| Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy | | | | | | | | | | | Date: February 2015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development* | | | | | R-1 Program Element (Number/Name)<br>PE 0204163N *I Fleet Tactical Development* | | | | | | | |
| **COST ($ in Millions)** | **Prior Years** | **FY 2014** | **FY 2015** | **FY 2016 Base** | **FY 2016 OCO** | **FY 2016 Total** | **FY 2017** | **FY 2018** | **FY 2019** | **FY 2020** | **Cost To Complete** | **Total Cost** |
| Total Program Element | 111.577 | 22.576 | 27.039 | 62.867 | - | 62.867 | 51.221 | 8.827 | 2.816 | 2.904 | Continuing | Continuing |
| 0725: *Communication Automation* | 111.577 | 22.576 | 27.039 | 62.867 | - | 62.867 | 51.221 | 8.827 | 2.816 | 2.904 | Continuing | Continuing |

**Note**

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

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

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for fleet tactical users. It includes Battle Force Tactical Network (BFTN), Joint Aerial Layer Network-Maritime (JALN-M), Automated Digital Network System (ADNS) and High Frequency Internet Protocol/Sub Network Relay.

The Battle Force Tactical Network (BFTN) on each surface, subsurface, air, or fixed US Navy platform utilizes previously installed/existing Line of Sight (LOS)/Extended Line of Sight (ELOS) radios (a.k.a. Radio Frequency (RF)) to create a secure gateway that inter-connects all users into a common RF Tactical Network (a.k.a. wireless). This Network separately supports US-Only and NATO Allied/Coalition users' tactical data information exchanges on each platform (node) between and/or across separately dispersed RF Networks even if Satellite Communications (SATCOM) channels to shore are lost during an Assured C2 and Anti-Access/Area Denial (A2/AD) event.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN-M architecture which provides assured communications in any environment, especially Anti-Access/Area Denial (A2/AD). With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity with the High Capacity Backbone (HCB) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document (ICD) and the JALN-M Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) waveform (Navy Multiband Terminal (NMT)) for intra-battle group DARE communications, a Common Data Link (CDL) waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity. Furthermore, Positioning, Navigation, and Timing (PNT) efforts related to the JALN-M Pod will develop a prototype PNT subsystem that will be integrated into the JALN-M Pod, and will provide position and timing data to other Pod subsystems, both with and without Global Positioning System (GPS) connectivity. Because the Pod is being designed to operate in an A2/AD environment, the Pod HCB and XDR (NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

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.

FY16 BFTN efforts will focus on the completion of the development of the engineering changes and resolve any developmental issues that are realized as part of the Integrated Test/Operational Test (IT/OT).

FY16 efforts will focus on the continued design, development, integration and test of the Joint Aerial Layer Network-Maritime (JALN-M) end-to-end system.

In FY 2016, ADNS RDT&E investment will continue to support Interface Design Development (IDD) and integration with network applications, development of Line-Of-Sight (LOS) link, DISN integration, and development of Cipher-Text (CT) piers. Study efforts will continue with the intention of integrating ADNS into the JALN-M system. JALN-M is the Navy implementation that provides network connectivity in areas that have limited or denied Satellite Communications (SATCOM). Also in FY 2016, Post Implementation Review (PIR) will begin in support of INC III Submarines. ADNS system development will include addressing network management, intra and inter domain routing, Quality of Service (QoS), and Concept of Operations discussions. Two new efforts will commence using emerging technologies: 1) Network-Based Cyber Security and 2) Virtualization to increase performance of the Navy's ADNS routing and transport architecture.

| B. Program Change Summary ($ in Millions) | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 23.422 | 27.281 | 33.316 | - | 33.316 |
| Current President's Budget | 22.576 | 27.039 | 62.867 | - | 62.867 |
| Total Adjustments | -0.846 | -0.242 | 29.551 | - | 29.551 |
| • Congressional General Reductions | - | -0.242 | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -0.846 | - | | | |
| • Program Adjustments | - | - | -4.716 | - | -4.716 |
| • Rate/Misc Adjustments | - | - | 34.267 | - | 34.267 |

**Change Summary Explanation**

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) Transparency compliance.

| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

| COST ($ in Millions) | Prior Years | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total | FY 2017 | FY 2018 | FY 2019 | FY 2020 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0725: *Communication Automation* | 111.577 | 22.576 | 27.039 | 62.867 | - | 62.867 | 51.221 | 8.827 | 2.816 | 2.904 | Continuing | Continuing |
| 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. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

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

The Battle Force Tactical Network (BFTN) on each surface, subsurface, air, or fixed US Navy platform uses previously installed/existing Line of Sight (LOS)/ Extended Line of Sight (ELOS) radios (a.k.a. Radio Frequency (RF)) to create a secure gateway that inter-connects all users into a common RF Tactical Network (a.k.a. wireless). BFTN enables war-fighters to digitally communicate NATO Allied/Coalition and US-Only information necessary to execute and plan in a real-time operational environment without relying on ashore application server interaction. This RF Network separately supports US-Only Carrier and Expeditionary Strike Group Commanders and maintains the digital communication ability to execute and plan with other U.S. ships, submarines or aircraft, as well as with NATO Allied/Coalition networks; even if Satellite Communication (SATCOM) channels to shore are lost.

