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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</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	139.401	24.137	21.667	23.541	-	23.541	23.922	22.143	22.803	23.286	339.460	640.360
0725: <i>Communication Automation</i>	2.332	3.089	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.421
9C87: <i>CANES Integration</i>	137.069	21.048	21.667	23.541	-	23.541	23.922	22.143	22.803	23.286	339.460	634.939

Note
Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. Starting in FY16, funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

A. Mission Description and Budget Item Justification

Consolidated Afloat Networks & Enterprise Services (CANES) is the Navy's only Program of Record (POR) to replace existing afloat networks and provide the necessary infrastructure for applications, systems, and services required for the Navy to dominate the Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks including Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), Sensitive Compartmented Information (SCI) Networks, and Submarine Local Area Network (SubLAN). These legacy afloat network designs are currently End of Life and CANES will replace these unaffordable and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), within which current and future iterations of Navy Tactical Network computing and storage capabilities will reside. CANES will provide complete infrastructure inclusive of hardware, software, processing, storage, and end user devices for Unclassified, Coalition, Secret and SCI for all basic network services (email, web, chat, collaboration) to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, Regional Network Operations and Security Centers (RNOSC) and Aircraft. In addition, hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Integrating these applications and systems is accomplished through Application Integration (AI), the engineering process used to evaluate and validate compatibility between CANES and the Navy-validated applications, systems and services that will utilize the CANES infrastructure and services. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), are dependent on the CANES Common Computing Environment (CCE) to field, host, and sustain their capability because they no longer provide their own hardware. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to the architectural reliance between the two programs.

CANES will develop technical updates on a rolling four year hardware baseline and a two year software baseline to ensure no cybersecurity vulnerabilities exist due to hardware and software obsolescence. CANES is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics, and training efforts into a unified support structure. Platform Sets define phases of CANES system development efforts and each platform set consists of different ship class design baselines.

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</i>
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In FY 2017, CANES RDT&E investment will support additional development for Technical Insertion 2 (TI2) hardware and software baselines including Enterprise Engineering and Certification (E2C) laboratory test efforts. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Continue Development Testing (DT) in support of submarine baseline development. Additional funds provided in FY 2017 to design and engineer the CANES Tactical Data Cloud capability to be included in future CANES hardware and software baselines

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. It includes Automated Digital Network System (ADNS) and High Frequency Internet Protocol/Sub Network Relay.

ADNS is the method by which Tactical Navy units transfer Internet Protocol (IP) data to Navy and Department of Defense communities on the Global Information Grid (GIG). ADNS is the gateway to technical Wide Area Network (WAN) afloat for Internet Protocol network operations, supporting information dissemination and external connectivity. ADNS allows services and applications to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) resources and pier connectivity.

B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	22.773	21.677	22.854	-	22.854
Current President's Budget	24.137	21.667	23.541	-	23.541
Total Adjustments	1.364	-0.010	0.687	-	0.687
• Congressional General Reductions	-	-0.010			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.793	0.000			
• SBIR/STTR Transfer	-0.429	0.000			
• Program Adjustments	0.000	0.000	2.400	-	2.400
• Rate/Misc Adjustments	0.000	0.000	-1.713	-	-1.713

Change Summary Explanation

Technical: N/A

Funding:
N/A

Schedule:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</i>	

Operational commitments for the CANES Force Level Follow-On Test and Evaluation (FOT&E) test platform caused the Force Level DT and Force Level FOT&E test events to be re-phased. Full Deployment has been re-phased to align with program's Full Deployment Decision (FDD), which was updated to accommodate acquisition documentation requirements. Additional funds provided in FY 2017 to design and engineer the CANES Tactical Data Cloud capability to be included in future CANES hardware and software baselines. FDD was achieved in 1QFY16.

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy										Date: February 2016		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)				Project (Number/Name) 0725 / Communication Automation			
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
0725: Communication Automation	2.332	3.089	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.421
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. Starting in FY16, funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

A. Mission Description and Budget Item Justification

This project unit is a continuing program that provides for automation and communications upgrades for Fleet tactical users.

