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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy **Date:** February 2015

Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0304785N / Tactical Cryptologic Systems							
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	258.427	9.406	10.827	17.785	-	17.785	15.429	12.535	25.038	25.552	Continuing	Continuing
2134.: Shipboard IW Exploit	258.427	9.406	10.827	17.785	-	17.785	15.429	12.535	25.038	25.552	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Shipboard Information Warfare (IW) line includes the Ship's Signal Exploitation Equipment (SSEE) Increment (Inc) E, F, G and Modifications programs. The SSEE program is a classified IW / Electronic Warfare (EW) and tactical cryptologic system that provide critical tactical intelligence, situational awareness, battlespace awareness, indications and warnings and hostile threat assessment. These systems provide the battle group and combatant commanders with the surface fleet's only EW non-kinetic capabilities ("Finish"). In addition they provide the battle groups with real time indications and warnings by acquisition ("Find") and localization ("Fix") of Signals of Interest (SOI). As an incremental acquisition program, Research, Development, Test & Evaluation (RDT&E) funding is required to have new technologies and associated new operational capabilities rapidly developed and transitioned as Pre-Planned Product Improvements (P3I) upgrades into the system's hardware/software configuration. This program's funding incorporates P3I, new Commercial Off-the-Shelf (COTS) based technologies and software into the existing systems. Funding will also focus on developing and delivering expanded non-kinetic EW capabilities and net-centric Service Oriented Architecture (SOA), which includes the development, integration and test of Medusa and the SSEE Modifications capabilities in support of "Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations (CNO) Executive Board Information Operation (IO) Countermeasure Red Flash/Medusa (Additional details held at a higher classification level)."

FY15 OCO funds (\$470K) required for the development of Red Falcon systems in order to combat future SOI.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	9.406	10.357	18.949	-	18.949
Current President's Budget	9.406	10.827	17.785	-	17.785
Total Adjustments	-	0.470	-1.164	-	-1.164
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-	-	-
• Rate/Misc Adjustments	-	0.470	-1.164	-	-1.164

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<u>Change Summary Explanation</u> The increase in funding from FY15 to FY16 is due to commencement of SSEE Modifications Phase 3 hardware and software development to provide capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa", as well as Red Falcon system development. As a result of ongoing Pre-Acquisition Activities including AoA and cost estimates, the below changes have been made to the Inc G Schedule: INC G - 3 EDMs reduced to 2 EDMs INC G - RFP shifted from QTR 1 FY16 to QTR 2 FY16 INC G - Development contract award shifted from QTR 3 FY16 to QTR 4 FY16 INC G - SRR shifted from QTR 1 FY17 to QTR 2 FY17 INC G - PDR shifted from QTR 1 FY17 to QTR 4 FY17 INC G - CDR shifted from QTR 2 FY17 to QTR 3 FY18		

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Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / <i>Tactical Cryptologic Systems</i>				Project (Number/Name) 2134. / <i>Shipboard IW Exploit</i>			
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
2134.: <i>Shipboard IW Exploit</i>	258.427	9.406	10.827	17.785	-	17.785	15.429	12.535	25.038	25.552	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Shipboard Information Warfare (IW) line includes the Ship's Signal Exploitation Equipment (SSEE) Increment (Inc) E, F, G and Modifications programs. The SSEE program is a classified IW / Electronic Warfare (EW) and tactical cryptologic system that provide critical tactical intelligence, situational awareness, battlespace awareness, indications and warnings and hostile threat assessment. These systems provide the battle group and combatant commanders with the surface fleet's only EW non-kinetic capabilities ("Finish"). In addition they provide the battle groups with real time indications and warnings by acquisition ("Find") and localization ("Fix") of Signals of Interest (SOI). As an incremental acquisition program, Research, Development, Test & Evaluation (RDT&E) funding is required to have new technologies and associated new operational capabilities rapidly developed and transitioned as Pre-Planned Product Improvements (P3I) upgrades into the system's hardware/software configuration. This program's funding incorporates P3I, new Commercial Off-the-Shelf (COTS) based technologies and software into the existing systems. Funding will also focus on developing and delivering expanded non-kinetic EW capabilities and net-centric Service Oriented Architecture (SOA), which includes the development, integration and test of Medusa and the SSEE Modifications capabilities in support of "Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations (CNO) Executive Board Information Operation (IO) Countermeasure Red Flash/Medusa (Additional details held at a higher classification level)."

SSEE Inc E will initiate software and hardware development of Medusa intended for integration into the SSEE Inc E system in support of accelerated development and operationalization of "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa.

SSEE Inc F will be developing software and hardware upgrades in support of emergent adversary Signal of Interest (SOI), inserting SOI and new technology enhancements via incremental software builds and corresponding hardware upgrades.

SSEE Inc G will integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa" and expand upon the IW / Electronic Warfare (EW) and tactical cryptologic system capability of exploiting signals throughout the Radio Frequency (RF) spectrum, in addition to focusing new technologies towards new and previously unexplored/unexploited CYBER capabilities to integrate into the Integrated Fires (IF) architecture. SSEE Inc G will build off of the advancement of the Inc F system to automate and integrate all existing Ship's Signal Exploitation Space (SSES) capabilities into a common user interface, while still advancing and incorporating new technologies through an open software architecture that allows for rapid integration and deployment of those capabilities.

