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

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</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	183.785	1.020	1.096	1.081	-	1.081	1.148	1.174	1.198	1.222	Continuing	Continuing
1704.: <i>Undersea Warfare</i>	183.785	1.020	1.096	1.081	-	1.081	1.148	1.174	1.198	1.222	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The CNO's ASW initiative is a focused effort to identify the most promising ASW technologies through a process of discovery, assessment, experimentation, and analysis. The CNO's ASW initiative will coordinate the development of technologies which move beyond incremental or marginal improvements in ASW effectiveness. The CNO's vision of "fundamentally changing the way ASW is currently conducted to render the enemy submarine irrelevant against US and coalition forces" necessitates a change in the calculus of how the US Navy conducts ASW. Central to the CNO's ASW initiatives achieving the CNO's vision are several innovative approaches which include using the art-of-the-technologically-possible; minimizing force-on-force; reducing the ASW end-to-end time line; supporting rapid maneuver; developing off-board and distributed ASW detection systems; and finding innovative weapons solutions. To achieve these key approaches, it is essential to develop new ASW technologies and conduct at-sea experiments to prove/disprove technology concepts and collect corroborating data.

**B. Program Change Summary (\$ in Millions)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	1.053	1.096	1.126	-	1.126
Current President's Budget	1.020	1.096	1.081	-	1.081
Total Adjustments	-0.033	0.000	-0.045	-	-0.045
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.033	0.000			
• Program Adjustments	0.000	0.000	-0.045	-	-0.045

**Change Summary Explanation**

Decrease in the Surface ASW program by \$45K as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</i>				<b>Project (Number/Name)</b> 1704. / <i>Undersea Warfare</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
1704.: <i>Undersea Warfare</i>	183.785	1.020	1.096	1.081	-	1.081	1.148	1.174	1.198	1.222	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The CNO's ASW initiative is a focused effort to identify the most promising ASW technologies through a process of discovery, assessment, experimentation, and analysis. The CNO's ASW initiative will coordinate the development of technologies which move beyond incremental or marginal improvements in ASW effectiveness. The CNO's vision of "fundamentally changing the way ASW is currently conducted to render the enemy submarine irrelevant against US and coalition forces" necessitates a change in the calculus of how the US Navy conducts ASW. Central to the CNO's ASW initiatives achieving the CNO's vision are several innovative approaches which include using the art-of-the-technologically-possible; minimizing force-on-force; reducing the ASW end-to-end time line; supporting rapid maneuver; developing off-board and distributed ASW detection systems; and finding innovative weapons solutions. To achieve these key approaches, it is essential to develop new ASW technologies and conduct at-sea experiments to prove/disprove technology concepts and collect corroborating data.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<b>Title:</b> CNO ASW Initiatives	1.020	1.096	1.081	0.000	1.081
<b>Articles:</b>	-	-	-	-	-
<b>FY 2015 Accomplishments:</b> Collected systems and performance data during select Fleet exercises and at-sea testing events. Analyzed and distributed collected data. Conducted studies and Analysis of Alternatives (AoA) in support of the CNO's ASW initiative. Awarded an advanced development contract to improve surface active sonar performance (4Q15).					
<b>FY 2016 Plans:</b> Collect systems and performance data during select Fleet exercises and at-sea testing events. Analyze and distribute collected data. Conduct studies and AoA in support of the CNO's ASW initiative.					
<b>FY 2017 Base Plans:</b> Collect systems and performance data during select Fleet exercises and at-sea testing events. Analyze and distribute collected data. Conduct studies and AoA in support of the CNO's ASW initiative. Award an advanced development contract to prototype promising new ASW concept(s).					
<b>FY 2017 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	1.020	1.096	1.081	0.000	1.081

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</i>	<b>Project (Number/Name)</b> 1704. / <i>Undersea Warfare</i>
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**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Use competitively awarded contracts from Broad Agency Announcement (BAA) solicitations and University Affiliated Research Centers (UARCs).

