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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 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</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	1.654	15.993	46.403	99.998	-	99.998	107.905	129.528	92.746	87.920	Continuing	Continuing
2263: <i>Information Warfare System</i>	1.654	15.993	46.403	99.998	-	99.998	107.905	129.528	92.746	87.920	Continuing	Continuing

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

Research, assess, and develop information warfare capabilities.

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

	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017 Base</u>	<u>FY 2017 OCO</u>	<u>FY 2017 Total</u>
Previous President's Budget	16.567	46.609	124.058	-	124.058
Current President's Budget	15.993	46.403	99.998	-	99.998
Total Adjustments	-0.574	-0.206	-24.060	-	-24.060
• Congressional General Reductions	-	-0.206			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.574	0.000			
• Program Adjustments	0.000	0.000	-44.830	-	-44.830
• Rate/Misc Adjustments	0.000	0.000	20.770	-	20.770

**Change Summary Explanation**

Decrease in Elect Warfare Readiness Support by \$3.1M 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 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>				<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</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>
2263: <i>Information Warfare System</i>	1.654	15.993	46.403	99.998	-	99.998	107.905	129.528	92.746	87.920	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

Information Operations (IO) Counter Measure Capability Research and Development: Develops software to account for antenna modeling, weather calculations, radio frequency modeling, signals mapping and terrain modeling for warfighter use in configuring optimal Electronic Attack (EA) from afloat.

Maritime Cryptologic Systems for the 21st Century Systems Development and Support: Develops and fields spiral Electronic Support, and cyber capabilities against U.S. Navy's prioritized signals, networks, and target sets. EA capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface Information Operations (IO) platforms (Classic Troll, Banshee and Ships Signal Exploitation Equipment Increment E and Increment F) sponsored Pacific Sail (PACSAIL) research project. Signal Descriptor File (SDF) Configuration Management Authority (SCMA) is the technical lead for the development, testing and validation of electronic support and electronic attack techniques for Maritime Cryptologic Systems in support of Navy-wide Information Operations planning.

Research, Analysis and Research and Development Technical Support: Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management capabilities to the program management office.

Computer Network Operations: Funds development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities. Develops specific Cyber tools, techniques, and operators in support of Fleet Cyber Command and Commander, TENTH Fleet requirements. (Specific development details held at a higher classification level). Conducts vulnerability analyses and reverse engineering on improvised explosive devices (Specific details held at a higher classification level)

Task Force Cyber Awakening (TFCA), provides cyber security investments to expand Operation Rolling Tide (ORT) approach to address near term and executable vulnerabilities across Platform IT (PIT) capabilities. These projects and capabilities include the studies and analysis to support PIT improvements to ensure systems are optimally configured to enhance Navy's ability to maneuver in this expanding environment.

Mocking Jay: Analytical and engineering effort to develop cyber capabilities in the maritime domain. Enables development of new operating systems to ensure access and cyber weapons delivery. (Specific details held at a higher classification level)

Maritime Cyber Operations: Analytical and engineering effort to develop cyber capabilities in the maritime domain. Funds additional development and testing of computer networks for vulnerability analysis, reverse engineering and simulation systems, and closed development networks. (Specific details held at a higher classification level)

Twisted Web: A developmental capability that improves Fleet ability to safely operate in all ocean areas by reducing adversary capability to engage kinetically. Funds risk reduction and system engineering development for project initiation.(Specific details held at a higher classification level)