The SSEE Modifications program includes the "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa", capabilities of Paragon and Graywing. Paragon is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into Ship's Signal Exploitation Equipment (SSEE) Inc E and F programs. This capability provides simultaneous detection, collection, processing, Electronic Warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or encountered today. Graywing is an electronic sensing and attack capability that shares the Paragon topside exploitation assets and will be integrated into SSEE Inc E and F systems.

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FY16 funding for Ship's Signal Exploitation Equipment (SSEE) Increment (Inc) F will continue pre-planned product improvements (P3I), expand the SOI processing capability, enhance SSEE Inc F remote capabilities and integrate Medusa HW into the SSEE Inc F scan chassis.

FY16 funding for SSEE Inc G will be used to complete acquisition activities and contract development efforts. Contract development efforts will continue to integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa" and expand upon the IW / Electronic Warfare (EW) and tactical cryptologic system capability of exploiting signals throughout the Radio Frequency (RF) spectrum, in addition to focusing new technologies towards new and previously unexplored/unexploited cyber capabilities as we integrate into the Integrated Fires (IF) architecture.

FY16: Commence SSEE Modifications Phase 3 hardware and software development to provide capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa." Improved capabilities will include: (1) A 200% increase in the number of signal types which can be countered by Graywing (2) Addition of high fidelity Graywing techniques against existing and new signals to dramatically improve combat effectiveness (3) Integration of new special signals capabilities (Red Falcon and Joint Signals Processor) providing a 200% increase in the types of special signals exploited by Paragon (4) Use of High Gain Information Operations (HGIO) antenna to triple the range of detection, exploitation, and information operations against high priority special signals. Speed to Fleet efforts within SSEE Mods uses hardware provided in conjunction with Graywing development to deliver a self-contained, transportable system to provide shore based capabilities. In addition to providing an independent shore based capability the Speed to Fleet design provides an alternative Graywing receive and transmit subsystem design for risk reduction to Program of Record (POR). The transportable Speed to Fleet Graywing also provides an accessible platform to rapidly demonstrate new or improved Information Operations (IO) capabilities by providing a relatively low cost land-based field test article. Furthermore, the hardware developed under this project could be adapted as a roll-on/roll-off ship configuration to supplement the POR installations, if needed by the Fleet. Graywing is a sub system of the SSEE Modification Program to expand the capability of the Ship Signal Exploitation Equipment (SSEE).