Automated Digital Network System (ADNS) provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting naval, coalition and joint enclaves worldwide. ADNS utilizes off the shelf equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment (INC) II provides capabilities of network to Satellite Communications (SATCOM), load balancing, radio frequency restoral, Quality of Service (QoS) to include application prioritization, traffic management, compression and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS INC III combines all Navy Tactical Voice, Secure Communications Interoperability Protocol (SCIP) Inter-Working Function, Video, and data requirements into a converged IP data stream. ADNS INC III supports higher bandwidth satellites, providing up to 25 mega bytes per second (Mbps) of throughput on Unit Level ships and up to 50 Mbps on Force Level ships. INC III architecture also incorporates an IPv4/IPv6 dual stack and Cipher-Text (CT) security architecture to align to the Global Information Grid (GIG) in order to mesh Navy Tactical surface, subsurface, and airborne platforms into a single IP environments with gateway functions to coalition and joint networks, in addition to greater security utilizing the High Assurance Internet Protocol Encryptor (HAIPE) devices. ADNS will serve as the Navy tactical interface for IP Networking for the JALN-M system. ADNS will investigate emerging technologies to integrate with additional Department of Defense C4I Programs to improve interstrike group networking and extend the network to the tactical edge.

In FY 2017, CANES RDT&E investment will support additional development for Technical Insertion 2 (TI2) hardware and software baselines including Enterprise Engineering and Certification (E2C) laboratory test efforts. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Continue Development Testing (DT) in support of submarine baseline development. Additional funds provided in FY 2017 to design and engineer the CANES Tactical Data Cloud capability to be included in future CANES hardware and software baselines.

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Automated Digital Network System (ADNS)	3.089	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 0725 / Communication Automation

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p><i>FY 2015 Accomplishments:</i> Continued testing and interfaces with ENMS, IPv6 transition, and integration of SHF. Continued the Interface Design Development (IDD) and integration with network applications, developed LOS link, Defense Information Systems Network (DISN) integration and development of Cipher-Text (CT) Piers. Investigated and recommended platform network devices, network design support to include integration with Wide Area Network (WAN) and Joint Aerial Layer Network - Maritime (JALN-M) system.</p> <p><i>FY 2016 Plans:</i> In FY 2016-2021, ADNS funding resides in PE 0204163N (Fleet Tactical Development).</p> <p><i>FY 2017 Base Plans:</i> N/A</p> <p><i>FY 2017 OCO Plans:</i> N/A</p>					
Accomplishments/Planned Programs Subtotals	3.089	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPN/2915: CANES (ADNS Only)	56.626	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	160.060

Remarks

D. Acquisition Strategy
Automated Digital Network System (ADNS): Evolutionary acquisition approach with overlapping development and implementation phases for defined INC I, II, and III baselines. INC I, II, and III will use competitively awarded contracts to implement changes consistent with acquisition initiatives. ADNS leverages Commercial-Off-The-Shelf (COTS) and Government Off-the-Shelf (GOTS) products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decrease contract administrative costs, and encourage acquisition streamlining through the use of COTS/GOTS products.

E. Performance Metrics
ADNS - Included in the ADNS program goals are the improvements to bandwidth throughput, connectivity to multiple Radio Frequency (RF) paths, greater security, and system capability delivered within a smaller form factor. The ADNS program will, at a minimum, provide bandwidth throughput enhancements resulting in an increase from 2 megabytes per

