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

| <b>Appropriation/Budget Activity</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 7: Operational Systems Development</i> |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</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> |
| 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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| Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                    |         | Date: February 2016 |             |               |
| Appropriation/Budget Activity<br>1319: Research, Development, Test & Evaluation, Navy I BA 7: Operational Systems Development                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | R-1 Program Element (Number/Name)<br>PE 0303138N I Consolidated Afloat Network Ent Services(CANES) |         |                     |             |               |
| 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<br>1319: Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development                                                                                                                                                                                                                                                                                                                                                                                                                           | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network Ent Services(CANES) |                     |
| 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<br>1319 / 7               |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |                  |         |         | Project (Number/Name)<br>0725 / Communication Automation |                     |                     |               |
| COST (\$ in Millions)                                   | Prior<br>Years | FY 2015 | FY 2016 | FY 2017<br>Base | FY 2017<br>OCO                                                                                        | FY 2017<br>Total | FY 2018 | FY 2019 | FY 2020                                                  | FY 2021             | Cost To<br>Complete | Total<br>Cost |
| 0725: Communication<br>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 (HAPE) 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)**

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

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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><br>1319 / 7                   |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0303138N / Consolidated Afloat Network Ent Services(CANES) |  | <b>Project (Number/Name)</b><br>0725 / Communication Automation |  |

  

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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><b><i>FY 2015 Accomplishments:</i></b><br/>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><b><i>FY 2016 Plans:</i></b><br/>In FY 2016-2021, ADNS funding resides in PE 0204163N (Fleet Tactical Development).</p> <p><b><i>FY 2017 Base Plans:</i></b><br/>N/A</p> <p><b><i>FY 2017 OCO Plans:</i></b><br/>N/A</p> |                |                |                     |                    |                      |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3.089          | 0.000          | 0.000               | 0.000              | 0.000                |

  

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| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |                     |                    |                      |                |                |                |                |                         |                   |
| <b>Line Item</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> |
| • 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           |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                     |                    |                      |                |                |                |                |                         |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                     |                    |                      |                |                |                |                |                         |                   |
| 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. |                |                |                     |                    |                      |                |                |                |                |                         |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                |                     |                    |                      |                |                |                |                |                         |                   |
| 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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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy |                                                                                                       | Date: February 2016                                      |
| Appropriation/Budget Activity<br>1319 / 7               | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) | Project (Number/Name)<br>0725 / Communication Automation |

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<br>1319 / 7              |                              |                                                                         |                |         |               | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |               |                 |               | Project (Number/Name)<br>0725 / Communication Automation |               |                     |                     |               |                                |
| Product Development (\$ in Millions)                   |                              |                                                                         |                | FY 2015 |               | FY 2016                                                                                               |               | FY 2017<br>Base |               | FY 2017<br>OCO                                           |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                       | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                                     | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 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<br>Hamilton : San<br>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<br>International<br>Corporation : San<br>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<br>Base |               | FY 2017<br>OCO                                           |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                       | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                                     | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 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<br>and Application : San<br>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<br>Base |               | FY 2017<br>OCO                                           |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                       | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                                     | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Operational Test & Evaluation-ADNS                     | WR                           | COMOPTEVFOR :<br>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<br>1319 / 7                                                                                                                                                                                                                            |                              |                                                                         |                |         |               | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |               |                 |               |                |               | Project (Number/Name)<br>0725 / Communication Automation |                     |               |                                |
| Test and Evaluation (\$ in Millions)                                                                                                                                                                                                                                 |                              |                                                                         |                | FY 2015 |               | FY 2016                                                                                               |               | FY 2017<br>Base |               | FY 2017<br>OCO |               | FY 2017<br>Total                                         |                     |               |                                |
| Cost Category Item                                                                                                                                                                                                                                                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                       | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost                                                     | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 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<br>Base |               | FY 2017<br>OCO |               | FY 2017<br>Total                                         |                     |               |                                |
| Cost Category Item                                                                                                                                                                                                                                                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                       | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost                                                     | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Program Management<br>Support-ADNS                                                                                                                                                                                                                                   | C/CPFF                       | Systems Research<br>& Application : San<br>Diego, CA                    | 0.147          | 0.000   |               | 0.000                                                                                                 |               | 0.000           |               | -              |               | 0.000                                                    | 0.000               | 0.147         | -                              |
| Program Management<br>Support-ADNS                                                                                                                                                                                                                                   | C/CPFF                       | Science Applications<br>International<br>Corporation : San<br>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<br>Years | FY 2015 |               | FY 2016                                                                                               |               | FY 2017<br>Base |               | FY 2017<br>OCO |               | FY 2017<br>Total                                         | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>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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PE 0303138N: *Consolidated Afloat Network Ent Services...*  
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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><br>1319 / 7              | <b>R-1 Program Element (Number/Name)</b><br>PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</i> | <b>Project (Number/Name)</b><br>0725 / <i>Communication Automation</i> |                            |