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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 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<p><b>Title:</b> Electronic Warfare / Information Operations (IO) Countermeasure Capability Research &amp; Development</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Description: Information Operations (IO) Counter Measure Capability Research and Development: Develops and tests IO Countermeasure capabilities across various platforms. Develops specific waveforms to attack adversary systems. Develops and uses modeling and simulation techniques to prototype and test emergent waveforms.</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>*Conduct collection efforts in support of capability development (details held at a higher classification level)</li> <li>*Site (VAL) infrastructure updates to support additional collection efforts, further technical understanding, and capability development (details held at a higher classification level)</li> <li>*Measures of Effectiveness (MOE) software development and Graphical User Interface (GUI) updates (details held at a higher classification level)</li> <li>*Provide technical information to increase effectiveness of Information Operations (IO) systems development/ planning and situational awareness (details held at a higher classification level)</li> <li>*Conduct search operations to provide strategic Indications and Warnings (I&amp;W) and OPINTEL analysis (details held at a higher classification level)</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>*Continue to conduct collection efforts in support of capability development</li> <li>*Additional Site infrastructure updates to support collection efforts, further technical understanding, and capability development</li> <li>*Continue to provide technical information to increase effectiveness of Information Operations (IO) systems development/planning and situational awareness</li> <li>*Continue to conduct search operations to provide strategic Indications and Warnings (I&amp;W) and OPINTEL analysis</li> <li>*Technical, engineering, and intelligence related studies.</li> <li>*Leverage existing capabilities to characterize evolving adversary capabilities.</li> <li>*Evaluation of Fleet capabilities and operations that affect system specifications</li> </ul>	10.984	19.631	22.408	0.000	22.408
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy		<b>Date:</b> February 2016
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<p>*Develop and use modeling and simulation techniques to characterize operating environment.</p> <p><b>FY 2017 Base Plans:</b></p> <p>*Develop and test capability in a maritime operational environment in order to integrate into standard US Navy shipboard systems and show initial proof of concept in a real world environment.</p> <p>*Continue to conduct search and collection efforts against high priority adversary systems for target development and to support countermeasure design.</p> <p>*Procurement of additional RF front end systems to expand search survey and collection efforts, further technical understanding, and capability development</p> <p>*Continue to provide technical information to increase effectiveness of Information Operations (IO) systems development/ planning and situational awareness</p> <p>*Maintenance support for continued search operations to provide strategic Indications and Warnings (I&amp;W) and OPINTEL analysis. This allows a more thorough understanding of adversary TTP's and systems to develop effective countermeasures.</p> <p>* Initial technology engineering and design of new countermeasure systems/capabilities.</p> <p>* Planned S2F operational/maritime testing for FY17</p> <p><b>FY 2017 OCO Plans:</b> N/A</p>					
<p><b>Title:</b> Electronic Warfare Readiness/MCS-21 Systems Development</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Description: Maritime Cryptologic Systems for the 21st Century Systems Development: Develops and fields spiral Electronic Support (ES), Electronic Attack (EA) and cyber capabilities against Fleet Forces Command prioritized signals, networks and target sets. Capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface Information Operations platforms (Classic Troll, Banshee and Ships Signal Exploitation Equipment Increment E and F). Signal Descriptor File (SDF) Configuration Management Authority (SCMA) is the technical lead for the development, testing and</p>	0.301	3.502	3.035	0.000	3.035
	-	-	-	-	-

