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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy **Date:** February 2016

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>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	20.213	6.495	9.835	9.110	-	9.110	8.336	9.027	9.141	9.328	Continuing	Continuing
0490: <i>Airborne Acoustic Intelligence (AAI)</i>	20.213	6.495	9.835	9.110	-	9.110	8.336	9.027	9.141	9.328	Continuing	Continuing

A. Mission Description and Budget Item Justification

Decrease in ASW SYSTEMS DEVELOPMENT - MIP by \$0.386M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

The mission of Airborne Acoustic Intelligence (AAI) (CNO Project K-0416) is to provide advanced antisubmarine warfare capabilities through rapid development of new technology and prototype mechanisms for the collection of antisubmarine warfare (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.

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.

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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	6.495	9.835	9.535	-	9.535
Current President's Budget	6.495	9.835	9.110	-	9.110
Total Adjustments	0.000	0.000	-0.425	-	-0.425
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	-0.425	-	-0.425

Change Summary Explanation

Technical: Not Applicable

Schedule: Added the MH-60R to the Systems Engineering portion of the schedule. Added Passive Extended Range Sonic Sensor (PERSS) to the schedule in 1Q/19 thru 4Q/21. Adjusted quantity of prototypes accordingly.

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy										Date: February 2016		
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
0490: Airborne Acoustic Intelligence (AAI)	20.213	6.495	9.835	9.110	-	9.110	8.336	9.027	9.141	9.328	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of Airborne Acoustic Intelligence (AAI) (CNO Project K-0416) is to provide advanced antisubmarine warfare capabilities through rapid development of new technology and prototype mechanisms for the collection of antisubmarine warfare (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.

This is a Military Intelligence Program (MIP).

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Systems Engineering / Aircraft Mods Active Acoustic Program	1.767	1.767	1.670	0.000	1.670
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Engineering to support full spectrum ASW intelligence collections. Post mission processor upgrades for Calibrated Acoustic Intelligence (ACINT). Field initial prototypes of Acoustic Intelligence Collection Suites (ACS) in support of P-8A deployments.					
FY 2016 Plans: Engineering support of ACINT Collection Suites for certified AAI collection platforms and management of full spectrum database. Continued upgrades for unique airborne avionics and post mission processing capabilities for ACINT/MASINT (Measurement and Signature Intelligence) requirements. Science and technology research in development of new systems. Field ACS kits in support of P-8A deployments.					
FY 2017 Base Plans:					

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p>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 ONI certification aboard ASW collection platforms. Continued upgrades and development for unique airborne avionics and sensors. Continue fielding ACS kits in support of P-8A deployments.</p> <p>FY 2017 OCO Plans: N/A</p>					
<p>Title: Data Collection and Analysis</p> <p align="right">Articles:</p>	1.645	1.064	0.663	0.000	0.663
<p>FY 2015 Accomplishments: 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.</p> <p>FY 2016 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.</p> <p>FY 2017 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</p>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
design and Fleet tactics development. Develop post mission analysis hardware, software and processes in response to evolving enemy capabilities. FY 2017 OCO Plans: N/A					
Title: Active Measurement Validation Articles:	0.150 -	0.150 -	0.150 -	0.000 -	0.150 -
FY 2015 Accomplishments: 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 2016 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 2017 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 2017 OCO Plans: N/A					
Title: Navy Underwater Active Multiple Ping (NUAMP) Product Development Articles:	2.933 -	6.854 -	6.627 -	0.000 -	6.627 -
FY 2015 Accomplishments: Continue sonic frequency design, development, integration, and test for additional sonic frequencies. Procure 30 prototype sonobuoys for certification of the initial NUAMP sonic frequencies. FY 2016 Plans:					

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Complete full qualification and certification efforts for the initial Navy Underwater Active Multiple Ping (NUAMP) sonic frequencies. Continue sonic frequency design, development, integration and test for additional sonic frequencies of the NUAMP sonobuoy family. FY 2017 Base Plans: Complete full qualification and certification efforts for the second Navy Underwater Active Multiple Ping (NUAMP) sonic frequency sonobuoy. Continue sonic frequency design, development, integration and test for additional sonic frequencies of the NUAMP sonobuoy family. FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	6.495	9.835	9.110	0.000	9.110

