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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 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0204574N / <i>Cryptologic Direct Support</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	18.127	1.627	1.915	1.122	-	1.122	1.236	2.288	2.337	2.383	Continuing	Continuing
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	18.127	1.627	1.915	1.122	-	1.122	1.236	2.288	2.337	2.383	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - The Cryptologic Carry-on Program develops state-of-the-art signal acquisition software 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 other Navy and Coast Guard platforms are potential users.

B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	1.627	1.915	1.185	-	1.185
Current President's Budget	1.627	1.915	1.122	-	1.122
Total Adjustments	0.000	0.000	-0.063	-	-0.063
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	-0.063	-	-0.063

Change Summary Explanation

Decrease in Cryptologic Direct Support by \$0.05M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy										Date: February 2016		
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 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
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	18.127	1.627	1.915	1.122	-	1.122	1.236	2.288	2.337	2.383	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) develops state-of-the-art signal acquisition software 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 numerous subsurface and air platforms that are also potential users. This funding line will provide the 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 that provide system and mission management, product reporting, and data analysis. COTS/GOTS system documentation and training materials usually require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Before deployment for operational use, 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.

FY17 funds will continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and target threat list. Funds will continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Funds will aid the development of new signal processing algorithms and software based solutions to enable rapid transition to permanently installed Ship's Signal Exploitation Space (SSES) systems and the research of self contained small form factor systems for Patrol craft and other small units.

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Advanced Cryptological Sys Eng - CCOP	1.157	1.915	1.122	0.000	1.122
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Continued to integrate, test and document identified COTS and GOTS technologies and subsystems that met emergent and on-going Fleet requirements as specified in the SOI and targeted threat list. Continued to develop					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
upgrades to existing systems and subsystems according to Fleet requirements. Continued the development of new signal processing algorithms and software based solutions to enable rapid transition.					
FY 2016 Plans: Continue to integrate, test and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the SOI and target threat list. Continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Continue the development of new signal processing algorithms and software based solutions to enable rapid transition to permanently installed SSES systems and the research of self contained small form factor systems for Patrol craft and other small units. Develop enhanced Red Falcon systems to combat future SOI.					
FY 2017 Base Plans: Continue to integrate, test and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the SOI and target threat list. Continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Continue the development of new signal processing algorithms and software based solutions to enable rapid transition.					
FY 2017 OCO Plans: N/A					
Title: Advanced Cryptological Sys Eng - CCOP Red Falcon OCO					
Articles:					
	0.470	0.000	0.000	0.000	0.000
	-	-	-	-	-
FY 2015 Accomplishments: Developed enhanced Red Falcon systems which will provide additional processing and collection of simultaneous targets (additional details held at a higher classification).					
FY 2016 Plans: In FY16, Red Falcon requirements transition to baseline under the Advanced Cryptological Systems Engineering line.					
FY 2017 Base Plans: N/A					
FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals					
	1.627	1.915	1.122	0.000	1.122

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>			<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPN / 3501: <i>Cryptologic Communications Equipment</i>	11.502	11.433	21.098	-	21.098	10.498	10.669	10.927	11.150	0.000	136.329

Remarks

D. Acquisition Strategy

Acquisition, management, and contracting strategies are to support engineering and manufacturing development by providing funds to Space and Naval Warfare (SPAWAR) Systems Centers Atlantic and Pacific, and miscellaneous contractors with management oversight by SPAWAR.

E. Performance Metrics

Cryptologic Carry On Program (CCOP) will deliver state-of-the-art signal acquisition software for CCOP systems in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy												Date: February 2016				
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 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	
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	3.221	1.011	Dec 2014	1.252	Dec 2015	0.676	Dec 2016	-		0.676	Continuing	Continuing	Continuing	
Software Development	WR	SSC PAC : San Diego, CA	2.056	0.092	Nov 2014	0.100	Nov 2015	0.067	Nov 2016	-		0.067	Continuing	Continuing	Continuing	
Software Development	WR	SSC LANT : Charleston, SC	1.205	0.204	Nov 2014	0.205	Nov 2015	0.150	Nov 2016	-		0.150	Continuing	Continuing	Continuing	
Subtotal			12.591	1.307		1.557		0.893		-		0.893	-	-	-	
Support (\$ 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	
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	1.057	0.187	Dec 2014	0.214	Dec 2015	0.133	Dec 2016	-		0.133	Continuing	Continuing	Continuing	
Subtotal			2.972	0.187		0.214		0.133		-		0.133	-	-	-	
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	
Developmental Test & Evaluation	C/CPFF	Classified Contract : Classified Contract	0.513	0.000		0.000		0.000		-		0.000	0.000	0.513	-	
Developmental Test & Evaluation	WR	NPGS : Monterey, CA	0.159	0.032	Apr 2015	0.035	Apr 2016	0.023	Apr 2017	-		0.023	Continuing	Continuing	Continuing	
Developmental Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	0.139	0.032	Apr 2015	0.035	Apr 2016	0.023	Apr 2017	-		0.023	Continuing	Continuing	Continuing	
Subtotal			0.811	0.064		0.070		0.046		-		0.046	-	-	-	

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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	DATE: February 2016
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Appropriation/Budget Activity RDT&E, N / BA 7	Program Element Name and Number 0204574N Cryptologic Direct Support	Project Name and Number Advanced Cryptologic Systems Engineering (CCOP) / 3091
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Fiscal Year	2015				2016				2017				2018				2019				2020				2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prototype Phase	■				■				□				□				□				□				□			
System Development	▲ SDR				△ SDR				△ SDR				△ SDR				△ SDR				△ SDR				△ SDR			
Software Delivery					▲				△				△				△				△				△			
T&E Milestones					OA				OA				OA				OA				OA				OA			
Operational Assessment					▲				△				△				△				△				△			

Exhibit R-4, Program Schedule Profile

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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
Proj 3091				
Prototype Phase - 2015	1	2015	4	2015
Prototype Phase - 2016	1	2016	4	2016
Prototype Phase - 2017	1	2017	4	2017
Prototype Phase - 2018	1	2018	4	2018
Prototype Phase - 2019	1	2019	4	2019
Prototype Phase - 2020	1	2020	4	2020
Prototype Phase - 2021	1	2021	4	2021
System Design Review (SDR) - 2015	2	2015	2	2015
System Design Review (SDR) - 2016	2	2016	2	2016
System Design Review (SDR) - 2017	2	2017	2	2017
System Design Review (SDR) - 2018	2	2018	2	2018
System Design Review (SDR) - 2019	2	2019	2	2019
System Design Review (SDR) - 2020	2	2020	2	2020
System Design Review (SDR) - 2021	2	2021	2	2021
Software Delivery - 2015	3	2015	4	2015
Software Delivery - 2016	3	2016	4	2016
Software Delivery - 2017	3	2017	4	2017
Software Delivery - 2018	3	2018	4	2018
Software Delivery - 2019	3	2019	4	2019
Software Delivery - 2020	3	2020	4	2020
Software Delivery - 2021	3	2021	4	2021

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Operational Assessment (OA) - 2015	4	2015	4	2015
Operational Assessment (OA) - 2016	4	2016	4	2016
Operational Assessment (OA) - 2017	4	2017	4	2017
Operational Assessment (OA) - 2018	4	2018	4	2018
Operational Assessment (OA) - 2019	4	2019	4	2019
Operational Assessment (OA) - 2020	4	2020	4	2020
Operational Assessment (OA) - 2021	4	2021	4	2021

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