustic Program	1.551	1.399	1.399	0.000	1.399
Articles:	-	-	-	-	-

FY 2019 Plans:
Engineering support of Acoustic Intelligence (ACINT) Collection Suites (ACS) 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. Evaluate additional P-8 aircraft sensor station for in-flight analysis of ACINT. Continue evaluation of Fleet software releases for Office of Naval Intelligence(ONI)

PE 0303354N: *ASW Systems Development - MIP*
Navy

R-1 Line #92

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019		
Appropriation/Budget Activity 1319 / 4		**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*		

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
certification aboard ASW collection platforms. Continue upgrades and development for unique airborne avionics and sensors. Continue fielding ACS kits in support of P-8A deployments. ***FY 2020 Base Plans:*** Engineering support of Acoustic Intelligence (ACINT) Collection Suites 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. Evaluate additional P-8 aircraft sensor station for in-flight analysis of ACINT. Continue evaluation of Fleet software releases for Office of Naval Intelligence(ONI) certification aboard ASW collection platforms. Continue upgrades and development for unique airborne avionics and sensors. Continue fielding ACS kits in support of P-8A deployments. ***FY 2020 OCO Plans:*** N/A					
Title: Data Collection and Analysis	1.035	1.044	1.098	0.000	1.098
Articles:	-	-	-	-	-
FY 2019 Plans: Data collection support at Operational Wings. Ongoing collection of high interest acoustic and non-acoustic data in support of MASINT/ONI threat assessment requirements. Characterization, analysis and certification of the upgraded Fleet MASINT collection assets. Reduction, Analysis and Fleet Rapid Feedback. Conduct special operations support. Essential performance modeling and evaluation for advanced technology sensor systems design and Fleet tactics development. Develop post mission analysis hardware, software and processes in response to evolving enemy capabilities. ***FY 2020 Base Plans:*** Data collection support at Operational Wings. Ongoing collection of high interest acoustic and non-acoustic data in support of MASINT/ONI threat assessment requirements. Characterization, analysis and certification of the upgraded Fleet MASINT collection assets. Reduction, Analysis and Fleet Rapid Feedback. Conduct special operations support. Essential performance modeling and evaluation for advanced technology sensor systems design and Fleet tactics development. Develop post mission analysis hardware, software and processes in response to evolving enemy capabilities. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:***					

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Navy		**Date:** March 2019
Appropriation/Budget Activity 1319 *I* 4	**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*	**Project (Number/Name)** 0490 *I Airborne Acoustic Intelligence (AAI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Increase is due to refined cost estimates.					
Title: Active Measurement Validation	0.138	0.143	0.146	0.000	0.146
Articles:	-	-	-	-	-
FY 2019 Plans: Active Measurement Validation of targets of interest. Provides the acoustic analysis of echo characterization (which includes: signal excess measurements, peak frequency, trend analysis and pulse duration measurements) and target strength.					
FY 2020 Base Plans: Active Measurement Validation of targets of interest. Provides the acoustic analysis of echo characterization (which includes: signal excess measurements, peak frequency, trend analysis and pulse duration measurements) and target strength.					
FY 2020 OCO Plans: N/A					
FY 2019 to FY 2020 Increase/Decrease Statement: Increase is due to inflation.					
Title: Navy Underwater Active Multiple Ping (NUAMP) Product Development	5.554	5.103	5.144	0.000	5.144
Articles:	-	-	-	-	-
FY 2019 Plans: Continue sonic frequency design, development, integration and test for remaining sonic frequencies of the NUAMP sonobuoy family.					
FY 2020 Base Plans: Continue sonic frequency design, development, integration and test for remaining sonic frequencies of the NUAMP sonobuoy family.					
FY 2020 OCO Plans: N/A					
FY 2019 to FY 2020 Increase/Decrease Statement: Increase is due to inflation.					
Title: Passive Extended Range Sonobuoy System (PERSS) Product Development	0.000	1.200	1.225	0.000	1.225

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 *I* 4	**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*	**Project (Number/Name)** 0490 *I Airborne Acoustic Intelligence (AAI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Articles:	-	-	-	-	-
FY 2019 Plans: Continue development of disruptive innovative sensors 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 2020 Base Plans:** Continue development of disruptive innovative sensors 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 2020 OCO Plans:** N/A **FY 2019 to FY 2020 Increase/Decrease Statement:** Increase is due to refined cost estimates.					
Title: Furious Krypton	0.000	0.000	0.979	0.000	0.979
Articles:	-	-	-	-	-
FY 2019 Plans: N/A **FY 2020 Base Plans:** Develop and demonstrate a disruptive innovative method to provide Tactical Anti-Submarine Warfare data to multiple users both Beyond Line of Sight and via Satellite Communications (SATCOM). **FY 2020 OCO Plans:** N/A **FY 2019 to FY 2020 Increase/Decrease Statement:** Funds Furious Krypton demonstration.					
Accomplishments/Planned Programs Subtotals	8.278	8.889	9.991	0.000	9.991

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Navy		**Date:** March 2019
Appropriation/Budget Activity 1319 *I* 4	**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*	**Project (Number/Name)** 0490 *I Airborne Acoustic Intelligence (AAI)*

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.