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**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>
<p>validation of ES and EA techniques for Maritime Cryptologic Systems in support of Navy-wide Information Operations planning.</p> <p><b><i>FY 2015 Accomplishments:</i></b></p> <ul style="list-style-type: none"> <li>*Redirect internal funding to reduce risk created by elimination of funds from other organizations to support SCMA .</li> <li>*Upgrade current SDF development and validation systems to maintain concurrency with systems on maritime platforms.</li> <li>*Continue IW/IO EA capability development &amp; integration (Details held at higher classification level)</li> <li>*Continue specific wave form (EA) Research and Analysis (Details held at higher classification level).</li> <li>*Continue IW/IO EA capability development &amp; integration into POR systems (Details held at higher classification level)</li> <li>*Develop Initial Capability for Remote SDF development</li> <li>*Continue ES (SDF) Research, Development and Analysis (Details held at higher classification level).</li> <li>*Develop a capability to rapidly demodulate and decode FFC priority signals.</li> </ul> <p><b><i>FY 2016 Plans:</i></b></p> <ul style="list-style-type: none"> <li>*Deploy a SDF Remoting capability enabling SDF creation across the globe at eight Signal Analysis Labs with Initial Operational Capability</li> <li>*Develop and test ES capabilities across various platforms.</li> <li>*Develop and test IO Countermeasures capabilities across various platforms.</li> <li>*Purchase a system to support next generation electronic support and electronic attack capability development</li> <li>*Develop specific waveforms to attack adversary systems.</li> <li>*Develop and use modeling and simulations techniques to prototype and test emergent waveforms.</li> <li>*Modeling and Simulation Lab (Applied/projected level of effort).</li> <li>*IW/IO/EA capability development (Details held at a higher classification level).</li> <li>*Waveform Weapon Development.</li> <li>*Increase the number of priority signals that can be demodulated and decoded.</li> <li>*New Project Kickoff (SCMA) - signal descriptor file (SDF). Configuration Management Authority</li> </ul> <p><b><i>FY 2017 Base Plans:</i></b></p> <ul style="list-style-type: none"> <li>*Develop and test ES capabilities across various platforms.</li> <li>*Develop and test IO Countermeasures capabilities across various platforms.</li> <li>*Develop specific waveforms to attack adversary systems.</li> </ul>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<p>*Develop and use modeling and simulations techniques to prototype and test emergent waveforms.</p> <p>*Modeling and Simulation Lab (Applied/projected level of effort).</p> <p>*IW/IO/EA capability development (Details held at a higher classification level)</p> <p>*Waveform Weapon Development.</p> <p>*Upgrade current SDF development and validation systems to maintain concurrency with systems on maritime platforms.</p> <p>*Purchase a system to support next generation electronic support and electronic attack capability development</p> <p>*Increase development and testing of electronic attack capabilities across maritime platforms</p> <p>*Upgrade systems and infrastructure to support next generation electronic support and electronic attack capability development</p> <p>*Full Operating Capability for Remoted SDF capability</p> <p>*Increase the number of priority signals that can be demodulated and decoded.</p> <p><b>FY 2017 OCO Plans:</b> N/A</p>					
<p><b>Title:</b> Electronic Warfare/Research, Analysis and R&amp;D Technical Support</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Description: Research, Analysis, and Research and Development Technical Support: Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management capabilities to the program management office. (Specific details held at a higher classification level)</p> <p><b>FY 2015 Accomplishments:</b></p> <p>*Conduct vulnerability analysis and reverse engineering on emerging threats and targets and provide specialized technical, engineering and management capabilities to the program management office. (Specific details held at a higher classification level).</p> <p>*Technical and intelligence related studies and contractor engineering, technical and management capabilities.</p> <p>*Research and Analysis (Details held at higher classification level).</p> <p><b>FY 2016 Plans:</b></p> <p>*Conduct vulnerability analysis and reverse engineering on emerging threats and targets and provide specialized technical, engineering and management capabilities to the program management office. (Specific details held at a higher classification level).</p>	1.550	4.509	5.255	0.000	5.255
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
<p>*Technical and intelligence related studies and contractor engineering, technical and management capabilities.                  *Research and Analysis (Details held at higher classification level).</p> <p><b>FY 2017 Base Plans:</b>                  *Develop and test IO Countermeasures capabilities across various platforms.                  *Develop specific waveforms to attack adversary systems.                  *Develop and use modeling and simulations techniques to prototype and test emergent waveforms.                  *Modeling and Simulation Lab (Applied/projected level of effort).                  *Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level).                  *Waveform Weapon Development.</p> <p><b>FY 2017 OCO Plans:</b>                  N/A</p>					
<p><b>Title:</b> Electronic Warfare/Computer Network Operations (CNO)</p> <p align="right"><b>Articles:</b></p>					
<p><b>Description:</b> Description: Computer Network Operations (CNO): Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management capabilities to the program management office. (Specific details held at a higher classification level.) Computer Network Operations: Funds development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities. Develop specific Cyber tools, techniques, and operators in support of Fleet Cyber Command and Commander, TENTH Fleet requirements (Specific development details held at a higher classification level). Conduct vulnerability analysis and reverse engineering on improvised explosive devices (Specific details held at a higher classification level). Maritime Cyber Operations: Analytical and engineering effort to develop cyber capabilities in the maritime domain. Funds additional development and testing of computer networks for vulnerability analysis, reverse engineering and simulation systems, and closed development networks. Details can be provided separately in an appropriate environment.</p> <p><b>FY 2015 Accomplishments:</b>                  *Develop Cyber tools, techniques, and operators in support of Fleet Cyber Command and Commander, TENTH Fleet requirements. (Specific development details held at a higher classification level). * Software development to increase speed for virtual testing. * Delivery and installation of software.                  *CNO Research and Development Integration Testing Facility.</p>					
	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
	1.658	4.961	4.769	0.000	4.769
	-	-	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
<p>*Computer Network Attack Capabilities (Details held at a higher classification level).</p> <p>*Demonstration of Advanced Computer Network Operations Concept (Details held at a higher classification level).</p> <p><b>FY 2016 Plans:</b></p> <p>*Software development for adaptation to and utilization of modern technologies.</p> <p>*Software development for collaboration and synchronization with other Navy projects;</p> <p>*Coordinate with USCYBERCOM J9 for targeting opportunities (Details held at higher classification level).</p> <p>*Reverse engineer assets (Details held at higher classification level).</p> <p>*Develop effective countermeasures (Details held at higher classification level).</p> <p>*Provide specialized training courses (Details held at higher classification level).</p> <p><b>FY 2017 Base Plans:</b></p> <p>*Develop and test IO Countermeasures capabilities across various platforms.</p> <p>*Develop specific waveforms to attack adversary systems.</p> <p>*Develop and use modeling and simulations techniques to prototype and test emergent waveforms.</p> <p>*Modeling and Simulation Lab (Applied/projected level of effort).</p> <p>*Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level).</p> <p>*Coordinate with USCYBERCOM J9 for targeting opportunities (Details held at higher classification level).</p> <p>*Reverse engineer assets (Details held at higher classification level).</p> <p><b>FY 2017 OCO Plans:</b></p> <p>N/A</p>					
<p><b>Title:</b> Twisted Web</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Description: Twisted Web: A developmental capability that improves Fleet ability to safely operate in all ocean areas by reducing adversary capability to engage kinetically Funds risk reduction and system engineering development for project initiation. Details available at classified level.</p> <p><b>FY 2015 Accomplishments:</b></p> <p>*Risk Reduction Efforts ahead of FY2016 project kickoff</p> <p>*Conduct collection efforts in support of capability development (details held at a higher classification level)</p>	0.750 -	3.000 -	40.154 -	0.000 -	40.154 -

