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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 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>							
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	49.280	0.000	0.000	6.283	-	6.283	7.002	3.402	2.104	2.106	Continuing	Continuing
3094: <i>USW Decision Support</i>	49.280	0.000	0.000	6.283	-	6.283	7.002	3.402	2.104	2.106	Continuing	Continuing

A. Mission Description and Budget Item Justification

The objective the Undersea Warfare Decision Support System (USW-DSS) Project is to provide capabilities to shorten Command and Control (C2) decision processes for detection-to-engagement across multiple platforms, including those with low-bandwidth communications or intermittent connectivity. The USW-DSS decision support tool uses a Service-Oriented Architecture (SOA) encompassing existing communication links, networks, and contact pictures comprised of sensor data from air, surface, submarine, theater, and surveillance platforms to connect sensors and weapons. The capabilities delivered by USW-DSS are critical not only for the Sea Combat Commander (SCC), but also for the Theater USW Commander (TUSWC) and Anti-Submarine Warfare Commander (ASWC) to fulfill the requirement for an integrated capability to plan, conduct, and coordinate USW operations across multiple ASW platforms. USW-DSS will provide common and improved visualization, integrated USW platform sensor data sharing, reduced data entry, improved sensor performance predictions, data fusion, and reduced redundancy across USW Tactical Decision Aids (TDA). This Project will provide a greater understanding of the undersea battle space by allowing the entire force (carrier/expeditionary strike group, theater, or other) to have a common and thorough understanding of the battle space with characterized uncertainties.

USW-DSS Build 3 will be hosted on the Consolidated Afloat Networks and Enterprise Services (CANES) architecture, which will be fully SOA enabled. USW-DSS Build 3, in response to Fleet requests, will provide improved and additional functionality and increased stability/reliability while integrating data from a wider spectrum of data sources and platforms such as the P-8 and MH-60R helicopter.

The Navy continues to modernize and add capabilities to existing Programs of Record (PORs) that are significant data sources for USW-DSS. Accordingly, USW-DSS is required to develop upgrades to maintain its current capabilities and to take advantage of the source system improvements. USW-DSS utilizes an incremental build cycle and fielding plan to provide continuous improvement to the warfighter.

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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	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	6.283	-	6.283
Total Adjustments	0.000	0.000	6.283	-	6.283
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	6.336	-	6.336
• Rate/Misc Adjustments	0.000	0.000	-0.053	-	-0.053

Change Summary Explanation

Decrease in CIC Conversion by \$.264M was required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

In FY17, the USW-DSS Project is being restored to provide modernization of Program of Record (PoR) ASW and C2 systems. Upgrades are required to improve capability and system interoperability. Without updates, the Common Tactical Picture (CTP) featured in USW-DSS would no longer provide a complete tactical picture. USW-DSS Build 3 will advance the Build 2 Release 3 (B2R3) CTP into a more integrated combat system tool that enables the warfighter to more rapidly and collaboratively engage the enemy thus increasing warfighting capability.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>	Project (Number/Name) 3094 / <i>USW Decision Support</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
3094: <i>USW Decision Support</i>	49.280	0.000	0.000	6.283	-	6.283	7.002	3.402	2.104	2.106	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 3094 will develop the USW-DSS that will provide ASW C2 capabilities which enable the CNO vision for ASW Superiority using a "coordinated, networked force of submarines, surface ships, aircraft, and Integrated Undersea Surveillance System (IUSS) assets" with "common and unambiguous views that yield operational and tactical situational awareness in the undersea environment." USW-DSS provides capabilities to shorten C2 decision processes for detection-to-engagement across multiple platforms, including those with low-bandwidth communications or intermittent connectivity. The USW-DSS decision support tool uses a SOA encompassing existing communication links, networks, and contact pictures comprised of sensor data from air, surface, submarine, theater, and surveillance platforms to connect sensors and weapons. The capabilities delivered by USW-DSS are critical not only for the SCC but also for the TUSWC and ASWC to fulfill the requirement for an integrated capability to plan, conduct, and coordinate USW operations across multiple ASW platforms. USW-DSS will provide common and improved visualization, integrated USW platform sensor data sharing, reduced data entry, improved sensor performance predictions, data fusion, and reduced redundancy across USW TDAs. The program will provide a greater understanding of the undersea battle space by allowing the entire force (carrier/expeditionary strike group, theater, or other) to have a common and thorough understanding of the battle space with characterized uncertainties

The Navy continues to modernize and add capabilities to existing Programs of Record (POR) that are significant data sources for USW-DSS. These include, but not limited to, the AN/SQQ-89 Surface ASW Combat System, the AN/SQQ-34 Aircraft Carrier Tactical Support Center (CV-TSC) and the Global Command and Control System - Maritime (GCCS-M). Accordingly, USW-DSS is required to develop upgrades to maintain its current capabilities and to take advantage of the source system improvements.

