Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*					R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*							
COST ($ in Millions)	**All Prior Years**	**FY 2012**	**FY 2013#**	**FY 2014 Base**	**FY 2014 OCO ##**	**FY 2014 Total**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**Cost To Complete**	**Total Cost**
Total Program Element	87.740	24.039	16.749	24.476	-	24.476	22.710	23.227	23.525	23.962	Continuing	Continuing
0725: *Communication Automation*	0.000	0.000	1.334	1.002	-	1.002	1.017	0.996	1.018	1.035	Continuing	Continuing
9999: *Congressional Adds*	0.000	12.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.000
9C87: *CANES Integration*	87.740	12.039	15.415	23.474	-	23.474	21.693	22.231	22.507	22.927	256.828	484.854

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

Note

CANES Military Intelligence Program (MIP) related funding under PE 0303238N investment ended in FY 2012. MIP requirements transitioned to PE 0303138N beginning in FY 2013.

Project 0725 Communication Automation Automated Digital Network System (ADNS) funding was realigned from PE 0204163N to CANES PE 0303138N FY13 and out.

Project 9999 Congressional Adds realigned from CANES FY12 OPN LI 2915.

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 NAVY to dominate the Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks currently under PE 0204163N (LI 3050) Ship Communications Automation, 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 existing, unaffordable, and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure and Platform as a Service (IaaS / PaaS), within which current and future iterations of Tasking, Collection, Processing, Exploitation and Dissemination (TCPED) 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, and aircraft. In addition, approximately 36 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*

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 ADNS field prior to or concurrently with CANES due to architectural reliance between the two programs.

CANES will develop updates on a rolling four year hardware baseline and a two year software baseline. CANES is based on the overarching concept of reducing the number of afloat network baselines and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting 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 1, 2, 3, and 4 define phases of CANES system development efforts. Each platform set consists of a different ship class design baseline.

In FY 2014, CANES RDT&E investment will support the developmental efforts for Technical Insertion (TI) software baselines. Perform system engineering efforts to complete functional baselines and updates to technical data packages. Continue testing events at Enterprise Engineering and Certification (E2C) lab on Platform Sets 2, 3, and 4 and on the TI software baseline. Complete Initial Operational Test and Evaluation on unit level platforms. Perform Developmental Testing (DT) on force level baseline in support of Follow-On Test and Evaluation (FOT&E). Continue hosted system integration testing and Application Integration (AI). Achieve Full Deployment Decision (FDD).

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 serves as a gateway to enable joint and coalition interoperability for these tactical assets and ensures GIG connectivity. ADNS allows unclassified, secret, top secret traffic, and various joint, allied, and coalition services to reconnect to the Defense Information Systems Network ashore via radio paths and pier connectivity.

FY14 funds will be used for ADNS interface design development, integration for network application and Radio Frequency (RF) paths.

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*

B. Program Change Summary ($ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	24.855	16.749	15.852	-	15.852
Current President's Budget	24.039	16.749	24.476	-	24.476
Total Adjustments	-0.816	0.000	8.624	-	8.624
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.027	0.000			
• SBIR/STTR Transfer	-0.789	0.000			
• Program Adjustments	0.000	0.000	3.112	-	3.112
• Rate/Misc Adjustments	0.000	0.000	5.512	-	5.512

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2012	FY 2013
Project: 9999: *Congressional Adds*		
Congressional Add: *CANES (Cong)*	12.000	-
Congressional Add Subtotals for Project: 9999	12.000	0.000
Congressional Add Totals for all Projects	12.000	0.000

Change Summary Explanation

Technical: N/A

Funding:
CANES Military Intelligence Program (MIP) related funding under PE 0303238N investment ended in FY 2012. MIP requirements transitioned to PE 0303138N beginning in FY 2013.

FY 2014 $3.2M investment for LPD-17 platform development for inclusion in CANES Platform Set 4 baseline.

FY 2014 - 2018 $41.4M Risk based ajdustment based on prior year actual expenditures for follow on development.

Communication Automation Automated Digital Network System (ADNS) Project 0725 was realigned from Program Element 0204163N to 0303138N in FY13 and out due to architectural reliance with CANES.