E. Performance Metrics
 Provide engineering to support Sound Pressure Level (SPL) recording. Provide data collection support at Operation Wings. Perform Active Measurement Validation of targets of interest.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019

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

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Active Measurement Validation	WR	NAWCAD : PATUXENT RIVER, MD	1.893	0.138	Dec 2017	0.143	Dec 2018	0.146	Dec 2019	-		0.146	Continuing	Continuing	Continuing
Ancillary Hdw Development	WR	NAWCAD : PATUXENT RIVER, MD	6.014	0.500	Dec 2017	0.500	Dec 2018	0.515	Dec 2019	-		0.515	Continuing	Continuing	Continuing
Ancillary Hdw Development Cont	Various	VARIOUS : VARIOUS	1.546	0.585	Dec 2017	0.593	Dec 2018	0.600	Dec 2019	-		0.600	Continuing	Continuing	Continuing
Systems Eng	WR	NAWCAD : PATUXENT RIVER, MD	5.818	0.665	Dec 2017	0.676	Dec 2018	0.690	Dec 2019	-		0.690	Continuing	Continuing	Continuing
Systems Eng	Various	VARIOUS : VARIOUS	2.265	0.793	Dec 2017	0.723	Dec 2018	0.717	Dec 2019	-		0.717	Continuing	Continuing	Continuing
Primary Hdw Development	SS/CPIF	ERAPSCO : FT. WAYNE IN	23.793	5.347	Dec 2017	6.004	Dec 2018	7.069	Dec 2019	-		7.069	Continuing	Continuing	Continuing
Subtotal			41.329	8.028		8.639		9.737		-		9.737	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mgt & Prof Spt Svcs (Non-FFRDC)	Various	VARIOUS : VARIOUS	3.473	0.202	Dec 2017	0.205	Dec 2018	0.209	Dec 2019	-		0.209	Continuing	Continuing	Continuing
Contractor Eng Spt	Various	VARIOUS : VARIOUS	0.588	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Travel	Various	VARIOUS : VARIOUS	0.232	0.048	Dec 2017	0.045	Dec 2018	0.045	Dec 2019	-		0.045	Continuing	Continuing	Continuing
Prior year Mgmt Svcs no longer funded in the FYDP	Various	VARIOUS : VARIOUS	0.031	0.000		0.000		0.000		-		0.000	0.000	0.031	-
Subtotal			4.324	0.250		0.250		0.254		-		0.254	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy							Date: March 2019	
Appropriation/Budget Activity 1319 *I* 4				**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*			**Project (Number/Name)** 0490 *I Airborne Acoustic Intelligence (AAI)*	

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.653	8.278	8.889	9.991	-	9.991	Continuing	Continuing	N/A

Remarks

Exhibit R-4, **RDT&E Schedule Profile:** PB 2020 Navy		**Date:** March 2019
Appropriation/Budget Activity 1319 *I* 4	**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*	**Project (Number/Name)** 0490 *I Airborne Acoustic Intelligence (AAI)*

Proj: 0490 Airborne Acoustic Intelligence (AAI)	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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

Systems Engineering

P-3/P-8 Avionics Suite — P-3/P-8/MH-60R Avionics Suite

Sys Eng Tactical Acoustic Processor (TAPS)

TAPS

Product Development

Furious Krypton

PERSS

Data Collection and Analysis

Active Target Strength Sensor Processing Development (NUAMP)

Test & Evaluation

NUAMP Integrated Testing

Airborne Avionics Deliveries

219 ▼   250 ▼   180 ▼   180 ▼   180 ▼   180 ▼   180 ▼

2020DON - 0303354N - 0490

Exhibit R-4A, **RDT&E Schedule Details:** PB 2020 Navy		**Date:** March 2019
Appropriation/Budget Activity 1319 *I* 4	**R-1 Program Element (Number/Name)** PE 0303354N *I ASW Systems Development - MIP*	**Project (Number/Name)** 0490 *I Airborne Acoustic Intelligence (AAI)*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj: 0490 Airborne Acoustic Intelligence (AAI)				
Systems Engineering: P-3/P-8 Avionics Suite: P-3/P-8/MH-60R Avionics Suite	1	2018	4	2024
Sys Eng Tactical Acoustic Processor (TAPS): Sys Eng Tactical Acoustic Processor (TAPS)	1	2018	4	2024
Product Development: Furious Krypton Development	1	2020	4	2024
Product Development: Passive Extended Range Sonic Sensor	1	2019	4	2024
Product Development: Data Collection and Analysis	1	2018	4	2024
Product Development: Active Target Strength sensor processing development	1	2018	4	2024
Test & Evaluation: Technical Evaluation	1	2018	4	2024
Airborne Avionics Deliveries: Prototype 5	2	2018	2	2018
Airborne Avionics Deliveries: Prototype 6	2	2019	2	2019
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
Airborne Avionics Deliveries: Prototype 10	2	2023	2	2023
Airborne Avionics Deliveries: Prototype 11	2	2024	2	2024