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**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>
<p>*Site (VAL) infrastructure updates to support additional collection efforts, further technical understanding, and capability development (details held at a higher classification level)</p> <p>*Measures of Effectiveness (MOE) software development and Graphical User Interface (GUI) updates (details held at a higher classification level)</p> <p>*Provide technical information to increase effectiveness of Information Operations (IO) systems development/ planning and situational awareness (details held at a higher classification level)</p> <p>*Conduct search operations to provide strategic Indications and Warnings (I&amp;W) and OPINTEL analysis (details held at a higher classification level)</p> <p><b>FY 2016 Plans:</b></p> <p>*New project kickoff</p> <p>*Continue to conduct collection efforts in support of capability development</p> <p>*Additional Site infrastructure updates to support collection efforts, further technical understanding, and capability development</p> <p>*Continue to provide technical information to increase effectiveness of Information Operations (IO) systems development/planning and situational awareness</p> <p>*Continue to conduct search operations to provide strategic Indications and Warnings (I&amp;W) and OPINTEL analysis</p> <p>*Technical, engineering, and intelligence related studies.</p> <p>*Leverage existing capabilities to characterize evolving adversary capabilities.</p> <p>*Evaluation of Fleet capabilities and operations that affect system specifications</p> <p>*Develop and use modeling and simulation techniques to prototype system and characterize operating environment.</p> <p><b>FY 2017 Base Plans:</b></p> <p>*OSD directed ACAT II program which will meet milestone B and C</p> <p>*Prime contract kickoff to begin development of critical system components</p> <p>*Initial technology engineering and design (NRE) cost to include substantial hardware and software development and testing</p> <p>*Modelling and simulation of critical system components</p> <p>*Site surveys and facilities development (fitting electronic equipment racks, equipment, equipment components, computers)</p>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
desks, workstations, etc. large enough to support the R&D efforts required for this project) *Continue to provide technical information to increase effectiveness of Information Operations (IO) systems development/ planning and situational awareness *Continue to conduct search operations to provide strategic Indications and Warnings (I&W) and OPINTEL analysis. (Details held at a higher classification) <b>FY 2017 OCO Plans:</b> N/A					
<b>Title:</b> TFCA  <b>Description:</b> Description: Task Force Cyber Awakening (TFCA) as directed by the CNO, provides cyber security investments to expand Operation Rolling Tide (ORT) approach to address near term and executable vulnerabilities across Platform IT (PIT) capabilities. These projects and capabilities include the studies and analysis to support PIT improvements to ensure systems are optimally configured to enhance Navy's ability to maneuver in this expanding environment.  <b>FY 2015 Accomplishments:</b> N/A  <b>FY 2016 Plans:</b> * New project kickoff * Initial studies and Analysis for vulnerability assessment * Complete initial plans for PIT improvements and system configurations  <b>FY 2017 Base Plans:</b> * N/A - Project moved in FY17 to OMN LI 4C1P (Issue #16019)  <b>FY 2017 OCO Plans:</b> N/A	<b>Articles:</b>	0.000 -	3.000 -	0.000 -	0.000 -
<b>Title:</b> Mocking Jay  <b>Description:</b> (DETAILS HELD AT A HIGHER CLASSIFICATION) Chief of Naval	<b>Articles:</b>	0.750 -	7.800 -	24.377 -	0.000 -