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*

Schedule:
CANES down-select occurred on 1 February 2012 and an ensuing 23-day protest period caused the following efforts to be rephased: CANES Milestone C (MS C), Initial Operational Capability (IOC), Full Deployment Decision (FDD), Operational Assessment (OA), Unit Level Developmental Test (DT) and Initial Operational Test and Evaluation (IOT&E), Force Level DT and Follow-on Test and Evaluation (FOT&E), Full Deployment (FD) contract award, and Limited Deployment (LD) deliveries.

The ADNS INC III Submarine Operational Testing (OT) have been updated to reflect the correct milestone from 4QFY12 to 1QFY13.

The ADNS program will continue System Development efforts for interface design development and integration with network applications, future SATCOM and Radio Frequency (RF) paths. Production efforts will include fielding and sustaining INC II and III systems.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 0725: *Communication Automation*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
0725: *Communication Automation*	0.000	0.000	1.334	1.002	-	1.002	1.017	0.996	1.018	1.035	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

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 load balancing, radio frequency restoral, initial quality of service to include application prioritization, initial traffic management, and enhancements designed to maximize use of available bandwidth for surface, shore, and airborne platforms. ADNS INC III converges all Navy tactical voice, video, and data requirements into a converged IP data stream. ADNS INC III interoperates with higher bandwidth satellites, supporting 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 a cipher text security architecture to align to joint and coalition networks, in addition to greater security utilizing the High Assurance Internet Protocol (IP) Encryptor (HAIPE) devices. ADNS INC III serves as the Navy tactical interface for IP Networking with Joint Tactical Radio System, and Advanced Extremely High Frequency to include Consolidated Afloat Networks and Enterprise Services (CANES). 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.

FY14 funds will be used for ADNS interface design development, integration for network application and Radio Frequency (RF) paths.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Automated Digital Network System	0.000	1.334	1.002
Articles:		0	0
FY 2013 Plans: Continue the development of updated system and subsystem interface designs for integration with new SATCOM and RF paths as they emerge. Test and integrate the evolving network applications as they are incorporated into the C4I architecture; actions will include examining and testing interfaces with Enterprise Network Management System, transition to IPv6, and final phase out of serial links. Integration of Super High Frequency (SHF) Split IP. Interface testing for emerging Line of Sight (LOS) links.			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 0725: *Communication Automation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Complete Video and Voice Over Secure Internet Protocol (VVoSIP) integration into the ADNS boundary. Complete Operational Testing on ADNS INC III Submarines. ***FY 2014 Plans:*** Continue testing interfaces with Enterprise Network Management System, transition to IPv6, and final phase out of serial links. Integration of Super High Frequency (SHF) Split IP. Interface testing for emerging Line of Sight (LOS) links.			
Accomplishments/Planned Programs Subtotals	0.000	1.334	1.002

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPN/2915: *CANES (ADNS Only)*	0.000	60.151	52.098		52.098	45.034	43.774	41.445	43.241	0.000	285.743
• OPN/3050: *Ship Comm Auto (ADNS Only)*	49.413	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	83.105

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
second (Mbps) to 25 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, and securing the core via cipher text.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 0725: *Communication Automation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering-ADNS	WR	SSC:PAC	0.000	0.000		0.220	Nov 2012	0.144	Nov 2013	-		0.144	Continuing	Continuing	Continuing
Integration and Test-ADNS	WR	SSC:PAC	0.000	0.000		0.788	Apr 2013	0.621	Dec 2013	-		0.621	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		1.008		0.765		0.000		0.765			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Dev Support-ADNS	WR	SSC:LANT	0.000	0.000		0.011	Apr 2013	0.007	Dec 2013	-		0.007	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.011		0.007		0.000		0.007			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation-ADNS	WR	COMOPTEVFOR:Norfolk, VA	0.000	0.000		0.132	Apr 2013	0.091	Nov 2013	-		0.091	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.132		0.091		0.000		0.091			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	TBD:TBD	0.000	0.000		0.183	Oct 2012	0.139	Oct 2013	-		0.139	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.183		0.139		0.000		0.139			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 0725: *Communication Automation*	

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		1.334		1.002		0.000		1.002			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 0725: *Communication Automation*