**Schedule Details**

| <b>Events by Sub Project</b>                                                                                                                                                  | <b>Start</b>   |             | <b>End</b>     |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                                                                                                                                               | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| <b><i>Fiscal Year</i></b>                                                                                                                                                     |                |             |                |             |
| 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<br>1319 / 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |                  |         |         | Project (Number/Name)<br>9C87 / CANES Integration |                |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Prior<br>Years | FY 2015 | FY 2016 | FY 2017<br>Base | FY 2017<br>OCO                                                                                        | FY 2017<br>Total | FY 2018 | FY 2019 | FY 2020                                           | FY 2021        | Cost To<br>Complete | Total<br>Cost |
| 9C87: CANES Integration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 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<br>Base                                   | FY 2017<br>OCO | FY 2017<br>Total    |               |
| Title: CANES Integration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |         |         |                 |                                                                                                       |                  | 21.048  | 21.667  | 23.541                                            | 0.000          | 23.541              |               |
| Articles:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |         |                 |                                                                                                       |                  | -       | -       | -                                                 | -              | -                   |               |

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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><br>1319 / 7                   |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0303138N / <i>Consolidated Afloat Network Ent Services(CANES)</i> |                            | <b>Project (Number/Name)</b><br>9C87 / <i>CANES Integration</i> |  |

| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017<br/>Base</b> | <b>FY 2017<br/>OCO</b> | <b>FY 2017<br/>Total</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------------|------------------------|--------------------------|
| <p><b><i>FY 2015 Accomplishments:</i></b><br/>Continued development of Technical Insertion (TI) software baselines. Completed Platform Sets 3 &amp; 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 &amp; 4. Performed Developmental Testing (DT) and initiated Follow-on Operational Test &amp; Evaluation (FOT&amp;E) in support of force level testing. Conducted CANES Hyper Converged Infrastructure Innovation Pilot (CHIIP) requirement definitization.</p> <p><b><i>FY 2016 Plans:</i></b><br/>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&amp;E in support of force level testing.</p> <p><b><i>FY 2017 Base Plans:</i></b><br/>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&amp;E in support of submarine testing. Perform DT Assist for TI 2 hardware and software development.</p> <p><b><i>FY 2017 OCO Plans:</i></b><br/>N/A</p> |                |                |                         |                        |                          |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 21.048         | 21.667         | 23.541                  | 0.000                  | 23.541                   |