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**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>
<p>Operations (CNO)-directed project to develop Cyber capabilities in the maritime domain. Project includes innovative intelligence activities to develop analytical and engineering assessments, an industrial Laboratory facility to provide training and certification of the Navy's contribution to the USCYBERCOM Cyber Mission Force, and development of new Cyber capabilities and accesses to meet COCOM/USCYBERCOM/FLTCYBERCOM requirements. Enables development of new operating systems to ensure access and Cyber weapons delivery.</p> <p><b>FY 2015 Accomplishments:</b> * Risk Reduction Efforts ahead of FY2016 project kickoff</p> <p><b>FY 2016 Plans:</b> * New project kickoff * Develop intelligence analysis to determine specific technical vulnerabilities for Computer Network Operations (Specific development details held at a higher classification level). * Funds development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities.</p> <p><b>FY 2017 Base Plans:</b> *CNO directed top-down program in support specific cyber related R&amp;D projects * Develop intelligence analysis to determine specific technical vulnerabilities for Computer Network Operations * Funds the development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities * Funds the lease and build out of an industrial Laboratory space able to accommodate 180 personnel (intelligence analysts, engineers, and Cyber developers ) and specialized information technology and exploitation equipment in order to create a premier Navy Cyberspace development capability (fitting electronic equipment racks, equipment, equipment components, computers, desks, workstations) * Funds build out of a Cyber Infrastructure to support research and development of a Navy option for Unified Platform.</p>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
* Funds continued development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities. Networks will be expanded to support growing Navy Cyber Mission Force requirements. * Continue detailed innovative intelligence analysis to determine specific technical vulnerabilities for Computer Network Operations. (DETAILS HELD AT A HIGHER CLASSIFICATION)  <b>FY 2017 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	15.993	46.403	99.998	0.000	99.998

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017 Base</u>	<u>FY 2017 OCO</u>	<u>FY 2017 Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTEN/0604270N/1742: <i>Electronic Warfare Technical Development</i>	1.652	1.642	1.665	-	1.665	1.596	0.000	0.000	0.000	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**  
 These programs are designated non-ACAT and operate under streamlined acquisition. This designation supports a streamlined acquisition process using the Advanced Concept Technology Demonstration documentation of the Defense Acquisition Guidance.

**E. Performance Metrics**  
 Measures include quality and impact of new ideas and approaches, the success of the technology application in satisfying Combatant Commanders and Fleet requirements, and successful cost effective transition of the capability into operational systems. The goal of these investments is to provide to Commanders non-kinetic options to influence adversaries and prevent escalation of crises. Due to the nature and classification of these efforts, qualitative measures are used. It is the intent through the development of modeling and simulation scenarios and capabilities to develop quantitative metrics. The success of this depends heavily on the insight obtained via various intelligence community efforts.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2017 Navy</b>											<b>Date:</b> February 2016				
<b>Appropriation/Budget Activity</b> 1319 / 7						<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>					<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>				

<b>Product Development (\$ in Millions)</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>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Primary Hardware Development	Various	Classified-1 : Classified	0.000	2.200	Oct 2014	13.914	Nov 2015	22.346	Oct 2016	-		22.346	Continuing	Continuing	Continuing
System Engineering	SS/CPFF	Applied Research Laboratory : University Park, PA	0.000	3.589	Oct 2014	6.296	Dec 2015	8.932	Dec 2016	-		8.932	0.000	18.817	-
Systems Engineering	WR	NRL : Washington, DC	0.000	3.084	Oct 2014	9.300	Oct 2015	10.360	Oct 2016	-		10.360	0.000	22.744	-
Ancillary Hardware Development	Various	Classified : Classified	0.000	0.000		0.000		5.000	Nov 2016	-		5.000	0.000	5.000	-
Training Development (Classified)	Reqn	Classified : Classified	0.000	0.500	Oct 2014	0.810	Oct 2015	0.910	Oct 2016	-		0.910	0.000	2.220	-
Training Development (CDL)	Reqn	NAVICP : Philadelphia, PA	0.000	0.061	Oct 2014	0.098	Oct 2015	0.099	Oct 2016	-		0.099	0.000	0.258	-
<b>Subtotal</b>			0.000	9.434		30.418		47.647		-		47.647	-	-	-