EXHIBIT R4, Schedule Profile

DATE: March 2013

PROJECT NUMBER AND NAME
0725 COMMUNICATIONS AUTOMATION - ADNS

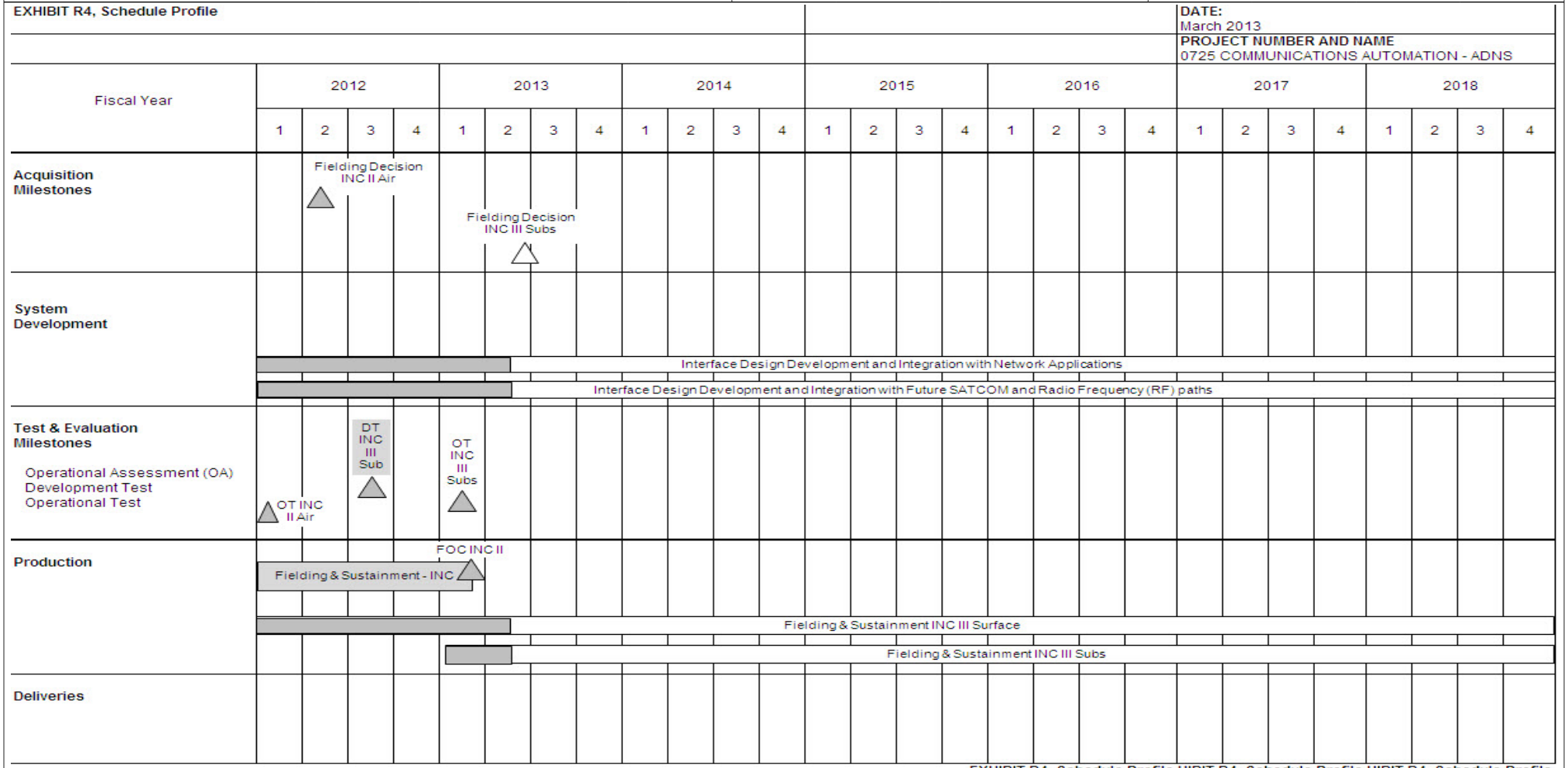

EXHIBIT R4, Schedule Profile HIBIT R4, Schedule Profile HIBIT R4, Schedule Profile