The Speed to Fleet efforts will deliver a new firmware spiral that increases the capability of Medusa to respond to a wider range of threat systems, and to improve aspects of its capabilities. It will also deliver a laboratory test system that will be used to validate future firmware changes. Medusa is a sub system of the SSEE POR.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Ship's Signal Exploitation Equipment Inc F (SSEE Inc F)	2.119	1.554	2.759	-	2.759
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					
Continued pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. Expanded SOI processing capabilities to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities. Continued development and delivery of Electronic Warfare (EW) capabilities based upon the warfighter identified, FY14 SOI threats (annually-updated) for integration into the SSEE Inc F system. Enhanced the SSEE Inc F remote capabilities and usability providing increased functionality and capabilities to remote and local users. Incorporated the next incremental					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
software build, which allowed transition of the SSEE Inc F software Graphic User Interface (GUIs) to SSEE Inc E. Continued development of third party software, including an Interface Control Drawing (ICD) and Software Development Kit (SDK) processes, which allows new capabilities to be hosted into the SSEE Inc F system in support of the "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa". Continued hardware and software development of Medusa Phase II.						
FY 2015 Plans: Continue pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. Expand SOI processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities in support of time critical military strike operations and subsequent processing and analysis for timely and accurate situational awareness for force protection. Develop and deliver EW capabilities based upon the warfighter identified, FY15 SOI threats (annually-updated) for integration into the SSEE Inc F system. Enhance the SSEE Inc F remote capabilities and usability providing increased functionality and capabilities to remote and local users. Integrate Medusa hardware into the SSEE Inc F scan chassis. Maintain cognizance of current warfighter-identified signal set and make additions and improvements to the system as needed.						
FY 2016 Base Plans: Continue pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. Expand SOI processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities in support of time critical military strike operations and subsequent processing and analysis for timely and accurate situational awareness for force protection. Develop and deliver EW capabilities based upon the warfighter identified FY16 SOI threats (annually-updated) for integration into the SSEE Inc F system. Develop enhanced Red Falcon systems to combat future SOI. Enhance the SSEE Inc F remote capabilities and usability providing increased functionality and capabilities to remote and local users. Maintain cognizance of current warfighter-identified signal set and make additions and improvements to the system as needed.						
FY 2016 OCO Plans: N/A						
Title: Ship's Signal Exploitation Equipment Inc G (SSEE Inc G)		0.840	1.472	4.787	-	4.787
Articles:		-	-	-	-	-
FY 2014 Accomplishments:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Commenced pre-acquisition activities, capability gap analysis, AoA analysis, and continued to integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa." FY 2015 Plans: Continue pre-acquisition activities, requirements documentation, contract development, and continue to integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa." FY 2016 Base Plans: Complete pre-acquisition activities. Deliver requirements and acquisition documentation to support milestone decision. Award contract for development efforts. Integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa." FY 2016 OCO Plans: N/A						
Title: Ship's Signal Exploitation Red Falcon (OCO) Articles:		- -	0.470 -	- -	- -	- -
FY 2014 Accomplishments: N/A FY 2015 Plans: Develop enhanced Red Falcon systems which will provide additional processing and collection of simultaneous targets (additional details held at a higher classification). FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: SSEE Modifications Articles:		5.348 -	7.331 -	10.239 -	- -	10.239 -
FY 2014 Accomplishments: Continued Phase 1.5 development for Operational Testing (OT) and commenced Phase 2 hardware and software development to provide capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash" including automation of key system operation and maintenance procedures and additional SOIs in support of Fleet needs; and enhanced system capabilities for Graywing and Paragon in						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
order to meet FRP performance thresholds. Integrated SSEE Modifications with SSEE Increment F special capabilities. Continued support of SSEE Modifications Low Rate Initial Production (LRIP) system to MIL-STD-461F and MIL-STD-464C standards. Conducted topside survey for SSEE Modifications installation on ARLEIGH BURKE Flight IIA Class Destroyers. Developed Level 3 Technical Data Packages. FY 2015 Plans: Complete SSEE Modifications Phase 2 hardware and software development to provide: capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash" including automation of key system operation and maintenance procedures; additional SOIs in support of Fleet needs; and enhanced system capabilities for Graywing and Paragon in order to meet Full Rate Production (FRP) performance thresholds and provide P3I improvement. Funds will support development efforts to enable more robust signal exploitation. Expand integration with SSEE Increment F special capabilities. Enrich Graywing scan and search capabilities. Provide test plans and procedures for follow on testing and evaluation, including an updated Test and Evaluation Master Plan (TEMP). Conduct extensive integration and testing in support of correction of deficiencies identified during test events. FY 2016 Base Plans: Commence SSEE Modifications Phase 3 hardware and software development to provide capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash" including additional SOIs in support of Fleet needs; and enhanced system capabilities for Graywing and Paragon in order to meet Full Rate Production (FRP) performance thresholds and provide P3I improvement. Continue to support development efforts to enable more robust signal exploitation and expand integration with SSEE Increment F special capabilities. Provide test plans and procedures for follow on testing and evaluation. Conduct Developmental Testing (DT) as well as Initial Operational Test & Evaluation (IOT&E). Attain Joint Integration Test Command (JITC) certification. Continue to conduct extensive integration and testing in support of the correction of deficiencies identified during test events. FY 2016 OCO Plans: N/A						
Title: Ship's Signal Exploitation Equipment Inc E (SSEE Inc E) Articles:		0.200 -	- -	- -	- -	- -
FY 2014 Accomplishments: Integrated, assembled and tested Medusa Splitrock capabilities to the SSEE Inc E System. FY 2015 Plans:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Title: Shipboard IW Exploit	0.899	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Graywing: - Continue development, test and evaluation in support of Operational Testing (OT) and enhance system capabilities for Graywing in order to meet Full Rate Production (FRP) performance thresholds. TACAID: - Continue development of an enhanced tactical decision aid (TACAID) which will provide additional capabilities compared to the baseline TACAID being incorporated into Ship Signals Exploitation Equipment (SSEE) under the SSEE prototype tool and at sea testing.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	9.406	10.827	17.785	-	17.785