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second (Mbps) to 25/50 Mbps. ADNS will also provide the ability to transport data across multiple paths simultaneously vice the current limitations of single or secondary paths. ADNS will provide greater security posture by encrypting each enclave, increase performance of the routing and transport architecture while reducing physical footprint and cost, and securing the core via Cipher-Text.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 0725 / Communication Automation
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Product Development (\$ in Millions)				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			
Systems Engineering-ADNS	WR	SSC : PAC	0.453	2.034	Oct 2014	0.000		0.000		-		0.000	0.000	2.487	-
Systems Engineering-ADNS	WR	SSC : LANT	0.271	0.582	Nov 2014	0.000		0.000		-		0.000	0.000	0.853	-
Systems Engineering-ADNS	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.000	0.150	Mar 2015	0.000		0.000		-		0.000	0.000	0.150	-
Integration and Test-ADNS	WR	SSC : PAC	1.159	0.000		0.000		0.000		-		0.000	0.000	1.159	-
Integration and Test-ADNS	C/CPFF	Science Applications International Corporation : San Diego, CA	0.000	0.063	Dec 2014	0.000		0.000		-		0.000	0.000	0.063	-
Systems Engineering-ADNS	WR	NUWC : Newport, RI	0.000	0.061	Aug 2015	0.000		0.000		-		0.000	0.000	0.061	-
Subtotal			1.883	2.890		0.000		0.000		-		0.000	0.000	4.773	-

Support (\$ in Millions)				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			
Studies and Design-ADNS	WR	SSC : PAC	0.000	0.049	Dec 2014	0.000		0.000		-		0.000	0.000	0.049	-
Studies and Design-ADNS	C/CPFF	Systems Research and Application : San Diego, CA	0.147	0.150	Jul 2015	0.000		0.000		-		0.000	0.000	0.297	-
Subtotal			0.147	0.199		0.000		0.000		-		0.000	0.000	0.346	-

Test and Evaluation (\$ in Millions)				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			
Operational Test & Evaluation-ADNS	WR	COMOPTEVFOR : Norfolk, VA	0.046	0.000		0.000		0.000		-		0.000	0.000	0.046	-

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 0725 / Communication Automation
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Test and Evaluation (\$ in Millions)				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			
Subtotal			0.046	0.000		0.000		0.000		-		0.000	0.000	0.046	-

Management Services (\$ in Millions)				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			
Program Management Support-ADNS	C/CPFF	Systems Research & Application : San Diego, CA	0.147	0.000		0.000		0.000		-		0.000	0.000	0.147	-
Program Management Support-ADNS	C/CPFF	Science Applications International Corporation : San Diego, CA	0.109	0.000		0.000		0.000		-		0.000	0.000	0.109	-
Subtotal			0.256	0.000		0.000		0.000		-		0.000	0.000	0.256	-

			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.332	3.089	0.000	0.000	-	0.000	0.000	5.421	-

Remarks
Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. Starting in FY16, funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 0725 / Communication Automation
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Fiscal Year	2015				2016				2017				2018				2019				2020				2021			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones						PIR INC III Subs 																						
System Development																												
	Interface Design Development & Integration with Network Applications and DISN																											
	Interface Design Development & Integration with Future SATCOM, JALN-M and Radio Frequency (RF) paths																											
Test & Evaluation Milestones																												
Operational Assessment (OA)																												
Development Test																												
Operational Test																												
Production																												
	Fielding & Sustainment INC III Surface																											
	Fielding & Sustainment INC III Subs																											
Deliveries																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 0725 / Communication Automation

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Fiscal Year				
Acquisition Milestones: ADNS: INCREMENT III_Subs Post Implementation Review	2	2016	2	2016
System Development: ADNS: INCREMENT III_Interface Design Development and Integration with Network Applications and Defense Information Systems Network (DISN)	1	2015	4	2021
System Development: ADNS: INCREMENT III_Interface Design Development and Integration with SATCOM, Joint Aerial Layer Network-Maritime (JALN-M) and Radio Frequency (RF) paths	1	2015	4	2021
Production: ADNS: INCREMENT III_Fielding and Sustainment INC III Surface	1	2015	4	2021
Production: ADNS: INCREMENT III_Fielding and Sustainment INC III Submarines	1	2015	4	2021
Production: ADNS: INCREMENT III_Full Operational Capability	1	2021	1	2021