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 0725: *Communication Automation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0725				
ADNS: INCREMENT II_Airborne Fielding Decision	2	2012	2	2012
ADNS: INCREMENT III_Subs Fielding Decision	2	2013	2	2013
ADNS: INCREMENT III_Interface Design Development with Network Applications	1	2012	4	2018
ADNS: INCREMENT III_Interface Design Development with SATCOM and Radio Frequency (RF) paths	1	2012	4	2018
ADNS: INCREMENT II_Airborne Operational Testing (OT)	1	2012	1	2012
ADNS: INCREMENT III_Subs Developmental Testing (DT)	3	2012	3	2012
ADNS: Increment III_Subs Operational Testing (OT)	1	2013	1	2013
ADNS: INCREMENT IIa_Fielding and Sustainment (Inc II/IIa/IIb) Airborne	1	2012	1	2013
ADNS: INCREMENT II_Full Operational Capability	1	2013	1	2013
ADNS: INCREMENT III_Fielding and Sustainment Inc III Surface	1	2012	4	2018
ADNS: INCREMENT III_Subs Fielding and Sustainment	1	2013	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9999: *Congressional Adds*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	12.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.000
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

Note

Important to note that activities occurring in Project 9C87 are the same as Project 9999. Funds in Project 9999 are from a Navy request to Congress to transfer funding from CANES PE 0303138N LI 2915 to PE 0303138N Project 9C87 to fund Engineering and Manufacturing Development (EMD) efforts that shifted to FY12. In addition, the RDT&E will fund Operational Assessment efforts.

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 Navy to dominate the Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks currently under PE 0204163N (LI 3050) Ship Communications Automation, 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 existing, unaffordable, and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure and Platform as a Service (IaaS / PaaS), within which current and future iterations of Tasking, Collection, Processing, Exploitation and Dissemination (TCPED) 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, and Aircraft. In addition, approximately 36 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 ADNS field prior to or concurrently with CANES due to architectural reliance between the two programs.

CANES will develop updates on a rolling four year hardware baseline and a two year software baseline. CANES is based on the overarching concept of reducing the number of afloat network baselines and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9999: *Congressional Adds*

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 1, 2 ,3, and 4 define phases of CANES system development efforts. Each platform set consists of a different ship class design baseline.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013
Congressional Add: CANES (Cong)	12.000	-
FY 2012 Accomplishments: Completed development of statutory and regulatory acquisition documentation in support of CANES Milestone C (MS C). Revised Cost Analysis Requirements Description (CARD) and Life Cycle Cost Estimate (LCCE) in support of Navy's Service Cost Position (SCP) for MS C. Conducted Developmental Test (DT) and Operational Assessment (OA) in support of MS C. Continued hosted system integration testing and Application Integration (AI) as they migrate to CANES baseline. Prepared Enterprise Engineering and Certification (E2C) lab for testing on Platform Sets 1 & 2 baselines and purchased necessary lab assets and test articles in support of testing events. Continued baseline development on Platform Sets 1 & 2 and began baseline development on Platform Sets 3 & 4. Completed down-selection process from two competing developers to one. Performed systems engineering efforts to complete functional baselines and updates to technical data packages.		
Congressional Adds Subtotals	12.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

CANES is an ACAT IAM MAIS program. Formal program initiation occurred at Milestone B (2QFY11). The program office is employing a multiple-phase, multiple-award down-select contracting strategy to reduce program risks and maintain competition in both design development and production during contract performance. Two competitive contracts were awarded to design, develop, and deliver all hardware and the associated operating system, virtualization and other commercial software needed to deliver a functional network. The Limited Deployment (LD) contract was awarded to Northrop Grumman (NG) on February 1, 2012. Milestone C occurred in 1QFY13. In 1QFY14, a separate full and open production contract will be awarded for Full Deployment (FD).

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase saved 44% of Total Ownership Cost (TOC) over the life cycle of the program. Cost avoidance throughout the life of the program is based on performance gains that are measured (not quantified) by 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 warfighter requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9999: *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/CPFF	Northrup Grumman:Herndon, VA	0.000	11.109	Feb 2012	0.000		0.000		-		0.000	0.000	11.109	
Systems Engineering	WR	SPAWAR Systems Center:San Diego, CA	0.000	0.754	Feb 2012	0.000		0.000		-		0.000	0.000	0.754	
		Subtotal	0.000	11.863		0.000		0.000		0.000		0.000	0.000	11.863	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA	0.000	0.047	Feb 2012	0.000		0.000		-		0.000	0.000	0.047	
		Subtotal	0.000	0.047		0.000		0.000		0.000		0.000	0.000	0.047	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management & Acquisition Support	C/CPFF	Booz Allen Hamilton:San Diego, CA	0.000	0.090	Feb 2012	0.000		0.000		-		0.000	0.000	0.090	
		Subtotal	0.000	0.090		0.000		0.000		0.000		0.000	0.000	0.090	

	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	12.000		0.000		0.000		0.000		0.000	0.000	12.000	

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
9C87: *CANES Integration*	87.740	12.039	15.415	23.474	-	23.474	21.693	22.231	22.507	22.927	256.828	484.854
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

Note

CANES Military Intelligence Program (MIP) related funding under PE 0303238N investment ended in FY 2012. MIP requirements transitioned to PE 0303138N beginning in FY 2013.