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN / 2360: <i>Shipboard IW Exploit</i>	100.736	125.662	148.221	-	148.221	169.819	163.988	186.667	190.437	Continuing	Continuing
• OPN / 2188: <i>Electronic Warfare MILDEC</i>	8.958	-	-	-	-	-	-	-	-	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)											
			FY 2016	FY 2016	FY 2016					Cost To	
Line Item	FY 2014	FY 2015	Base	OCO	Total	FY 2017	FY 2018	FY 2019	FY 2020	Complete	Total Cost
Remarks											
D. Acquisition Strategy											
Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to a Prime Contractor and Space & Naval Warfare Systems Command (SPAWAR) Systems Center (SSC) - Atlantic, SSC - Pacific and miscellaneous contractors, with management oversight by SPAWAR. Funding supports development and demonstration to rapidly deliver advanced and improved Information Operation (IO) capabilities to the Fleet. The Shore based Graywing unit developed will provide a rapidly deployable capability for the protection of land based resources. Multiple copies of the first article can be replicated depending on operational needs. These systems could also be used as a carry on capability to supplement the Graywing ship installations via the SSEE Mods ACAT III program or to those ships that are not SSEE capable. The Medusa upgrade adds additional capabilities via software to address a different class of radars which are proliferating, allowing backfit into existing systems via a new software load.											
E. Performance Metrics											
Ship's Signal Exploitation Equipment (SSEE) Increment (Inc) F will incorporate pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. SSEE Inc F improvements along with the addition of the SSEE Modifications and Medusa capabilities will expand signals of interest (SOI) processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities in support of time critical military strike operations and subsequent processing and analysis for timely and accurate situational awareness for force protection. The SSEE Modifications program includes the "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa", capabilities of Paragon and Graywing. Paragon is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into Ship's Signal Exploitation Equipment (SSEE) Inc E and F programs. SSEE Inc G will expand upon the IW / Electronic Warfare (EW) and tactical cryptologic system capability of exploiting signals throughout the Radio Frequency (RF) spectrum, in addition to focusing new technologies towards new and previously unexplored/unexploited cyber capabilities as we integrate into the Integrated Fires (IF) architecture. Program of Record (POR) specification has established Graywing performance metrics that will be met in the Speed to Fleet transportable version. Field testing will be used to verify this performance. Medusa firmware modifications will meet existing Medusa performance metrics for the new signal classes and will be verified via bench testing and end-to-end field testing.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 Hardware Development	Various	Various : Various	73.395	-		-		-		-		-	-	73.395	-
Primary Hardware Development	WR	SSC PAC : San Diego, CA	4.025	-		-		-		-		-	-	4.025	-
Systems Engineering	Various	Various : Various	22.309	-		-		-		-		-	-	22.309	-
Systems Engineering	C/CPAF	Classified Contract : Classified Contract	6.517	0.286	Apr 2014	0.515	Nov 2014	1.500	Nov 2015	-		1.500	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC PAC : San Diego, CA	3.275	0.238	Nov 2013	0.265	Nov 2014	0.500	Nov 2015	-		0.500	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC LANT : Charleston, SC	4.722	-		0.294	Nov 2014	0.551	Nov 2015	-		0.551	Continuing	Continuing	Continuing
Training Development	WR	SSC PAC : San Diego, CA	2.309	-		-		-		-		-	-	2.309	-
Primary Hardware Development	C/CPAF	Classified Contract : Classified Contract	11.231	-		-		-		-		-	-	11.231	-
Primary Hardware Development	WR	NRL : Washington, DC	1.900	-		-		-		-		-	-	1.900	-
Primary Software Development	WR	NRL : Washington, DC	1.220	0.150	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Integration, Assembly & Test (PMP Dev)	WR	SSC PAC : San Diego, CA	1.814	0.503	Nov 2013	0.358	Nov 2014	0.668	Nov 2015	-		0.668	Continuing	Continuing	Continuing
Integration, Assembly & Test (PMP Dev)	WR	NRL : Washington, DC	1.670	0.170	Nov 2013	0.170	Nov 2014	0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
Software Development	Various	Various : Various	40.776	-		-		-		-		-	-	40.776	-
Integration, Assembly & Test	WR	OPTEVFOR : Norfolk, VA	0.039	-		-		-		-		-	Continuing	Continuing	Continuing
Software Development	C/CPAF	Classified Contracts : Classified Contracts	22.627	3.616	Apr 2014	4.512	Nov 2014	5.334	Nov 2015	-		5.334	Continuing	Continuing	Continuing
Primary Hardware Development	WR	SSC LANT : Charleston, SC	0.747	-		-		-		-		-	-	0.747	-
Software Development	WR	SSC PAC : San Diego, CA	1.328	0.041	Nov 2013	0.070	Nov 2014	0.141	Nov 2015	-		0.141	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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, Assembly & Test	C/CPAF	Classified Contracts : Classified Contracts	1.910	0.071	Nov 2013	0.310	Nov 2014	0.580	Nov 2015	-		0.580	Continuing	Continuing	Continuing
Integration, Assembly & Test	WR	NAVSEA : NAVSEA	0.112	-		-		-		-		-	-	0.112	-
Integration, Assembly & Test	WR	NUWC New Port : NUWC New Port	0.075	-		-		-		-		-	-	0.075	-
Integration, Assembly & Test	WR	NSWC Dahlgren : NSWC Dahlgren	0.042	-		-		-		-		-	-	0.042	-
Software Development	WR	SSC LANT : Charleston, SC	0.000	0.020	Nov 2013	0.040	Nov 2014	0.086	Nov 2015	-		0.086	Continuing	Continuing	Continuing
Integration, Assembly & Test (PMP Dev)	WR	SSC LANT : Charleston, SC	0.000	0.217	Apr 2014	0.245	Nov 2014	0.461	Nov 2015	-		0.461	Continuing	Continuing	Continuing