**Remarks**  
Training Development: Contract Method is Government Purchase Card (GPC).

<b>Support (\$ in Millions)</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>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Development Support	SS/CPFF	ARGON-1 : Fairfax, VA	0.000	0.234	Oct 2014	0.370	Dec 2015	0.570	Dec 2016	-		0.570	0.000	1.174	-
Software Development	SS/CPFF	L3 Communications : New York, NY	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Development Support	WR	SSC PAC : San Diego, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Software Development	SS/CPFF	ARGON-2 : Fairfax, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Development Support	WR	NRL-1 : Washington, DC	0.000	1.169	Oct 2014	3.520	Oct 2015	4.520	Oct 2016	-		4.520	0.000	9.209	-

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

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>
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<b>Support (\$ 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			
Development Support	Various	Classified-1 : Classified	0.000	1.050	Oct 2014	2.920	Oct 2015	32.290	Oct 2016	-		32.290	0.000	36.260	-
Studies & Analysis	WR	NRL-2 : Washington, DC	1.654	0.000		0.000		0.000		-		0.000	0.000	1.654	-
Software Development	SS/CPFF	ARL : University Park, PA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Software Development	Various	Classified-2 : Classified	0.000	0.000		3.100	Jan 2016	4.100	Jan 2017	-		4.100	0.000	7.200	-
Development Support	Various	Classified : Classified	0.000	0.750	Jan 2016	0.000		0.000		-		0.000	0.000	0.750	-
Integrated Logistics Support (ILS)	Reqn	NAVICP : Philadelphia, PA	0.000	0.046	Oct 2014	0.074	Oct 2015	0.075	Dec 2016	-		0.075	0.000	0.195	-
Technical Data (Software Programs & Ref Materials)	Reqn	NPWC : Chesapeake, VA	0.000	0.025	Nov 2014	0.040	Nov 2015	0.040	Nov 2016	-		0.040	0.000	0.105	-
Studies & Analysis	MIPR	Classified : Classified	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Comm'l Drivers Licenses (CDL)	Reqn	Classified : Classified	0.000	0.009	Oct 2014	0.041	Jan 2016	0.000	Jan 2017	-		0.000	0.000	0.050	-
<b>Subtotal</b>			1.654	3.283		10.065		41.595		-		41.595	0.000	56.597	-

**Remarks**  
 CDL, ILS & Tech Data: Contract Method is Government Purchase Card (GPC).  
 CDLs are required for Command Personnel to drive Command Vehicles supporting the installation of mission hardware.

<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			
Developmental Test & Evaluation	WR	NAWC : China Lake, CA	0.000	0.226	Dec 2014	0.360	Dec 2015	2.870	Dec 2016	-		2.870	0.000	3.456	-
<b>Subtotal</b>			0.000	0.226		0.360		2.870		-		2.870	0.000	3.456	-







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

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 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
Development Work: Unique Access (UA): Systems Engineering - TW																												
Development Work: Unique Access (UA): Supposrt Systems Engineering - TW																												
Development Work: Unique Access (UA): Primary Compound Acquisition and Installation - TW																												
Development Work: Unique Access (UA): Secondary Compound Acquisition and Installation - TW																												
Development Work: Unique Access (UA): Subsystem Enhancement & Integration - TW																												
Development Work: Unique Access (UA): Subsystem Enhancement & Intregation - TW																												
TESTING: Prototypes: 1-Prototypes																												
TESTING: Prototypes: 2-Prototypes																												
TESTING: Prototypes: 3 - Prototypes - Factory Acceptance Testing (FAT), TRTD, CNO Unique Access																												
TESTING: Prototypes: 4 - Prototypes - Classified																												
TESTING: Prototypes: 5 - Prototypes - Classified																												
TESTING: Prototypes: 6 - Prototypes - Classified																												
TESTING: Prototypes: 7 - Prototypes - Classified																												
TESTING: Maritime Cryptological System (MCS-21) Integration: 1 - MCS-21 Integration																												

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

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 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
Factory Acceptance Testing (FAT), Operational Testing																												
TESTING: Maritime Cryptological System (MCS-21) Integration: 2 - MCS-21 Integration - Classified							■																					
TESTING: Maritime Cryptological System (MCS-21) Integration: 3 - MCS-21 Integration - Classified											■																	
TESTING: Maritime Cryptological System (MCS-21) Integration: 4 - MCS-21 Integration - Classified														■														
TESTING: Maritime Cryptological System (MCS-21) Integration: 5 - MCS-21 Integration - Classified																												
TESTING: Maritime Cryptological System (MCS-21) Integration: 6 - MCS-21 Integration																												
DELIVERIES: Information Operations Capabilities (IOC): Information Operations Capabilities (IOC) Modeling & Simulation Lab				■																								
DELIVERIES: Information Operations Capabilities (IOC): 1 - MCS-21 IOC - Spiral Enhancements																												
DELIVERIES: Information Operations Capabilities (IOC): 2 - MCS-21 IOC - Classified																												
DELIVERIES: Information Operations Capabilities (IOC): 3 - MCS-21 IOC - Classified																												