**E. Performance Metrics**

Investigate promising ASW technologies via annual at-sea experiments.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</i>	<b>Project (Number/Name)</b> 1704. / <i>Undersea Warfare</i>
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Technology Development	C/CPFF	AAC : NY	1.134	0.000		0.000		0.000		-		0.000	0.000	1.134	-
Technology Development	C/CPFF	Adaptive Methods : VA	3.788	0.000		0.000		0.000		-		0.000	0.000	3.788	-
Technology Development	C/CPFF	Alion Sciences : VA	8.000	0.000		0.000		0.000		-		0.000	0.000	8.000	-
Technology Development	C/CPAF	EG&G : VA	2.050	0.000		0.000		0.000		-		0.000	0.000	2.050	-
Technology Development	C/CPFF	In-Depth Engineering : VA	3.635	0.000		0.000		0.000		-		0.000	0.000	3.635	-
Technology Development	C/CPFF	JHU/APL : MD	25.333	0.000		0.000		0.000		-		0.000	0.000	25.333	-
Technology Development	C/CPFF	L-3 Communications : VA	3.000	0.000		0.000		0.000		-		0.000	0.000	3.000	-
Technology Development	C/CPFF	Lockheed Martin - ISS : NY	7.110	0.000		0.000		0.000		-		0.000	0.000	7.110	-
Technology Development	WR	NSWC/Carderock : MD	3.201	0.000		0.000		0.000		-		0.000	0.000	3.201	-
Technology Development	WR	NUWC/Keyport : WA	0.790	0.000		0.000		0.000		-		0.000	0.000	0.790	-
Technology Development	WR	NUWC/Newport : RI	33.260	0.000		0.000		0.000		-		0.000	0.000	33.260	-
Technology Development	C/CPFF	Northrop Grumman : VA	4.684	0.000		0.000		0.000		-		0.000	0.000	4.684	-
Technology Development	C/CPFF	UT/ARL : TX	4.908	0.000		0.000		0.000		-		0.000	0.000	4.908	-
Technology Development	C/CPFF	VAR : VAR*	4.694	0.000		0.000		0.000		-		0.000	0.000	4.694	-
Technology Development	WR	NFESC/PH : CA	5.350	0.000		0.000		0.000		-		0.000	0.000	5.350	-
Technology Development	MIPR	SSGC : MS	3.253	0.000		0.000		0.000		-		0.000	0.000	3.253	-
Detection/Classification Algorithms (LRS)	WR	NAWC/Pax River : MD	2.400	0.000		0.000		0.000		-		0.000	0.000	2.400	-
Detection/Classification Algorithms (LRS)	C/CPFF	VAR : VAR*	8.600	0.000		0.000		0.000		-		0.000	0.000	8.600	-
Technology Development (LRS)	WR	NRL : DC	2.500	0.000		0.000		0.000		-		0.000	0.000	2.500	-
Technology Development (LRS)	C/CPFF	VAR : VAR*	14.950	0.000		0.000		0.000		-		0.000	0.000	14.950	-
<b>Subtotal</b>			142.640	0.000		0.000		0.000		-		0.000	0.000	142.640	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</i>	<b>Project (Number/Name)</b> 1704. / <i>Undersea Warfare</i>
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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**  
\*Consists of multiple performing activities with funding for each not greater than \$1M per year.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
At-Sea Test/Experiment	WR	ONR : VA	5.500	0.000		0.000		0.000		-		0.000	0.000	5.500	-
Developmental Test & Evaluation	C/CPFF	AAC : NY	1.067	0.000		0.000		0.000		-		0.000	0.000	1.067	-
Developmental Test & Evaluation	C/CPFF	JHU/APL : MD	2.105	0.630	Dec 2014	0.227	Mar 2016	0.211	Dec 2016	-		0.211	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NRL : DC	0.537	0.000		0.000		0.000		-		0.000	0.000	0.537	-
Developmental Test & Evaluation	WR	NSMA : VA	0.907	0.000		0.000		0.000		-		0.000	0.000	0.907	-
Developmental Test & Evaluation	WR	NSWC/Carderock : MD	1.172	0.000		0.000		0.000		-		0.000	0.000	1.172	-
Developmental Test & Evaluation	WR	NUWC/Newport : RI	11.453	0.000		0.000		0.000		-		0.000	0.000	11.453	-
Developmental Test & Evaluation	WR	SPAWAR : CA	0.277	0.000		0.000		0.000		-		0.000	0.000	0.277	-
Developmental Test & Evaluation	C/CPFF	UT/ARL : TX	1.844	0.000		0.000		0.000		-		0.000	0.000	1.844	-
Developmental Test & Evaluation	C/CPFF	VAR : VAR*	4.767	0.270	Feb 2015	0.749	Nov 2015	0.750	Dec 2016	-		0.750	Continuing	Continuing	Continuing
Enhanced Data Collection	C/CPFF	JHU/APL : MD	4.462	0.000		0.000		0.000		-		0.000	0.000	4.462	-
Enhanced Data Collection	C/CPFF	UT/ARL : TX	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	-
<b>Subtotal</b>			36.091	0.900		0.976		0.961		-		0.961	-	-	-

**Remarks**  
\*Consists of multiple performing activities with funding for each not greater than \$1M per year.



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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</i>	<b>Project (Number/Name)</b> 1704. / <i>Undersea Warfare</i>
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Proj 1704.L24	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				
<b>CNO's ASW Initiative</b>																																
Experiment/Data Analysis			Ex - 2015 ▲				Ex - 2016 ▲				Ex - 2017 ▲				Ex - 2018 ▲				Ex - 2019 ▲				Ex - 2020 ▲				Ex - 2021 ▲					
	Experiment Data Analysis																															

2017PB - 0603553N - 1704.L24

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603553N / <i>Surface ASW</i>	<b>Project (Number/Name)</b> 1704. / <i>Undersea Warfare</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1704.L24</b>				
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2015)	3	2015	3	2015
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2016)	3	2016	3	2016
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2017)	3	2017	3	2017
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2018)	3	2018	3	2018
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2019)	3	2019	3	2019
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2020)	3	2020	3	2020
CNO's ASW Initiative: Experiment/Data Analysis: Conduct At-Sea Experiment (2021)	3	2021	3	2021
CNO's ASW Initiative: Experiment/Data Analysis: Analyze Experimental Data/Studies	1	2015	4	2021