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</i>	Project (Number/Name) 9C87 / <i>CANES Integration</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
9C87: <i>CANES Integration</i>	137.069	21.048	21.667	23.541	-	23.541	23.922	22.143	22.803	23.286	339.460	634.939
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Consolidated Afloat Networks & Enterprise Services (CANES) is the Navy's only Program of Record (POR) to replace existing afloat networks and provide the necessary infrastructure for applications, systems, and services required for the Navy to dominate the Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks including Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), Sensitive Compartmented Information (SCI) Networks, and Submarine Local Area Network (SubLAN). These legacy afloat network designs are currently End of Life and CANES will replace these unaffordable and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), within which current and future iterations of Navy Tactical Network computing and storage capabilities will reside. CANES will provide complete infrastructure, inclusive of hardware, software, processing, storage, and end user devices for Unclassified, Coalition, Secret and SCI for all basic network services to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, Regional Network Operations and Security Centers (RNOSC) and Aircraft. In addition, hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Integrating these applications and systems is accomplished through Application Integration (AI), the engineering process used to evaluate and validate compatibility between CANES and the Navy-validated applications, systems and services that will utilize the CANES infrastructure and services. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), are dependent on the CANES Common Computing Environment (CCE) to field, host, and sustain their capability because they no longer provide their own hardware. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to the architectural reliance between the two programs.

CANES will develop technical updates on a rolling four year hardware baseline and a two year software baseline to ensure no cybersecurity vulnerabilities exist due to hardware and software obsolescence. CANES is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics, and training efforts into a unified support structure. Platform Sets define phases of CANES system development efforts and each platform set consists of different ship class design baselines.

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: CANES Integration	21.048	21.667	23.541	0.000	23.541
Articles:	-	-	-	-	-

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

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<p><i>FY 2015 Accomplishments:</i> Continued development of Technical Insertion (TI) software baselines. Completed Platform Sets 3 & 4 baseline development. Performed systems engineering efforts to complete functional baselines and updates to technical data packages. Continued testing events at Enterprise Engineering and Certification (E2C) laboratory for TI software baseline and Platform Set 3 & 4. Performed Developmental Testing (DT) and initiated Follow-on Operational Test & Evaluation (FOT&E) in support of force level testing. Conducted CANES Hyper Converged Infrastructure Innovation Pilot (CHIIP) requirement definitization.</p> <p><i>FY 2016 Plans:</i> Achieved Full Deployment Decision (FDD). Complete TI software baseline development and initiate development for TI 2 hardware and software baseline including E2C laboratory test efforts. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Complete FOT&E in support of force level testing.</p> <p><i>FY 2017 Base Plans:</i> Perform TI 2 hardware and software baseline testing, including E2C laboratory test efforts. Perform systems engineering efforts to complete functional baselines, to include incorporation of CANES Tactical Data Cloud capability, and update technical data packages. Perform DT in support of submarine baseline development. Initiate FOT&E in support of submarine testing. Perform DT Assist for TI 2 hardware and software development.</p> <p><i>FY 2017 OCO Plans:</i> N/A</p>					
Accomplishments/Planned Programs Subtotals	21.048	21.667	23.541	0.000	23.541

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

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPN/2915: <i>CANES</i>	355.046	275.641	212.030	-	212.030	349.727	417.519	395.807	346.850	4,203.681	7,270.255
• OPN/2925: <i>CANES Intell</i>	61.215	28.695	36.013	-	36.013	47.602	58.957	56.255	48.791	684.320	1,215.665

Remarks

D. Acquisition Strategy

CANES is an ACAT IAC Major Automated Information System (MAIS) program. The program office is employing a multiple-phase, multiple-award down-select contract strategy to reduce program risks and maintain competition in both design development and production during contract performance. Milestone C was achieved in

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Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
1319 / 7	PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	9C87 / CANES Integration

1QFY13 and Full Deployment Decision (FDD) was achieved in 1QFY16. In 2QFY15, a separate full and open indefinite delivery indefinite quantity (IDIQ) multiple award contract (MAC) production contract was awarded to support future production. CANES will develop technical updates on a rolling four year hardware baseline and a two year software baseline to ensure no cybersecurity vulnerabilities exist due to hardware and software obsolescence.