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

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 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
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 2-CNO Capabilities - Spiral Enhancements / Full Operational Capability (FOC)								■																				
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 3 -CNO Capabilities - Classified												■																
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 4 - CNO Capabilities - Classified																■												
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 5 - CNO Capabilities																				■								
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 6 - CNO Capabilities																												■
DELIVERIES: Cyber Network Operations (CNO) Capabilities: TW - Function Classified - 1																■												
DELIVERIES: Cyber Network Operations (CNO) Capabilities: TW - Function Classified - 2																				■								
DELIVERIES: Cyber Network Operations (CNO) Capabilities: TW - Function Classified - 3																												■
DELIVERIES: Maritime Cryptological System (MSC-21): 6 - CNO Capabilities																												■
DELIVERIES: Maritime Cryptological System (MSC-21): MCS-21 Product Line - Full Operational Capability (FOC)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Navy		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Information Warfare System</b>				
Acquisition Milestones: Milestone B	2	2017	2	2017
Acquisition Milestones: IOC - Initial Operational Capability	3	2019	3	2019
Acquisition Milestones: FOC - Full Operational Capability	4	2020	4	2020
Systems Engineering: CDD/RFP APPROVAL (Capability Development Document / Request for Proposal)	4	2016	4	2016
Systems Engineering: SRR - SRR - System Requiements Review	2	2017	2	2017
Systems Engineering: PDR - Preliminary Design Review	3	2017	3	2017
Systems Engineering: CDR - Critical Design Review	1	2018	1	2018
Systems Engineering: ATO - Authorization to Operate	3	2019	3	2019
Development Work: Waveforms: 1-Waveforms	4	2015	4	2015
Development Work: Waveforms: 2-Waveforms	4	2016	4	2016
Development Work: Waveforms: 3 - Waveforms - Target Research & Technical Development (TRTD)	4	2017	4	2017
Development Work: Waveforms: 4- Waveforms - Classified	4	2017	4	2017
Development Work: Waveforms: 5 - Waveforms - Classified	4	2018	4	2018
Development Work: Waveforms: 6 - Waveforms - Classified	4	2019	4	2019
Development Work: Waveforms: 7 - Waveforms - Classified	4	2020	4	2020
Development Work: Unique Access (UA): 1 - Unique Access - Cyber Network Operations (CNO) - Proof of Concept (POC)	2	2015	2	2015
Development Work: Unique Access (UA): 2 - Unique Access - Classified	2	2016	2	2016
Development Work: Unique Access (UA): 3 - Unique Access - Classified	2	2017	2	2017
Development Work: Unique Access (UA): 4 - Unique Access - Classified	2	2018	2	2018

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy			Date: February 2016	
Appropriation/Budget Activity	R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 7	PE 0204575N / <i>Elect Warfare Readiness Supt</i>		2263 / <i>Information Warfare System</i>	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Development Work: Unique Access (UA): 5 - Unique Access	2	2019	3	2019
Development Work: Unique Access (UA): 6 - Unique Access	2	2020	3	2020
Development Work: Unique Access (UA): 7 - Unique Access	2	2021	3	2021
Development Work: Unique Access (UA): Intelligence Analysys & Determination of Vulnerabilities	1	2016	4	2016
Development Work: Unique Access (UA): Infrastructure Develop-MD-1	4	2015	4	2016
Development Work: Unique Access (UA): Lab Develop-MC-2	1	2016	3	2016
Development Work: Unique Access (UA): Systems Spec Refinement - TW	1	2016	4	2016
Development Work: Unique Access (UA): Systems Engineering - TW	3	2016	3	2017
Development Work: Unique Access (UA): Supposrt Systems Engineering - TW	1	2017	3	2017
Development Work: Unique Access (UA): Primary Compound Acquisition and Installation - TW	4	2017	4	2018
Development Work: Unique Access (UA): Secondary Compound Acquisition and Installation - TW	2	2018	2	2019
Development Work: Unique Access (UA): Subsystem Enhancement & Integration - TW	4	2017	2	2018
Development Work: Unique Access (UA): Subsystem Enhancement & Intregation - TW	4	2019	3	2020
TESTING: Prototypes: 1-Prototypes	4	2015	4	2015
TESTING: Prototypes: 2-Prototypes	4	2016	4	2016
TESTING: Prototypes: 3 - Prototypes - Factory Acceptance Testing (FAT), TRTD, CNO Unique Access	4	2017	4	2017
TESTING: Prototypes: 4 - Prototypes - Classified	4	2018	4	2018
TESTING: Prototypes: 5 - Prototypes - Classified	4	2019	4	2019
TESTING: Prototypes: 6 - Prototypes - Classified	4	2020	4	2020
TESTING: Prototypes: 7 - Prototypes - Classified	4	2021	4	2021
TESTING: Maritime Cryptological System (MCS-21) Integration: 1 - MCS-21 Integration Factory Acceptance Testing (FAT), Operational Testing	2	2015	3	2015