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

N/A

Remarks

D. Acquisition Strategy

Airborne ASW Intelligence 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy												Date: February 2016			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
1319 / 4				PE 0303354N / ASW Systems Development - MIP						0490 / Airborne Acoustic Intelligence (AAI)					
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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
Active Measurement Validation	WR	NAWCAD : PATUXENT RIVER, MD	1.443	0.150	Dec 2014	0.150	Dec 2015	0.150	Dec 2016	-		0.150	Continuing	Continuing	Continuing
Ancillary Hdw Development	WR	NAWCAD : PATUXENT RIVER, MD	1.990	1.799	Dec 2014	1.350	Dec 2015	0.875	Dec 2016	-		0.875	Continuing	Continuing	Continuing
Ancillary Hdw Development Cont	Various	VARIOUS : VARIOUS	0.397	0.350	Dec 2014	0.200	Dec 2015	0.177	Dec 2016	-		0.177	Continuing	Continuing	Continuing
Systems Eng	WR	NAWCAD : PATUXENT RIVER, MD	2.879	1.012	Dec 2014	1.000	Dec 2015	0.927	Dec 2016	-		0.927	Continuing	Continuing	Continuing
Systems Eng	Various	VARIOUS : VARIOUS	0.000	0.755	Dec 2014	0.767	Dec 2015	0.743	Dec 2016	-		0.743	0.000	2.265	-
Primary Hdw Development	SS/CPIF	ERAPSCO : FT. WAYNE IN	10.870	1.861	Dec 2014	5.794	Dec 2015	5.690	Dec 2016	-		5.690	14.080	38.295	38.295
Subtotal			17.579	5.927		9.261		8.562		-		8.562	-	-	-
Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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
Mgt & Prof Spt Svcs (Non-FFRDC)	Various	VARIOUS : VARIOUS	2.502	0.323	Dec 2014	0.329	Dec 2015	0.319	Dec 2016	-		0.319	Continuing	Continuing	Continuing
Contractor Eng Spt	Various	VARIOUS : VARIOUS	0.037	0.185	Dec 2014	0.185	Dec 2015	0.181	Dec 2016	-		0.181	Continuing	Continuing	Continuing
Travel	Various	VARIOUS : VARIOUS	0.064	0.060	Dec 2014	0.060	Dec 2015	0.048	Dec 2016	-		0.048	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			2.634	0.568		0.574		0.548		-		0.548	-	-	-

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	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	20.213	6.495	9.835	9.110	-	9.110	-	-	-		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy **Date:** February 2016

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)
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Proj: 0490 Airborne Acoustic Intelligence (AAI)	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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 Avionics Suite	P-3/P-8/MH-60R Avionics Suite																											
Sys Eng Tactical Acoustic Processor (TAPS)	TAPS																											
Product Development	PERSS																											
Data Collection and Analysis	Active Target Strength Sensor Processing Development (NUAMP)																											
Test & Evaluation	NUAMP Integrated Testing																											
Airborne Avionics Deliveries	Airborne Avionics ▼																											
Prototypes		77 ▼				189 ▼				236 ▼				219 ▼				250 ▼				180 ▼				180 ▼		

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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: P-3/P-8 Avionics Suite: P-3/P-8/MH-60R Avionics Suite	1	2015	4	2021
Sys Eng Tactical Acoustic Processor (TAPS): Sys Eng Tactical Acoustic Processor (TAPS)	1	2015	4	2021
Product Development: Passive Extended Range Sonic Sensor	1	2019	4	2021
Product Development: Data Collection and Analysis	1	2015	4	2021
Product Development: Active Target Strength sensor processing development	1	2015	4	2021
Test & Evaluation: Technical Evaluation	1	2015	4	2021
Airborne Avionics Deliveries: Airborne Avionics	1	2015	1	2015
Prototypes: Prototype 2	2	2015	2	2015
Prototypes: Prototype 3	2	2016	2	2016
Prototypes: Prototype 4	2	2017	2	2017
Prototypes: Prototype 5	2	2018	2	2018
Prototypes: Prototype 6	2	2019	2	2019
Prototypes: Prototype 7	2	2020	2	2020
Prototypes: Prototype 8	2	2021	2	2021