Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
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 0603254N *I ASW Systems Development*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	118.087	6.809	7.782	5.555	-	5.555	8.181	7.813	7.351	7.466	Continuing	Continuing
1292: *Adv ASW Sensors & Proc*	108.318	4.516	5.577	3.678	-	3.678	5.742	5.480	5.097	5.175	Continuing	Continuing
3222: *Advanced High Altitude ASW*	9.769	2.293	2.205	1.877	-	1.877	2.439	2.333	2.254	2.291	Continuing	Continuing

A. Mission Description and Budget Item Justification

Includes RDT&E funds for advanced development and developmental testing of airborne anti-submarine warfare (ASW) systems, including aircraft, equipment, and devices for use against all types of submarine targets.

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.

The FY 2016 funding request was reduced by $1.544 million to account for the availability of prior year execution balances.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	6.964	7.782	7.150	-	7.150
Current President's Budget	6.809	7.782	5.555	-	5.555
Total Adjustments	-0.155	-	-1.595	-	-1.595
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.155	-			
• Rate/Misc Adjustments	-	-	-1.595	-	-1.595

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*				Project (Number/Name) 1292 / *Adv ASW Sensors & Proc*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
1292: *Adv ASW Sensors & Proc*	108.318	4.516	5.577	3.678	-	3.678	5.742	5.480	5.097	5.175	Continuing	Continuing
Quantity of RDT&E Articles		100	100	100	-	100	100	100	100	100		

A. Mission Description and Budget Item Justification

This program provides Air Anti-Submarine Warfare (ASW) effectiveness through development and maturization of advanced hardware and software associated with airborne acoustic and non-acoustic systems. This includes sensors and components, processing, post-processing, data recording and display capabilities to address regional threat scenarios against surfaced or submerged conventionally and nuclear powered submarines. Key objectives are platform accommodations of advanced active and passive sensors and components, improved detection, classification, localization, tracking, and increased capacity and flexibility to handle multi-sensor data loads. Furthermore, technologies that can be affordably implemented as payload across fixed wing, rotary and unmanned platforms engaged in ASW, will be pursued. Programs being funded during the FYDP will evaluate technologies such as: Over the Horizon (OTH) communications, sonobuoy communication link to/from aircraft, Distributed Netted Sensors, transient signals, and source and receiver improvement technologies that will enhance passive and Multi-static Active Sensor Systems capabilities. Other programs being funded during the FYDP will provide for the development and maturization of persistent tactical search technologies that will allow transition to the localization and attack phase in all operationally relevant environments. In addition, the program will provide for the development and subsequent experimentation, including data collection and engineering measurement, of Multi-static Active Coherent sources and receivers, laser technologies, electro-optical and Multi-Spectral camera technologies, Radar, and Magnetic Anomaly Detection sensors. Those technologies that are deemed mature and provide increased operational capability will be approved for a production Rapid Capability Insertion (RCI) build. The test articles, which consist of passive/active sensors/components and associated processors, will support at-sea trials and experiments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: System performance assessments	4.516	5.577	3.678	-	3.678
Articles:	100	100	100	-	100
FY 2014 Accomplishments: Conducted system performance assessments for Multi-Static Active Coherent ASW algorithms and other Acoustic and Non-Acoustic system enhancements using test articles and prototype software while supporting at-sea trials and experiments such as Under Sea Warfare Employment Emerging Technologies. Conducted data analysis for the engineering measurement program on Science and Technology, Research and Development and operational fleet collected data.					
FY 2015 Plans: System performance assessments for Multi-Static Active Coherent ASW algorithms and other prospective Acoustic and Non-Acoustic systems and enhancements. The test articles, which consist of passive/active sensors/components and associated processors, will support at-sea trial and experiments. Develop prototype software for use in at-sea experiment/exercise participation and data collection. Conduct data analysis for the					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv ASW Sensors & Proc*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
engineering measurement program on Science and Technology, Research and Development and operational fleet collected data. ***FY 2016 Base Plans:*** System performance assessments for Multi-Static Active Coherent ASW algorithms and other Acoustic and Non-Acoustic system enhancements. The test articles, which consist of passive/active sensors/components and associated processors, will support at-sea trial and experiments. Develop prototype software for use in at-sea experiment/exercise participation and data collection. Conduct data analysis for the engineering measurement program on Science and Technology, Research and Development and operational fleet collected data. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.516	5.577	3.678	-	3.678

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDT&E/0480: *ASW Sensors & Proc*	18.098	15.988	26.906	-	26.906	33.120	35.042	26.562	46.875	Continuing	Continuing

Remarks

D. Acquisition Strategy

The included technology development are primarily in-house with contractor participation through existing vehicles.