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

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
TESTING: Maritime Cryptological System (MCS-21) Integration: 2 - MCS-21 Integration - Classified	2	2016	3	2016
TESTING: Maritime Cryptological System (MCS-21) Integration: 3 - MCS-21 Integration - Classified	2	2017	3	2017
TESTING: Maritime Cryptological System (MCS-21) Integration: 4 - MCS-21 Integration - Classified	2	2018	3	2018
TESTING: Maritime Cryptological System (MCS-21) Integration: 5 - MCS-21 Integration - Classified	2	2019	3	2019
TESTING: Maritime Cryptological System (MCS-21) Integration: 6 - MCS-21 Integration	2	2020	3	2020
DELIVERIES: Information Operations Capabilities (IOC): Information Operations Capabilities (IOC) Modeling & Simulation Lab	4	2015	4	2015
DELIVERIES: Information Operations Capabilities (IOC): 1 - MCS-21 IOC - Spiral Enhancements	4	2016	4	2016
DELIVERIES: Information Operations Capabilities (IOC): 2 - MCS-21 IOC - Classified	4	2017	4	2017
DELIVERIES: Information Operations Capabilities (IOC): 3 - MCS-21 IOC - Classified	4	2018	4	2018
DELIVERIES: Information Operations Capabilities (IOC): 4 - MCS-21 IOC - Classified	4	2019	4	2019
DELIVERIES: Information Operations Capabilities (IOC): 5 - MCS-21 IOC - Classified	4	2020	4	2020
DELIVERIES: Information Operations Capabilities (IOC): 1 - TW - Component Acceptance	2	2017	3	2017
DELIVERIES: Information Operations Capabilities (IOC): 2 - TW - Component Acceptance	3	2018	4	2018
DELIVERIES: Information Operations Capabilities (IOC): 3 - TW Component Acceptance	4	2019	1	2020
DELIVERIES: Information Operations Capabilities (IOC): 1 - TW - Integrated System Evaluation	2	2019	3	2019
DELIVERIES: Information Operations Capabilities (IOC): 2 - TW - Integrated System Evaluation	3	2020	2	2021

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2017 Navy</b>			<b>Date: February 2016</b>	
<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0204575N / <i>Elect Warfare Readiness Supt</i>	<b>Project (Number/Name)</b> 2263 / <i>Information Warfare System</i>		
	<b>Start</b>		<b>End</b>	
<b>Events by Sub Project</b>	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
DELIVERIES: Information Operations Capabilities (IOC): MC - Testing CNO for Model Simulation - 1	4	2016	1	2018
DELIVERIES: Information Operations Capabilities (IOC): MC - Intelligence Analysis of Tech Vulnerables - 2	2	2015	1	2019
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 1-CNO Capabilities - Spiral Enhancements	4	2015	4	2015
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 2-CNO Capabilities - Spiral Enhancements / Full Operational Capability (FOC)	4	2016	4	2016
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 3 -CNO Capabilities - Classified	4	2017	4	2017
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 4 - CNO Capabilities - Classified	4	2018	4	2018
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 5 - CNO Capabilities	4	2019	4	2019
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 6 - CNO Capabilities	4	2021	4	2021
DELIVERIES: Cyber Network Operations (CNO) Capabilities: TW - Function Classified - 1	1	2018	4	2019
DELIVERIES: Cyber Network Operations (CNO) Capabilities: TW - Function Classified - 2	4	2019	2	2020
DELIVERIES: Cyber Network Operations (CNO) Capabilities: TW - Function Classified - 3	4	2020	4	2020
DELIVERIES: Maritime Cryptological System (MSC-21): 6 - CNO Capabilities	4	2020	4	2020
DELIVERIES: Maritime Cryptological System (MSC-21): MCS-21 Product Line - Full Operational Capability (FOC)	1	2015	4	2018

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