Subtotal			202.043	5.312		6.779		10.071		-		10.071	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Training Development	Various	Various : Various	0.079	-		-		-		-		-	-	0.079	-
Training Development	C/CPFF	Classified Contract : Classified Contract	0.995	0.050	Nov 2013	0.115	Nov 2014	0.223	Nov 2015	-		0.223	Continuing	Continuing	Continuing
Integrated Logistics Support	Various	Various : Various	2.206	-		-		-		-		-	-	2.206	-
Integrated Logistics Support	C/CPFF	Classified Contract : Classified Contract	0.300	-		0.110	Nov 2014	0.214	Nov 2015	-		0.214	Continuing	Continuing	Continuing
Configuration Management	WR	SSC Lant : Charleston, SC	1.638	0.049	Nov 2013	0.092	Nov 2014	0.181	Nov 2015	-		0.181	Continuing	Continuing	Continuing
Configuration Management	WR	SSC PAC : San Diego, CA	0.336	0.250	Nov 2013	0.085	Nov 2014	0.169	Nov 2015	-		0.169	Continuing	Continuing	Continuing
Technical Data	Various	Various : Various	0.542	-		-		-		-		-	-	0.542	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / <i>Tactical Cryptologic Systems</i>				Project (Number/Name) 2134. / <i>Shipboard IW Exploit</i>					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Technical Data	WR	SSC PAC : San Diego, CA	1.456	0.099	Nov 2013	0.155	Nov 2014	0.297	Nov 2015	-		0.297	Continuing	Continuing	Continuing
Training Development	WR	SSC LANT : Charleston, SC	0.225	-		0.053	Nov 2014	0.110	Nov 2015	-		0.110	Continuing	Continuing	Continuing
Integrated Logistic Support	WR	SSC LANT : Charleston, SC	0.250	0.087	Nov 2013	0.125	Nov 2014	0.242	Nov 2015	-		0.242	Continuing	Continuing	Continuing
EDM Installation	WR	SSC LANT IMO : Charleston, SC	1.500	-		-		-		-		-	-	1.500	-
Requirements Analysis	WR	SSC LANT : Charleston, SC	0.000	-		0.085	Nov 2014	0.169	Nov 2015	-		0.169	Continuing	Continuing	Continuing
Requirements Analysis	WR	SSC PAC : San Diego, CA	0.000	-		-		-		-		-	-	-	-
Studies & Design	WR	SSC PAC : San Diego, CA	0.000	-		0.284	Nov 2014	0.533	Nov 2015	-		0.533	Continuing	Continuing	Continuing
Studies & Design	C/CPFF	Classified Contract : Classified Contract	0.000	0.170	Nov 2013	0.192	Nov 2014	0.364	Nov 2015	-		0.364	Continuing	Continuing	Continuing
Studies & Design	WR	NAVSEA : NAVSEA	0.000	-		0.245	Nov 2014	0.461	Nov 2015	-		0.461	Continuing	Continuing	Continuing
Requirements Analysis	C/CPFF	Classified Contract : Classified Contract	0.000	0.319	Apr 2014	0.385	Nov 2014	0.717	Nov 2015	-		0.717	Continuing	Continuing	Continuing
Subtotal			9.527	1.024		1.926		3.680		-		3.680	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	7.375	-		-		-		-		-	-	7.375	-
Developmental Test & Evaluation	WR	SSC PAC : San Diego, CA	1.120	0.789	Apr 2014	0.462	Nov 2014	0.858	Nov 2015	-		0.858	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	SSC LANT : Charleston, SC	1.264	0.097	Apr 2014	0.129	Nov 2014	0.249	Nov 2015	-		0.249	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / <i>Tactical Cryptologic Systems</i>				Project (Number/Name) 2134. / <i>Shipboard IW Exploit</i>					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	WR	NRL : Washington, DC	1.072	-		-		-		-		-	-	1.072	-
Operational Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	3.473	-		-		-		-		-	-	3.473	-
Test Assets	WR	SSC PAC : San Diego, CA	1.747	-		-		-		-		-	-	1.747	-
Test Assets	WR	SSC LANT : Charleston, SC	0.155	-		-		-		-		-	-	0.155	-
Operational Test & Evaluation	WR	SSC LANT : Charleston, SC	0.500	-		-		-		-		-	-	0.500	-
Developmental Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	0.125	-		-		-		-		-	-	0.125	-
Developmental Test & Evaluation	C/CPFF	Classified Contracts : Classified Contracts	0.833	0.270	Apr 2014	0.320	Nov 2014	0.598	Nov 2015	-		0.598	Continuing	Continuing	Continuing
Operational Test & Evaluation	C/CPFF	Classified Contracts : Classified Contracts	0.090	-		-		-		-		-	-	0.090	-
Developmental Test & Evaluation	C/CPFF	NSWC Dahlgren : Dahlgren, VA	0.000	0.120	Apr 2014	0.125	Nov 2014	0.242	Nov 2015	-		0.242	Continuing	Continuing	Continuing
Developmental Test and Evaluation	WR	NRL : Washington DC	1.097	0.899	Nov 2013	-		-		-		-	-	1.996	-
Subtotal			18.851	2.175		1.036		1.947		-		1.947	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Contractor Engineering Support	Various	Various : Various	0.933	-		-		-		-		-	-	0.933	-
Contractor Engineering Support	C/CPFF	Classified Contract : Classified Contract	1.840	0.196	Nov 2013	0.395	Nov 2014	0.736	Nov 2015	-		0.736	Continuing	Continuing	Continuing
Government Engineering Support	Various	Various : Various	1.290	-		-		-		-		-	-	1.290	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / <i>Tactical Cryptologic Systems</i>				Project (Number/Name) 2134. / <i>Shipboard IW Exploit</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Government Engineering Support	WR	SSC LANT : Charleston, SC	1.271	0.206	Nov 2013	0.086	Nov 2014	0.170	Nov 2015	-		0.170	Continuing	Continuing	Continuing
Government Engineering Support	WR	SSC PAC : San Diego, CA	1.664	0.174	Nov 2013	0.072	Nov 2014	0.145	Nov 2015	-		0.145	Continuing	Continuing	Continuing
Program Management Support	Various	Various : Various	16.211	-		-		-		-		-	-	16.211	-
Program Management Support	C/CPFF	Classified Contract : Classified Contract	1.386	0.109	Apr 2014	0.254	Nov 2014	0.478	Nov 2015	-		0.478	Continuing	Continuing	Continuing
Program Management Support	WR	SSC LANT : Charleston, SC	0.568	0.040	Nov 2013	0.094	Nov 2014	0.193	Nov 2015	-		0.193	Continuing	Continuing	Continuing
Travel	WR	SPAWAR : San Diego, CA	2.231	0.015	Nov 2013	0.015	Nov 2014	0.040	Nov 2015	-		0.040	Continuing	Continuing	Continuing
Acquisition Workforce	Various	Various : Various	0.062	-		-		-		-		-	-	0.062	-
Contractor Engineering Support	C/CPFF	SPAWAR : San Diego, CA	0.550	0.155	Nov 2013	0.170	Nov 2014	0.325	Nov 2015	-		0.325	Continuing	Continuing	Continuing
Subtotal			28.006	0.895		1.086		2.087		-		2.087	-	-	-
			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			258.427	9.406		10.827		17.785		-		17.785	-	-	-
Remarks															