E. Performance Metrics

System performance assessments for Multi-Static Active Coherent Air Anti-Submarine Warfare (ASW) algorithms and other Acoustic and Non-Acoustic system enhancements by Air ASW Technology Assessment Board.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 1292 / *Adv ASW Sensors & Proc*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development	Various	Various : Various	1.733	0.204	Dec 2013	0.200	Dec 2014	0.200	Dec 2015	-		0.200	Continuing	Continuing	Continuing
		Subtotal	1.733	0.204		0.200		0.200		-		0.200	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NAWCAD : PATUXENT RIVER, MD	3.425	0.200	Dec 2013	0.400	Dec 2014	0.200	Dec 2015	-		0.200	-	4.225	-
Studies & Analysis	WR	NAWCAD : PATUXENT RIVER, MD	5.481	0.200	Dec 2013	0.400	Dec 2014	0.600	Dec 2015	-		0.600	Continuing	Continuing	Continuing
		Subtotal	8.906	0.400		0.800		0.800		-		0.800	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Test & Eval	Various	Various : Various	17.481	1.765	Dec 2013	1.863	Dec 2014	0.838	Dec 2015	-		0.838	Continuing	Continuing	Continuing
		Subtotal	17.481	1.765		1.863		0.838		-		0.838	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Eng Spt	Various	Various : Various	17.257	1.334	Dec 2013	1.381	Dec 2014	0.500	Dec 2015	-		0.500	Continuing	Continuing	Continuing
ENG & TECH SVCS (NON-FFRDC)	Various	Various : Various	2.752	0.050	Dec 2013	0.045	Dec 2014	0.047	Dec 2015	-		0.047	Continuing	Continuing	Continuing
MGT & PROF SVCS (FFRDC)	Various	Various : Various	0.916	0.171	Dec 2013	0.153	Dec 2014	0.137	Dec 2015	-		0.137	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 1292 / *Adv ASW Sensors & Proc*