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase reduced Total Ownership Cost (TOC) from Milestone B to Milestone C. Cost avoidance throughout the life of the program is based on 1) reducing the number of networks through the use of mature, certified, cross domain technologies; 2) reducing the infrastructure footprint and associated costs for hardware afloat; and 3) providing increased capability to meet current and projected war fighter requirements.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 9C87 / CANES Integration
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Product Development	Various	Various : Various	52.910	0.000		0.000		0.000		-		0.000	0.000	52.910	22.329
Primary Hardware Development	WR	SSC : San Diego, CA and Charleston, SC	27.248	11.314	Nov 2014	6.814	Nov 2015	7.411	Nov 2016	-		7.411	192.514	245.301	209.438
Primary Hardware Development	C/CPFF	AUSGAR : San Diego, CA	0.000	0.182	Mar 2015	0.240	Mar 2016	0.261	Dec 2016	-		0.261	0.000	0.683	-
Primary Hardware Development	C/CPFF	ImagineOne : Colonial Beach, VA	0.000	0.432	Feb 2015	1.186	Dec 2015	0.380	Dec 2016	-		0.380	0.000	1.998	-
Primary Hardware Development	C/CPFF	NSMA : Washington DC	0.000	0.000		0.660	Apr 2016	0.717	Feb 2017	-		0.717	0.000	1.377	-
Primary Software Development	WR	SSC : San Diego, CA and Charleston, SC	15.253	5.094	Nov 2014	7.113	Nov 2015	7.723	Nov 2016	-		7.723	52.439	87.622	48.574
Primary Software Development	C/CPFF	Carahsoft : Reston, VA	0.000	0.000		0.193	Mar 2016	0.210	Apr 2017	-		0.210	0.000	0.403	-
Systems Engineering	C/CPFF	BAH : San Diego, CA	0.690	0.703	Mar 2015	0.220	Feb 2016	0.239	Jan 2017	-		0.239	0.000	1.852	0.690
Systems Engineering	C/CPFF	SAIC : San Diego, CA	0.000	0.277	Sep 2015	0.169	Mar 2016	0.184	Jan 2017	-		0.184	0.000	0.630	-
Systems Engineering	WR	SSC : San Diego, CA and Charleston, SC	22.630	0.000		2.901	Nov 2015	3.558	Nov 2016	-		3.558	45.743	74.832	50.798
Systems Engineering	MIPR	US ARMY CECOM (MITRE) : San Diego, CA	2.198	0.024	Jul 2015	0.000		0.500	Nov 2016	-		0.500	5.722	8.444	19.934
Systems Engineering	C/CPFF	CSA : San Diego, CA	0.000	0.165	Dec 2014	0.556	Feb 2016	0.604	Feb 2017	-		0.604	0.000	1.325	-
Subtotal			120.929	18.191		20.052		21.787		-		21.787	296.418	477.377	-

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Design	MIPR	Washington HQ Services : Washington DC	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	0.650

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 9C87 / CANES Integration
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Support (\$ in Millions)				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			
Studies & Design	WR	SSC : San Diego, CA	0.000	0.388	Feb 2015	0.218	Mar 2016	0.237	Nov 2016	-		0.237	0.000	0.843	-
Studies and Design	C/CPFF	SRA : San Diego, CA	0.000	0.000		0.117	Mar 2016	0.127	Jan 2017	-		0.127	0.000	0.244	-
Certification Authority	C/CPFF	AUSGAR : San Diego, CA	0.527	0.773	Mar 2015	0.349	Mar 2016	0.379	Mar 2017	-		0.379	10.987	13.015	-
Certification Authority	C/CPFF	NSMA : Washington, DC	0.000	0.370	Jun 2015	0.000		0.000		-		0.000	0.000	0.370	-
Certification Authority	C/CPFF	Innovative Defense Technologies : Arlington, VA	0.000	0.167	Jul 2015	0.000		0.000		-		0.000	0.000	0.167	-
Subtotal			1.177	1.698		0.684		0.743		-		0.743	10.987	15.289	-