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PE 0304785N: *Tactical Cryptologic Systems*
Navy

R-1 Line #147

Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Progress (%)	Budget (USD)	Actual Cost (USD)	Variance (USD)	Risk Level	Notes
101	2023-01-01	2023-03-31	90	John Doe	Completed	100	100000	98000	2000	Low	Project completed ahead of schedule.
102	2023-02-01	2023-05-31	120	Jane Smith	In Progress	75	150000	145000	5000	Medium	Minor delays in procurement.
103	2023-03-01	2023-06-30	120	Mike Johnson	On Hold	20	200000	200000	0	High	Waiting for client approval.
104	2023-04-01	2023-07-31	120	Sarah Lee	Planned	0	180000	0	180000	Low	Initial planning phase.
105	2023-05-01	2023-08-31	120	David Kim	On Hold	10	120000	120000	0	Medium	Resource allocation pending.
106	2023-06-01	2023-09-30	120	Emily White	Planned	0	160000	0	160000	Low	Feasibility study in progress.
107	2023-07-01	2023-10-31	120	Chris Brown	Planned	0	140000	0	140000	Medium	Market research ongoing.
108	2023-08-01	2023-11-30	120	Alex Green	Planned	0	110000	0	110000	Low	Concept development phase.
109	2023-09-01	2023-12-31	120	Olivia Black	Planned	0	90000	0	90000	Medium	Initial requirements gathering.
110	2023-10-01	2024-01-31	120	Noah Grey	Planned	0	70000	0	70000	Low	Project charter approved.
111	2023-11-01	2024-02-28	120	Ava Blue	Planned	0	50000	0	50000	Medium	Scope definition in progress.
112	2023-12-01	2024-03-31	120	Liam Yellow	Planned	0	30000	0	30000	Low	Resource booking initiated.
113	2024-01-01	2024-04-30	120	Mia Purple	Planned	0	20000	0	20000	Medium	Stakeholder interviews planned.
114	2024-02-01	2024-05-31	120	Ethan Red	Planned	0	15000	0	15000	Low	Vendor selection process.
115	2024-03-01	2024-06-30	120	Sophia Pink	Planned	0	10000	0	10000	Medium	Project initiation phase.
116	2024-04-01	2024-07-31	120	Lucas Orange	Planned	0	8000	0	8000	Low	Task assignment in progress.
117	2024-05-01	2024-08-31	120	Isabella Light Blue	Planned	0	6000	0	6000	Medium	Communication plan draft.
118	2024-06-01	2024-09-30	120	Mason Light Green	Planned	0	4000	0	4000	Low	Project kick-off meeting.
119	2024-07-01	2024-10-31	120	Charlotte Light Yellow	Planned	0	3000	0	3000	Medium	Resource allocation confirmed.
120	2024-08-01	2024-11-30	120	Benjamin Light Purple	Planned	0	2000	0	2000	Low	Project planning phase.