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 NAVY to dominate Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks currently under PE 0204163N (LI 3050) Ship Communications Automation, 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 existing, unaffordable, and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure and Platform as a Service (IaaS / PaaS), within which current and future iterations of Tasking, Collection, Processing, Exploitation and Dissemination (TCPED) 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, and Aircraft. In addition, approximately 36 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 ADNS field prior to or concurrently with CANES due to architectural reliance between the two programs.

CANES will develop updates on a rolling four year hardware baseline and a two year software baseline. 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,

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*

and training efforts into a unified support structure. Platform sets 1, 2, 3, and 4 define phases of CANES system development efforts. Each platform set consists of a different ship class design baseline.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: CANES Integration	12.039	15.415	23.474
Articles:	0	0	0
FY 2012 Accomplishments: Completed development of statutory and regulatory acquisition documentation in support of CANES Milestone C (MS C). Revised Cost Analysis Requirements Description (CARD) and Life Cycle Cost Estimate (LCCE) in support of Navy's Service Cost Position (SCP) for MS C. Conducted Developmental Test (DT) and Operational Assessment (OA) in support of MS C. Continued hosted system integration testing and Application Integration (AI) as they migrate to CANES baseline. Prepared Enterprise Engineering and Certification (E2C) lab for testing on Platform Sets 1 & 2 baselines and purchased development on Platform Sets 3 & 4. Completed down-select process from two competing developers to one. Performed systems engineering efforts to complete functional baselines and updates to technical data packages.			
FY 2013 Plans: Complete Platform Sets 1, 2, 3 and 4 baseline development. Perform DT and Initial Operational Test and Evaluation (IOT&E) in support of Full Deployment Decision (FDD) in 1QFY14 on unit level platforms. Continue testing events at E2C lab on Platform Sets 1, 2, 3, 4 and on TI software baseline, and purchase necessary lab assets and test articles in support of testing events. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Continue hosted system integration testing and Application Integration (AI). Complete Operational Assessment (OA). Milestone C achieved 1QFY13.			
FY 2014 Plans: Initiate development for Technical Insertion (TI) software baselines. Perform system engineering efforts to complete functional baselines and updates to technical data packages. Continue testing events at E2C lab on Platform Sets 2, 3 & 4 and purchase necessary lab assets and test articles in support of testing events. Complete IOT&E on unit level platforms. Perform Developmental Testing (DT) on force level baseline in support of Follow On Test and Evaluation (FOT&E). Continue hosted system integration testing and AI. Achieve Full Deployment Decision (FDD).			
Accomplishments/Planned Programs Subtotals	12.039	15.415	23.474

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPN/2915: *CANES*	78.239	281.247	288.469		288.469	308.308	330.315	345.964	341.294	4,574.868	6,560.089
• OPN/2925: *CANES Intell*	73.363	79.427	59.652		59.652	65.329	33.983	56.755	49.707	1,012.331	1,433.670

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• RDTE/09C87: *CANES MIP*	6.602	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	15.936
• RDTE/9C87C: *CANES (Cong)*	12.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	12.000

Remarks

D. Acquisition Strategy

CANES is an ACAT IAM MAIS program. Formal program initiation occurred at MS B (2QFY11). 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. Two competitive contracts were awarded to design, develop, and deliver all hardware and the associated operating system, virtualization and other commercial software needed to deliver a functional network. The Limited Deployment (LD) contract was awarded to Northrop Grumman (NG) on February 1, 2012. Milestone C achieved in 1QFY13. In 1QFY14, a separate full and open production contract will be awarded for Full Deployment (FD).