Test and Evaluation (\$ in Millions)				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			
Operational Test & Evaluation	WR	COTF : Norfolk, VA	1.360	0.704	Mar 2015	0.440	Mar 2016	0.478	Mar 2017	-		0.478	8.510	11.492	5.891
Development Test & Evaluation	C/CPFF	SSC : San Diego, CA	0.201	0.205	Dec 2014	0.241	Nov 2015	0.262	Nov 2016	-		0.262	3.967	4.876	-
Development Test & Evaluation	MIPR	JITC : Fairfax, VA	1.118	0.250	Nov 2014	0.250	Nov 2015	0.271	Nov 2016	-		0.271	4.015	5.904	4.673
Development Test & Evaluation	MIPR	DTIC : Ft Belvoir, VA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
Subtotal			2.779	1.159		0.931		1.011		-		1.011	16.492	22.372	-

Management Services (\$ in Millions)				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			
Prior Year Management Services	Various	Various : Various	11.980	0.000		0.000		0.000		-		0.000	0.000	11.980	2.742

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 9C87 / CANES Integration
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Fiscal Year	2015				2016				2017				2018				2019				2020				2021							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones				FDD ▲																												
Engineering and Manufacturing Development	CANES DEV Platforms 1, 2, 3 & 4																															
	TI - SW Dev				TI 2 - HW/SW Dev				TI 3 - SW Dev				TI 4 - HW/SW Dev																			
Test & Evaluation Milestones	Platform		TI DTA							TI2 DTA							TI3 DTA															
Developmental Test			Force Level							Subs																						
Operational Test	Unit Level	DT								DT																						
		IOT&E		FOT&E								FOT&E																				
Production Milestones																																
Limited Deployment (LD)	CANES LD																															
Full Deployment (FD)					CANES FD																											
Deliveries					LD				FD																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 9C87 / CANES Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Fiscal Year				
Acquisition Milestone: Acquisition Milestone - Full Deployment Decision Review (FDD)	1	2016	1	2016
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - Platform Set 1, 2, 3 & 4	1	2015	4	2015
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - Technical Insertion (TI) Software (SW) Development	1	2015	1	2016
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - TI 2 Hardware (HW)/SW Development	2	2016	1	2018
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - TI 3 SW Development	2	2018	1	2020
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - TI 4 Hardware (HW)/SW Development	2	2020	4	2021
Test & Evaluation Milestone: Development Test: Developmental Test - Force Level	3	2015	3	2015
Test & Evaluation Milestone: Development Test: Developmental Test - Sub	2	2017	3	2017
Test & Evaluation Milestone: Development Test: Development Test Assist - TI	3	2015	3	2015
Test & Evaluation Milestone: Development Test: Development Test Assist- TI 2	3	2017	3	2017
Test & Evaluation Milestone: Development Test: Development Test Assist- TI 3	3	2019	3	2019
Test & Evaluation Milestone: Operational Test: Operational Test - Initial Operational Test & Evaluation (IOT&E)	1	2015	3	2015
Test & Evaluation Milestone: Operational Test: Operational Test Force Level - Follow-on Operational Test & Evaluation (FOT&E)	4	2015	2	2016
Test & Evaluation Milestone: Operational Test: Operational Test - FOT&E Sub	3	2017	1	2018
Production Milestone: Limited Deployment: Production Milestone - Limited Deployment (LD)	1	2015	3	2016

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / Consolidated Afloat Network Ent Services(CANES)	Project (Number/Name) 9C87 / CANES Integration
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestone: Full Deployment: Production Milestone - Full Deployment (FD)	3	2015	4	2021
Deliveries: Deliveries - Limited Deployment (LD)	1	2015	3	2016
Deliveries: Deliveries - Full Deployment (FD)	3	2016	4	2021

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