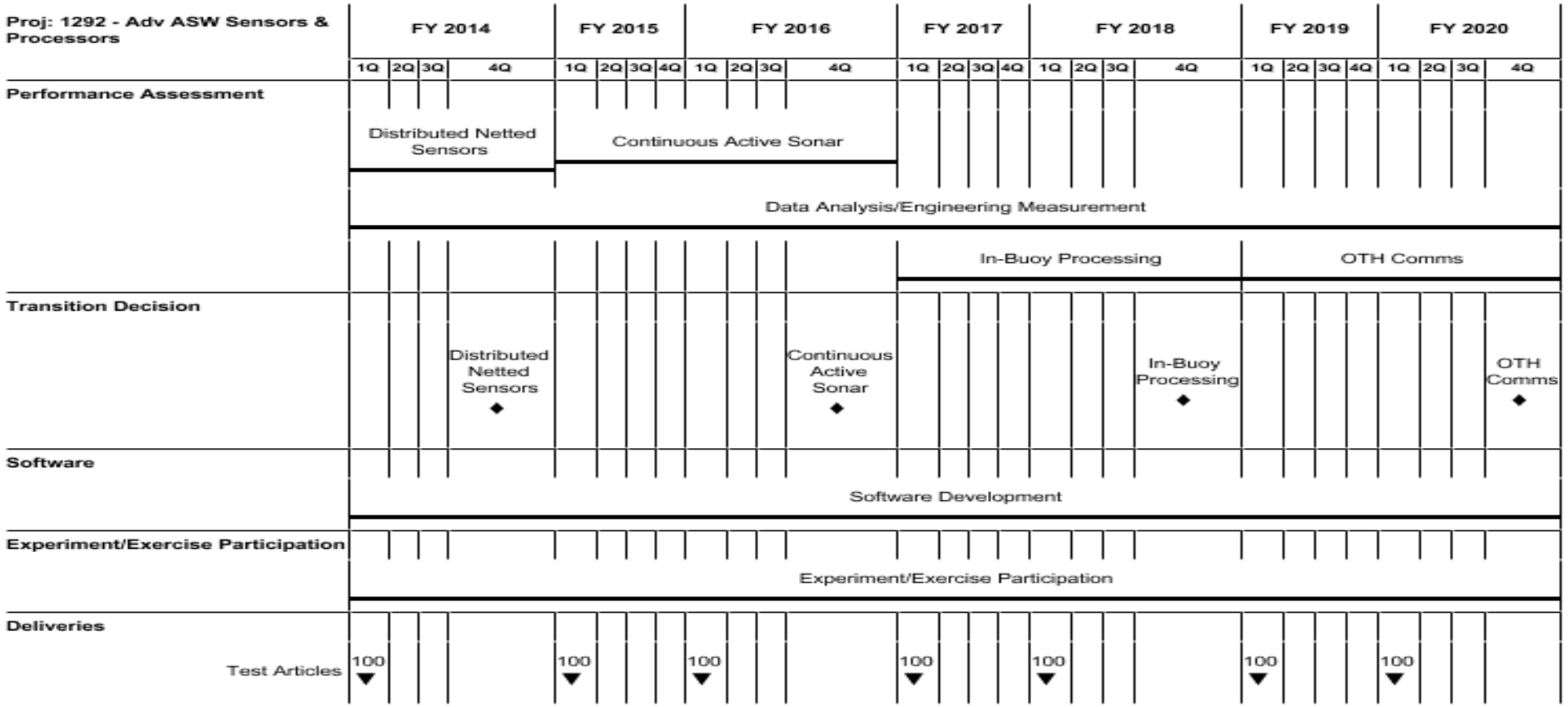
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Eng Spt	WR	NAWCAD : PATUXENT RIVER, MD	59.146	0.587	Dec 2013	1.127	Dec 2014	1.148	Dec 2015	-		1.148	Continuing	Continuing	Continuing
Travel	Various	VARIOUS : VARIOUS	0.127	0.005	Dec 2013	0.008	Dec 2014	0.008	Dec 2015	-		0.008	Continuing	Continuing	Continuing
		Subtotal	80.198	2.147		2.714		1.840		-		1.840	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	108.318	4.516		5.577		3.678		-		3.678	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv ASW Sensors & Proc*



2016PB - 0603254N - 1292

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv ASW Sensors & Proc*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj: 1292 - Adv ASW Sensors & Processors				
Performance Assessment: Distributed Netted Sensors	1	2014	4	2014
Performance Assessment: Continuous Active Sonar	1	2015	4	2016
Performance Assessment: Data Analysis/Engineering Measurement	1	2014	4	2020
Performance Assessment: In-Buoy Processing	1	2017	4	2018
Performance Assessment: OTH Comms	1	2019	4	2020
Transition Decision: Distributed Netted Sensors	4	2014	4	2014
Transition Decision: Continuous Active Sonar	4	2016	4	2016
Transition Decision: In-Buoy Processing	4	2018	4	2018
Transition Decision: OTH Comms	4	2020	4	2020
Software: Software Development	1	2014	4	2020
Experiment/Exercise Participation: Experiment/Exercise Participation	1	2014	4	2020
Deliveries: Test Articles: Test Article Deliveries (3)	1	2014	1	2014
Deliveries: Test Articles: Test Article Deliveries (4)	1	2015	1	2015
Deliveries: Test Articles: Test Article Deliveries (5)	1	2016	1	2016
Deliveries: Test Articles: Test Article Deliveries (6)	1	2017	1	2017
Deliveries: Test Articles: Test Article Deliveries (7)	1	2018	1	2018
Deliveries: Test Articles: Test Article Deliveries (8)	1	2019	1	2019
Deliveries: Test Articles: Test Article Deliveries (9)	1	2020	1	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*				Project (Number/Name) 3222 / *Advanced High Altitude ASW*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3222: *Advanced High Altitude ASW*	9.769	2.293	2.205	1.877	-	1.877	2.439	2.333	2.254	2.291	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Advanced High Altitude Anti-Submarine Warfare (Adv HAASW) program performs research, analyses, and early prototype demonstration activities for new technologies to support future Air Anti-Submarine Warfare (ASW) programs for P-8A and other platforms. Emphasis is placed on evaluation of technologies and prototype systems in realistic operating environments with a focus on new sensors and system components.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Research, analyses, and early prototype demonstration activities	2.293	2.205	1.877	-	1.877
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated modeling & simulation analysis for additional High Altitude sonobuoy modifications for P-8A application. Conducted analyses on potential new sonobuoys for P-8A application.					
FY 2015 Plans: Scheduled to perform studies, analyses and early prototyping of acoustic and non-acoustic technologies suitable for High Altitude ASW operations for the P-8A aircraft.					
FY 2016 Base Plans: Scheduled to perform studies, analyses and early prototyping of acoustic, non-acoustic and communications technologies suitable for high altitude ASW operations.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	2.293	2.205	1.877	-	1.877