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase saved 44% of Total Ownership Cost (TOC) over the life cycle of the program. Cost avoidance throughout the life of the program is based on performance gains that are measured (not quantified) by 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 warfighter requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Lockheed Martin:San Diego, CA	20.962	1.367	Nov 2011	0.000		0.000		-		0.000	0.000	22.329	22.329
Primary Hardware Development	C/CPFF	Northrop Grumman:Herndon, VA	23.644	2.223	Nov 2011	7.428	Nov 2012	0.000		-		0.000	0.000	33.295	33.295
Primary Hardware Development	WR	SPAWAR Systems Center:San Diego, CA	9.703	2.681	Dec 2011	2.887	Nov 2012	17.533	Nov 2013	-		17.533	171.871	204.675	204.675
Primary Software Development	WR	SPAWAR Systems Center:San Diego, CA	6.468	1.576	Oct 2011	1.545	Dec 2012	1.800	Dec 2013	-		1.800	25.740	37.129	37.129
Systems Engineering	WR	SPAWAR Systems Center:San Diego, CA and Charleston, SC	13.986	2.189	Oct 2011	1.738	Nov 2012	2.025	Nov 2013	-		2.025	28.950	48.888	48.888
Systems Engineering	MIPR	US ARMY CECOM (MITRE):San Diego, CA	0.891	0.589	Oct 2011	0.851	Nov 2012	0.991	Nov 2013	-		0.991	14.176	17.498	17.498
Systems Engineering	C/CPFF	BAH:San Diego, CA	0.000	0.690	Nov 2011	0.000		0.000		-		0.000	0.000	0.690	0.690
		Subtotal	75.654	11.315		14.449		22.349		0.000		22.349	240.737	364.504	364.504

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total 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
		Subtotal	0.650	0.000		0.000		0.000		0.000		0.000	0.000	0.650	0.650

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	MIPR	JITC:Fairfax, VA	0.333	0.410	Oct 2011	0.196	Nov 2012	0.196	Nov 2013	-		0.196	3.265	4.400	4.400
Operational Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA and Washington, DC	0.507	0.210	Feb 2012	0.252	Nov 2012	0.326	Nov 2013	-		0.326	4.197	5.492	5.492
		Subtotal	0.840	0.620		0.448		0.522		0.000		0.522	7.462	9.892	9.892

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	SPAWAR Systems Center:San Diego, CA and Charleston, SC	2.742	0.000		0.000		0.000		-		0.000	0.000	2.742	2.742
Program Management & Acquisition Support	C/CPFF	Systems Research & Application:San Diego, CA	3.969	0.104	Oct 2011	0.518	Dec 2012	0.603	Dec 2013	-		0.603	8.629	13.823	13.823
Financial Management Support	C/CPFF	INDUS Technology:San Diego, CA	1.167	0.000		0.000		0.000		-		0.000	0.000	1.167	1.167
Cost Estimation and Analyses	C/CPFF	Booz Allen Hamilton:San Diego, CA	1.420	0.000		0.000		0.000		-		0.000	0.000	1.420	1.420
Logistics Support	C/CPFF	TCI:San Diego, CA	1.298	0.000		0.000		0.000		-		0.000	0.000	1.298	1.298
		Subtotal	10.596	0.104		0.518		0.603		0.000		0.603	8.629	20.450	20.450

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	87.740	12.039		15.415		23.474		0.000		23.474	256.828	395.496	395.496

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	**PROJECT** 9C87: *CANES Integration*

CLASSIFICATION:

EXHIBIT R4, RDT&E Schedule Profile — DATE: March 2013

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303138N - Consolidated Afloat Networks & Enterprise Services (CANES)	9C87 - CANES Integration