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: USW-DSS Capability Improvements	0.000	0.000	6.283	0.000	6.283
Articles:	-	-	-	-	-
Description: Design, develop, integrate, and test additional USW-DSS tools/capabilities into Build 3 including, but not limited to, CTP, Platform Data Fusion Integration, Cross-Platform Data Fusion, Automated Asset Allocation, Asset/Threat State Information, Vulnerability Analysis enhancement, ASW Track Management, Automated Re-planning, Engagement Target Pairing, improved TUSW capabilities, Data-Focused Navy Tactical Cloud Integration, and incorporate visualization/display service.					
FY 2015 Accomplishments:					

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>	Project (Number/Name) 3094 / <i>USW Decision Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Not Applicable FY 2016 Plans: Not Applicable FY 2017 Base Plans: - Enhance current USW-DSS Build 2 Release 3 capabilities and integrate them into Build 3. - Design, develop, and integrate Theater ASW (TASW) tools into USW-DSS Build 3. - Maintain critical existing data source interfaces with other ASW PORs such as AN/SQQ-89, CV-TSC, and GCCS-M. FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	6.283	0.000	6.283

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• OPN/2176: <i>USW Support Equipment</i>	3.589	3.867	4.463	-	4.463	6.099	3.346	4.641	4.118	Continuing	Continuing

Remarks

D. Acquisition Strategy

- Hardware/Software development and integration via Navy Warfare Centers and Small Business contractors.

E. Performance Metrics

- Improve capability and system interoperability.
- Advance USW-DSS from Build 2/Release 3 to Build 3.

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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 / 5				PE 0604518N / Combat Information Center Conv				3094 / USW Decision Support							
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
Primary H/W & S/W Development	WR	NSWC/Carderock : MD	0.000	0.000		0.000		0.800	Nov 2016	-		0.800	Continuing	Continuing	Continuing
Primary H/W & S/W Development	WR	NUWC/Keyport : WA	0.000	0.000		0.000		0.300	Nov 2016	-		0.300	Continuing	Continuing	Continuing
Primary H/W & S/W Development	WR	NUWC/Newport : RI	0.000	0.000		0.000		0.250	Nov 2016	-		0.250	Continuing	Continuing	Continuing
Primary H/W & S/W Development	C/CPFF	Adaptive Methods : VA	0.000	0.000		0.000		2.040	Dec 2016	-		2.040	Continuing	Continuing	Continuing
Primary H/W & S/W Development	C/CPFF	Progeny : VA	0.000	0.000		0.000		1.343	Dec 2016	-		1.343	Continuing	Continuing	Continuing
Total Prior Year Costs	Various	Var : Var	49.280	0.000		0.000		0.000		-		0.000	0.000	49.280	-
Subtotal			49.280	0.000		0.000		4.733		-		4.733	-	-	-
Test and Evaluation (\$ 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
Integration and Test	C/CPFF	Adaptive Methods : VA	0.000	0.000		0.000		0.250	Dec 2016	-		0.250	Continuing	Continuing	Continuing
Integration and Test	C/CPFF	Progeny : VA	0.000	0.000		0.000		1.000	Dec 2016	-		1.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.250		-		1.250	-	-	-
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
Program Management Support	C/CPIF	CACI : VA	0.000	0.000		0.000		0.100	Dec 2016	-		0.100	Continuing	Continuing	Continuing
Program Management Support	C/CPIF	CGI Federal : VA	0.000	0.000		0.000		0.200	Dec 2016	-		0.200	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.300		-		0.300	-	-	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy

Date: February 2016

Appropriation/Budget Activity
1319 / 5

R-1 Program Element (Number/Name)
PE 0604518N / *Combat Information Center Conv*

Project (Number/Name)
3094 / *USW Decision Support*

Proj 3094	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
USW-DSS Build 3																												
Build 3 Design / Development																												
Build 3 Integration / Test Events																												
USW-DSS Build 4																												
Build 4 Design / Development																												
Build 4 Integration / Test Events																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>	Project (Number/Name) 3094 / <i>USW Decision Support</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3094				
USW-DSS Build 3: Build 3 Design / Development: Build 3 Design	1	2017	3	2017
USW-DSS Build 3: Build 3 Design / Development: Build 3 Development	3	2017	3	2018
USW-DSS Build 3: Build 3 Integration / Test Events: Build 3 Integration & Test	4	2017	4	2018
USW-DSS Build 3: Build 3 Integration / Test Events: Build 3 Certification Test	1	2019	2	2019
USW-DSS Build 4: Build 4 Design / Development: Build 4 Design	2	2019	4	2019
USW-DSS Build 4: Build 4 Design / Development: Build 4 Development	4	2019	4	2021
USW-DSS Build 4: Build 4 Integration / Test Events: Build 4 Integration & Test	4	2021	4	2021