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Develop modifications to incorporate capability into current sonobuoy sensors and integration into Air ASW platforms, P-8A as the lead aircraft.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 3222 / *Advanced High Altitude ASW*

E. Performance Metrics

Perform Studies and Analysis to better define Advanced HAASW program needs. Early prototypes will be developed to reduce risk for ASW operations at high altitudes by the P-8A aircraft.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 3222 / *Advanced High Altitude ASW*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior years Hdw Dev cost no longer funded in the FYDP	Various	Various : Various	1.370	-		-		-		-		-	-	1.370	-
		Subtotal	1.370	-		-		-		-		-	-	1.370	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis	WR	NAWCAD : PATUXENT RIVER, MD	1.450	0.223	Nov 2013	0.359	Nov 2014	0.752	Nov 2015	-		0.752	Continuing	Continuing	Continuing
Studies & Analysis	Various	AVIATION SYSTEMS ENGINEERING COMPANY INC : LEXINGTON PARK, MD	3.637	1.500	Nov 2013	1.200	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Studies & Analysis	WR	Various : Various	0.000	-		-		0.579	Dec 2015	-		0.579	-	0.579	-
		Subtotal	5.087	1.723		1.559		1.331		-		1.331	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Test No longer funded in the FYDP	Various	Various : Various	0.230	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.230	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 3222 / *Advanced High Altitude ASW*	