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

| <b>Line Item</b>         | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017<br/>Base</b> | <b>FY 2017<br/>OCO</b> | <b>FY 2017<br/>Total</b> | <b>FY 2018</b> | <b>FY 2019</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
|--------------------------|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| • OPN/2915: CANES        | 355.046        | 275.641        | 212.030                 | -                      | 212.030                  | 349.727        | 417.519        | 395.807        | 346.850        | 4,203.681                   | 7,270.255         |
| • OPN/2925: CANES Intell | 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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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                       | Date: February 2016                               |
| Appropriation/Budget Activity<br>1319 / 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) | Project (Number/Name)<br>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.                                                                                             |                                                                                                       |                                                   |
| <b>E. Performance Metrics</b><br>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<br>1319 / 7              |                              |                                              |                |         |               | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |               |                 |               | Project (Number/Name)<br>9C87 / CANES Integration |               |                     |                     |               |                                |
| Product Development (\$ in Millions)                   |                              |                                              |                | FY 2015 |               | FY 2016                                                                                               |               | FY 2017<br>Base |               | FY 2017<br>OCO                                    |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location            | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                              | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>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<br>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<br>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 :<br>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<br>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<br>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,<br>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,<br>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<br>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<br>(MITRE) : San<br>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<br>Base |               | FY 2017<br>OCO                                    |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location            | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                              | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Studies & Design                                       | MIPR                         | Washington<br>HQ Services :<br>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<br>1319 / 7              |                              |                                                       |                |         |               | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |               |                 |               | Project (Number/Name)<br>9C87 / CANES Integration |               |                     |                     |               |                                |
| Support (\$ in Millions)                               |                              |                                                       |                | FY 2015 |               | FY 2016                                                                                               |               | FY 2017<br>Base |               | FY 2017<br>OCO                                    |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                     | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                              | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 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<br>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,<br>DC                              | 0.000          | 0.370   | Jun 2015      | 0.000                                                                                                 |               | 0.000           |               | -                                                 |               | 0.000               | 0.000               | 0.370         | -                              |
| Certification Authority                                | C/CPFF                       | Innovative Defense<br>Technologies :<br>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<br>Base |               | FY 2017<br>OCO                                    |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                     | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                              | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Operational Test &<br>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 &<br>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 &<br>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 &<br>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<br>Base |               | FY 2017<br>OCO                                    |               | FY 2017<br>Total    |                     |               |                                |
| Cost Category Item                                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location                     | Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                                  | Award<br>Date | Cost            | Award<br>Date | Cost                                              | Award<br>Date | Cost                | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Prior Year Management<br>Services                      | Various                      | Various : Various                                     | 11.980         | 0.000   |               | 0.000                                                                                                 |               | 0.000           |               | -                                                 |               | 0.000               | 0.000               | 11.980        | 2.742                          |

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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><br>1319 / 7                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0303138N / Consolidated Afloat Network Ent Services(CANES) |  |  |  |  |  | <b>Project (Number/Name)</b><br>9C87 / CANES Integration |  |  |  |

  

| <b>Management Services (\$ 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> |
| Program Management                          | C/CPFF                            | CSA : San Diego, CA                       | 0.204              | 0.000          |                   | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | 8.732                   | 8.936             | -                               |
| <b>Subtotal</b>                             |                                   |                                           | 12.184             | 0.000          |                   | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | 8.732                   | 20.916            | -                               |

  

|                            | <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>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|----------------------------|--------------------|----------------|--|----------------|--|---------------------|--|--------------------|--|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Project Cost Totals</b> | 137.069            | 21.048         |  | 21.667         |  | 23.541              |  | -                  |  | 23.541               | 332.629                 | 535.954           | -                               |

  

**Remarks**



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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><br>1319 / 7              | <b>R-1 Program Element (Number/Name)</b><br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) | <b>Project (Number/Name)</b><br>9C87 / CANES Integration |                            |

**Schedule Details**

| <b>Events by Sub Project</b>                                                                                                                        | <b>Start</b>   |             | <b>End</b>     |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                                                                                                                     | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| <b>Fiscal Year</b>                                                                                                                                  |                |             |                |             |
| 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<br>1319 / 7                                          |  | R-1 Program Element (Number/Name)<br>PE 0303138N / Consolidated Afloat Network<br>Ent Services(CANES) |                     | Project (Number/Name)<br>9C87 / CANES Integration |      |
|                                                                                    |  | Start                                                                                                 |                     | End                                               |      |
| Events by Sub Project                                                              |  | 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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