PE 0304785N / Tactical Cryptologic Systems

2134. *I Shipboard IW Exploit*

PE 0304785N: *Tactical Cryptologic Systems*
Navy

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

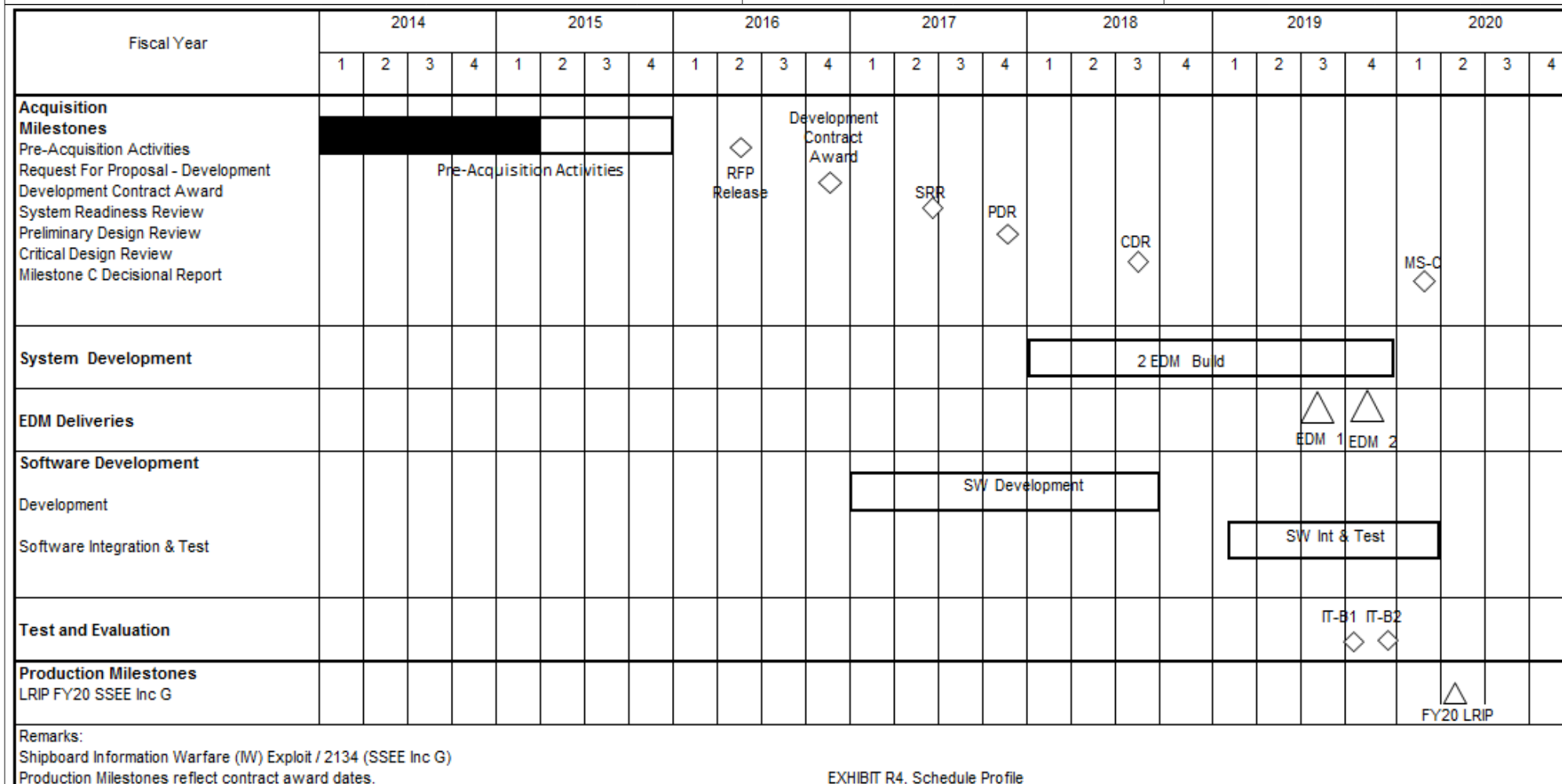
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R-1 Program Element (Number/Name)

PE 0304785N / *Tactical Cryptologic Systems*

Project (Number/Name)

2134. / *Shipboard IW Exploit*



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PE 0304785N: *Tactical Cryptologic Systems*
Navy

R-1 Line #147

Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Notes
101	2023-01-01	2023-01-15	14	John Doe	Completed	Project completed successfully.
102	2023-01-16	2023-02-01	16	Jane Smith	In Progress	Project is currently in progress.
103	2023-02-02	2023-02-15	13	John Doe	Completed	Project completed successfully.
104	2023-02-16	2023-03-01	15	Jane Smith	In Progress	Project is currently in progress.
105	2023-03-02	2023-03-15	13	John Doe	Completed	Project completed successfully.
106	2023-03-16	2023-03-31	15	Jane Smith	In Progress	Project is currently in progress.
107	2023-04-01	2023-04-15	14	John Doe	Completed	Project completed successfully.
108	2023-04-16	2023-05-01	15	Jane Smith	In Progress	Project is currently in progress.
109	2023-05-02	2023-05-15	13	John Doe	Completed	Project completed successfully.
110	2023-05-16	2023-05-31	15	Jane Smith	In Progress	Project is currently in progress.

PE 0304785N / Tactical Cryptologic Systems

2134. *I Shipboard IW Exploit*

Fiscal Year	2014				2015				2016				2017				2018				2019				2020			
	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
Acquisition Milestones																												
Integrated Logistics Assessment (ILA)																												
Milestone C Decision (MS C)																												
Full Rate Production (FRP) Decision																												
Installation																												
EDM																												
LRIP Retrofit Kits																												
LRIP																												
FRP																												
Software Development																												
SSEE MODS																												
Baseline SW Development																												
Test & Evaluation																												
Production Acceptance Testing																												
Factory Acceptance Testing																												
Development Test																												
Operational Assessment																												
IOT&E																												
Operational Test																												
Production																												
LRIP FY14																												
FRP FY15																												
FRP FY16																												
FRP FY17																												
FRP FY18																												
FRP FY19																												
FRP FY20																												
Procurements																												

Remarks:

- 1) Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Mods)
- 2) Production Milestones reflect contract award dates
- 3) FY14 Production Milestones include 2 Full Systems and 2 LBTF Configuration Systems
- 4) FY16 Production Milestones include 6 Systems, 1 Maintenance Training Systems
- 5) FY17 Production Milestones include 9 Systems and 2 Operator Training System
- 6) FY18 Production Milestones include 8 Systems and 1 Operator Training System
- 7) SSEE MODS Software development integrated and tested in junction with SSEE INC F Software builds

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / <i>Tactical Cryptologic Systems</i>	Project (Number/Name) 2134. / <i>Shipboard IW Exploit</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSEE Inc F				
Inc F - Software Development	2	2014	4	2019
Inc F - Material Support Date (MSD)	3	2014	3	2014
Inc F - Joint Integration Test Command (JITC) Certification	3	2015	3	2015
Inc F - JITC Certification FY15	3	2019	3	2019
Inc F - JITC Certification FY19	1	2019	1	2019
Inc F - FY14 FRP Production Milestone	1	2014	1	2014
Inc F - FY15 FRP Production Milestone	1	2015	1	2015
Inc F - FY16 FRP Production Milestone	1	2016	1	2016
Inc F - FY17 FRP Production Milestone	1	2017	1	2017
Inc F - FY18 FRP Production Milestone	1	2018	1	2018
Inc F - FY19 FRP Production Milestone	1	2019	1	2019
SSEE Modifications				
SSEE Modifications - ILA #2	4	2015	1	2016
SSEE Modifications - ILA #3	4	2018	1	2019
SSEE Modifications - Fielding Decision (MSC)	2	2014	2	2014
SSEE Modifications - Fielding Decision (FRP)	3	2016	3	2016
SSEE Modifications - Initial Operating Capability (IOC)	3	2017	3	2017
SSEE Modifications - LRIP Retrofit Kits Installation	2	2015	3	2015
SSEE Modifications - LRIP Full Systems Installation	1	2015	4	2015
SSEE Modifications - FRP Installation (5)	2	2017	4	2017
SSEE Modifications - FRP Installation (7)	2	2018	4	2019

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0304785N / Tactical Cryptologic
Systems

Project (Number/Name)

2134. / Shipboard IW Exploit

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSEE Modifications - FRP Installation (8)	2	2018	4	2018
SSEE Modifications - FRP Installation (10)	2	2020	4	2020
SSEE Modifications - Software Development (LRIP Build 9)	1	2014	4	2015
SSEE Modifications - Software Development (LRIP Build 10)	1	2015	4	2015
SSEE Modifications - Software Development (FRP Build 11)	1	2017	4	2017
SSEE Modifications - Software Development (FRP Build 12)	1	2014	1	2018
SSEE Modifications - Software Development (FRP Build 13)	1	2018	1	2018
SSEE Modifications - Software Development (FRP Build 14)	1	2019	4	2019
SSEE Modifications - Software Development (FRP Build 15)	1	2020	4	2020
SSEE Modifications - Production Acceptance Testing (LRIP)	4	2014	4	2014
SSEE Modifications - Factory Acceptance Testing (LRIP)	1	2015	1	2015
SSEE Modifications - Development Testing (IT-E1/E2)	1	2016	1	2016
SSEE Modifications - Joint Integration Test Command (JITC) Certification FY16	2	2016	2	2016
SSEE Modifications - Operational Testing (OT-E1)	2	2016	2	2016
SSEE Modifications - Operational Testing (FOT&E)	2	2017	3	2017
SSEE Modifications - Joint Integration Test Command (JITC) Certification FY19	3	2019	3	2019
SSEE Modifications - FY14 LRIP Production Milestone	2	2014	2	2014
SSEE Modifications - FY15 FRP Production Milestone	2	2015	2	2015
SSEE Modifications - FY16 FRP Production Milestone	2	2016	2	2016
SSEE Modifications - FY17 FRP Production Milestone	2	2017	2	2017
SSEE Modifications - FY18 FRP Production Milestone	2	2018	2	2018
SSEE Modifications - FY19 FRP Production Milestone	2	2019	2	2019
SSEE Modifications - FY20 FRP Production Milestone	2	2020	2	2020
SSEE Inc G				
Inc G Pre-Acquisition Activities	1	2014	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / Tactical Cryptologic Systems		Project (Number/Name) 2134. / Shipboard IW Exploit	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Inc G - Request for Proposal Release		2	2016	2	2016
Inc G - Milestone B		2	2016	2	2016
Inc G - Development Contract Award		4	2016	4	2016
Inc G - System Readiness Review		2	2017	3	2017
Inc G - Preliminary Design Review		4	2017	4	2017
Inc G - Critical Design Review		3	2018	3	2018
Inc G - EDM Build		1	2018	4	2019
Inc G - Software Development		1	2017	3	2018
Inc G - Software Integration & Test		1	2019	1	2020
Inc G - EDM Deliveries		3	2019	4	2019
Inc G - MS C Decision		1	2020	1	2020
Inc G - Development Testing (IT-B1)		2	2019	4	2019
Inc G - Development Testing (IT-B2)		4	2019	4	2019
Inc G - FY20 LRIP Production Milestone		2	2020	2	2020