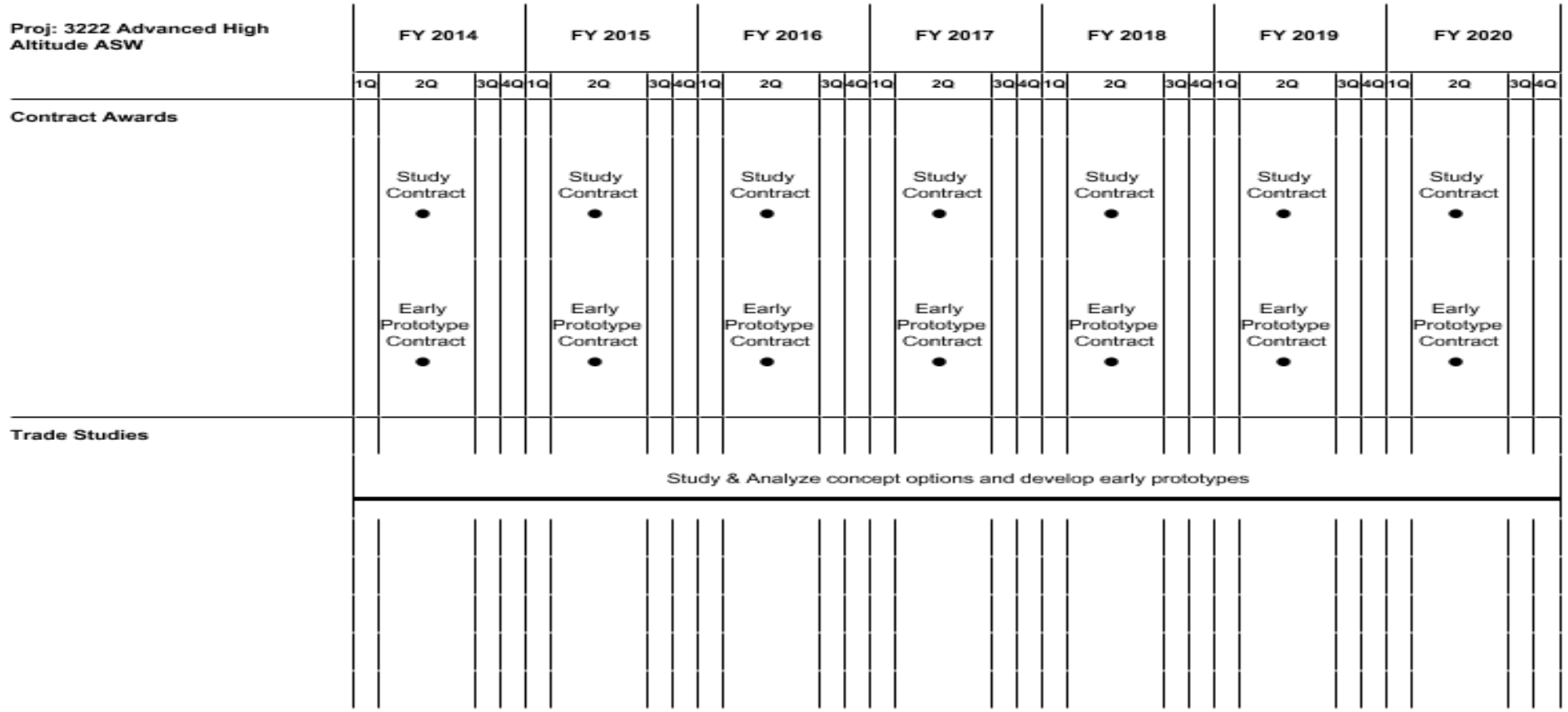
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Eng Spt	Various	Various : Various	0.685	-		0.136	Nov 2014	0.119	Dec 2015	-		0.119	Continuing	Continuing	Continuing
ENG & TECH SVCS (NON-FFRDC)	Various	Various : Various	0.669	0.236	Nov 2013	0.209	Nov 2014	0.188	Dec 2015	-		0.188	Continuing	Continuing	Continuing
Government Eng Spt	WR	NAWCAD : PATUXENT RIVER, MD	1.700	0.330	Nov 2013	0.295	Nov 2014	0.231	Dec 2015	-		0.231	Continuing	Continuing	Continuing
Travel	Various	Various : Various	0.028	0.004	Nov 2013	0.006	Nov 2014	0.008	Nov 2015	-		0.008	Continuing	Continuing	Continuing
		Subtotal	3.082	0.570		0.646		0.546		-		0.546	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.769	2.293		2.205		1.877		-		1.877	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 3222 / *Advanced High Altitude ASW*



2016PB - 0603254N - 3222

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 3222 / *Advanced High Altitude ASW*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj: 3222 Advanced High Altitude ASW				
Contract Awards: Study Contract (2)	2	2014	2	2014
Contract Awards: Study Contract (3)	2	2015	2	2015
Contract Awards: Study Contract (4)	2	2016	2	2016
Contract Awards: Study Contract (5)	2	2017	2	2017
Contract Awards: Study Contract (6)	2	2018	2	2018
Contract Awards: Study Contract (7)	2	2019	2	2019
Contract Awards: Study Contract (8)	2	2020	2	2020
Contract Awards: Early Prototype Contract (2)	2	2014	2	2014
Contract Awards: Early Prototype Contract (3)	2	2015	2	2015
Contract Awards: Early Prototype Contract (4)	2	2016	2	2016
Contract Awards: Early Prototype Contract (5)	2	2017	2	2017
Contract Awards: Early Prototype Contract (6)	2	2018	2	2018
Contract Awards: Early Prototype Contract (7)	2	2019	2	2019
Contract Awards: Early Prototype Contract (8)	2	2020	2	2020
Trade Studies: Trade Studies	1	2014	4	2020