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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0204574N / <i>Cryptologic Direct Support</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	25.146	4.244	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.390
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	25.146	4.244	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.390

A. Mission Description and Budget Item Justification

Funding for the following project has been realigned out of PE 0204574N into PE 0304785N as part of Program Element Consolidation starting in FY20: Project 3091 (Advanced Cryptological Sys Eng).

The Advanced Cryptologic Systems Engineering - The Cryptologic Carry-on Program (CCOP) rapidly develops and fields state-of-the-art signal acquisition capabilities in response to Combatant Command requirements for a quick-reaction surface cryptologic carry-on capability. There are 124 cryptologic capable surface ships and shore sites in the current Navy inventory; each of these is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, numerous Navy and Coast Guard platforms serve as other potential users.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>
Previous President's Budget	4.544	0.000	0.000	-	0.000
Current President's Budget	4.244	0.000	0.000	-	0.000
Total Adjustments	-0.300	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.300	0.000			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204574N / <i>Cryptologic Direct Support</i>				Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	25.146	4.244	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.390
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding has been realigned out of PE 0204574N Project 3091, into PE 0304785N as part of RDTE PE Consolidation starting in FY20.

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) rapidly develops and fields state-of-the-art signal acquisition capabilities in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability. There are approximately 124 cryptologic capable surface ships and shore sites in the current Navy inventory; each is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, there are other numerous Naval platforms (including U.S. Coast Guard and USNs) that could serve as potential users. This funding line provides resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off -The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems providing system and mission management, product reporting, and data analysis. COTS / GOTS system documentation and training materials require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Prior to operational deployment, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence security requirements, and network testing is conducted in accordance with Information Technology (IT) requirements to allow connection to Navy networks. Funding will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements. Funding will support development and integration efforts to fuse data produced and distributed by Shipboard IW / Information Operations (IO) systems with other intelligence data at multiple classification levels which is then provided to shipboard combat systems to support kinetic (bombs, mortars, missiles, bullets, etc.) and non-kinetic fires (electronic attack, lasers, cyber) in order to enable a more agile, effective and complete exploitation of the electromagnetic spectrum.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Advanced Cryptological Sys Eng - CCOP	4.244	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2020 Plans: FY20 funding has been realigned to PE 0304785N Project 3091 as part of PE Consolidation.					
FY 2021 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204574N / <i>Cryptologic Direct Support</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY21 funding has been realigned to PE 0304785N Project 3091 as part of PE Consolidation.					
FY 2021 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	4.244	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN / 3501: <i>Cryptologic Communications Equip</i>	29.141	9.510	10.063	-	10.063	11.169	11.435	11.671	11.907	0.000	213.792
• RDTEN/0304785N/3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	0.000	4.515	4.638	-	4.638	4.681	4.829	4.928	5.027	Continuing	Continuing

Remarks

D. Acquisition Strategy
Acquisition, management, and contracting strategies support engineering and manufacturing development by providing funds to Naval Information Warfare Systems Command (NIWC) Atlantic and Pacific, and miscellaneous contractors with management oversight by Naval Information Warfare Systems Command (NAVWAR).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0204574N / Cryptologic Direct Support				Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Software Development	Various	Various : Various	6.109	0.000		0.000		0.000		-		0.000	0.000	6.109	-
Software Development	C/CPFF	Classified Contract : Classified Contract	7.640	2.556	Jan 2019	0.000		0.000		-		0.000	0.000	10.196	-
Software Development	WR	NIWC PAC : San Diego, CA	2.605	0.560	Nov 2018	0.000		0.000		-		0.000	0.000	3.165	-
Software Development	WR	NIWC LANT : Charleston, SC	1.914	0.289	Nov 2018	0.000		0.000		-		0.000	0.000	2.203	-
Subtotal			18.268	3.405		0.000		0.000		-		0.000	0.000	21.673	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Systems Engineering	Various	Various : Various	1.915	0.000		0.000		0.000		-		0.000	0.000	1.915	-
Systems Engineering	C/CPFF	Classified Contract : Classified Contract	1.821	0.444	Jan 2019	0.000		0.000		-		0.000	0.000	2.265	-
Subtotal			3.736	0.444		0.000		0.000		-		0.000	0.000	4.180	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Developmental Test & Evaluation	Various	Various : Various	0.991	0.000		0.000		0.000		-		0.000	0.000	0.991	-
Developmental Test & Evaluation	WR	NIWC LANT : Charleston, SC	0.095	0.183	Nov 2018	0.000		0.000		-		0.000	0.000	0.278	-
Subtotal			1.086	0.183		0.000		0.000		-		0.000	0.000	1.269	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Management Services Prior Years	Various	Various : Various	1.273	0.000		0.000		0.000		-		0.000	0.000	1.273	-
Program Management Support	WR	NIWC PAC : San Diego, CA	0.783	0.212	Nov 2018	0.000		0.000		-		0.000	0.000	0.995	-
Subtotal			2.056	0.212		0.000		0.000		-		0.000	0.000	2.268	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		25.146	4.244	0.000	0.000	-	0.000	0.000	29.390	N/A

Remarks
FY20 and FY21 cost data is provided under PE 0304785N Project 3091.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204574N / <i>Cryptologic Direct Support</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>

Exhibit R-4, RDT&E Program Schedule Profile																								
Appropriation/Budget Activity					Program Element Name and Number										Project Name and Number									
RDT&E,N / BA 05					0204574N Cryptologic Direct Support										Advanced Cryptologic Systems Engineering (CCOP) / 3091									
Fiscal Year	2019																							
	1	2	3	4																				
Prototype Phase	[]																							
System Development	△ SDR																							
Software Delivery			△																					
T&E Milestones																								
Operational Assessment				△ OA																				

Exhibit R-4, Program Schedule Profile

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204574N / <i>Cryptologic Direct Support</i>	Project (Number/Name) 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3091</i>				
Prototype Phase - 2019	1	2019	4	2019
System Design Review (SDR) - 2019	2	2019	2	2019
Software Delivery - 2019	3	2019	4	2019
Operational Assessment (OA) - 2019	4	2019	4	2019