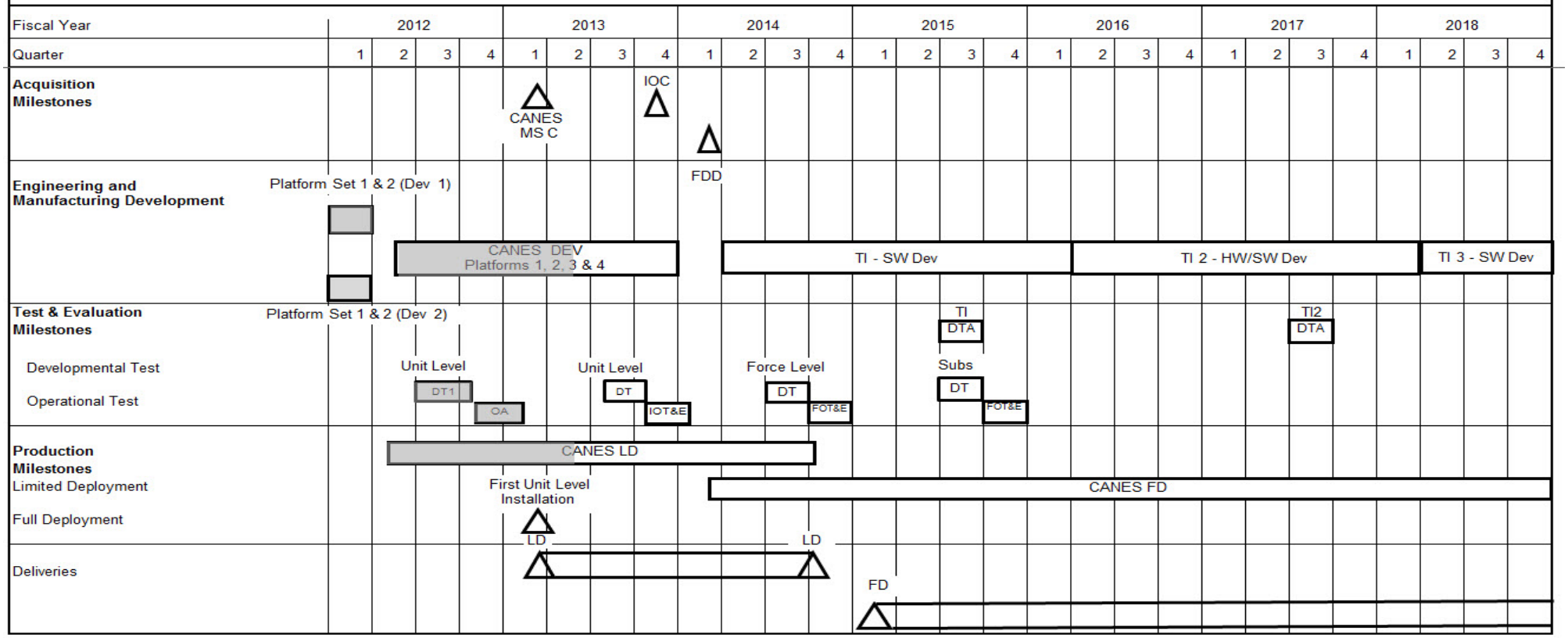

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9C87				
Acquisition Milestone - CANES MS C	1	2013	1	2013
Acquisition Milestone - Initial Operational Capability (IOC)	4	2013	4	2013
Acquisition Milestone - Full Deployment Decision Review (FDD)	1	2014	1	2014
Engineering and Manufacturing Development - Platform Set 1 & 2 (Dev 1)	1	2012	1	2012
Engineering and Manufacturing Development - Platform Set 1 & 2(Dev 2)	1	2012	1	2012
Engineering and Manufacturing Development - Platform Set 1, 2, 3 & 4	2	2012	4	2013
Engineering and Manufacturing Development - Technical Insertion (TI) Software Development	2	2014	1	2016
Engineering and Manufacturing Development - TI 2 Hardware (HW)/SW Development	2	2016	1	2018
Engineering and Manufacturing Development - TI 3 SW Development	2	2018	4	2018
Developmental Test (1) - Unit Level	3	2012	4	2012
Operational Test - Operational Assessment (OA)	4	2012	1	2013
Developmental Test (2) - Unit Level	3	2013	4	2013
Operational Test - Initial Operational Test & Evaluation (IOT&E)	4	2013	1	2014
Developmental Test - Force Level	3	2014	3	2014
Operational Test Force Level - FOT&E	4	2014	4	2014
Developmental Test - Sub	3	2015	3	2015
Operational Test - FOT&E Sub	4	2015	4	2015
Development Test Assist - TI	3	2015	3	2015
Development Test Assist- TI2	3	2017	3	2017
Production Milestone - Limited Deployment (LD)	2	2012	4	2013

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303138N: *Consolidated Afloat Network Ent Services(CANES)*	PROJECT 9C87: *CANES Integration*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestone - Full Deployment (FD)	1	2014	4	2018
Deliveries - Limited Deployment (LD)	1	2013	4	2014
Deliveries - Full Deployment (FD)	1	2015	4	2018