In a satellite-denied event, adversaries covertly jam or disable communications necessary to Fleet protection and tactical operation. BFTN enhanced engineering changes will facilitate automation for operators ease of use, communications relays and application of network aware link establishment (NA-ALE) within/across battle groups. The BFTN engineering change will also enable size, weight and power (SWAP) modification of the existing BFTN Fly Away Kit for use in small platforms (i.e. surface, subsurface and manned/unmanned air platforms) which will also extend BFTN Ultra High Frequency/High Frequency (UHF/HF) link ranges. As a result, BFTN service levels can be extended for theatre of operations sufficient to thwart contested SATCOM connectivity to shore servers. Engineering studies and related test activities will commence FY14 to support the ultimate goal of development and implementation of an engineering change for increased BFTN network data rates and link ranges (1.92Mbps - Ultra High Frequency (UHF) at 20nm or greater and 128Kbps - High Frequency (HF) at 200nm or greater), using either a single channel or quadrupling of system channel quantities for improved service, increased network performance and jam resistance in a satellite degraded/denied environment. Design enhancements will enable the BFTN network to self-assemble Transmission Control Protocol/Internet Protocol (TCP/IP) delivery circuits, adapt to user proximity changes due to maneuvers or operational demands and self-heal those data delivery circuits, if they are degraded or forcefully taken from afloat forces. These engineering changes will enhance ease of operators' use and mitigate obsolescence and end of life impacts associated with steady progression of network technology and architectures.

FY16 BFTN efforts will support the development of the engineering changes and will be used to resolve any developmental issues that are discovered as part of the Integrated Test/Operation Test (IOT&E). These efforts include completing the system integration package for BFTN engineering changes as back-fit and forward-fit configuration with associated engineering drawings, logistics and training. These efforts also include completing the active anti jam sub-system Propagation Aware Automated Link Establishment/Automated Link Establishment Controller (PAALE/ALEC) and field test for hands-free automation, implementing component miniaturization to fit ships/subs and manned/unmanned aircraft; and development and certification of digital multi-coupler which allows up to 4 radios to share a single

antenna reducing top-side footprint. In addition, these efforts include shore integration of BFTN Global Information Grid Entry Point (non permanent change) with cooperation of USN and USAF. Final lab testing of ADNS to/from BFTN to validate internet-working end to end compatibility. Complete certification of engineering changes at Common Submarine Radio Room, land- based submarine radio room and BFTN land-based test station.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN-M architecture which provides assured communications in any environment, especially Anti-Access Area Denial (A2AD). With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity with the High Capacity Backbone (HCB) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document (ICD) and the JALN-M Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) waveform (Navy Multiband Terminal (NMT)) for intra-battle group DARE communications, a Common Data Link (CDL) waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity. Furthermore, Positioning, Navigation, and Timing (PNT) efforts related to the JALN-M Pod will develop a prototype PNT subsystem that will be integrated into the JALN-M Pod, and will provide position and timing data to other Pod subsystems, both with and without Global Positioning System (GPS) connectivity. Because the Pod is being designed to operate in an A2AD environment, the Pod HCB and XDR (NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

FY16 efforts will focus on the continued design, development, integration and test of the JALN-M end-to-end system.

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

In FY 2016, ADNS RDT&E investment will continue to support Interface Design Development (IDD) and integration with network applications, development of Line-Of-Sight (LOS) link, DISN integration, and development of CT piers. Study efforts will continue with the intention of integrating ADNS into the Joint Aerial Layer Network - Maritime (JALN-M) system. JALN-M is the Navy implementation that provides network connectivity in areas that have limited or denied SATCOM. Also in FY 2016, Post Implementation Review (PIR) will begin in support of INC III Submarines. ADNS system development will include addressing network management, intra and inter domain routing, QoS, and Concept of Operations discussions. Two new efforts will commence using emerging technologies: 1) Network-Based Cyber Security and 2) Virtualization to increase performance of the Navy's ADNS routing and transport architecture.

| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total |
|---|---|---|---|---|---|
| ***Title:*** Battle Force Tactical Network (BFTN) | 3.500 | 7.752 | 13.028 | - | 13.028 |
| ***Articles:*** | - | - | - | - | - |

***Description:*** Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.

***FY 2014 Accomplishments:***
Continued support to the Integrated Test/Operational Test (IT/OT) event in support of a Full Rate Production decision. Submitted RFP for BFTN Engineering Change RDT&E contract with RFP release estimated Q4FY14. Initiated the development of acquisition and system engineering documentation, initiated efforts in planning and management of BFTN acquisition plans, logistics, milestones and schedule to support efforts toward the award of BFTN engineering change contract. Supported demonstration and operational tests and studies of BFTN engineering change design i.e., jamming resistance. Reconfigured BFTN laboratory to support individual component and improved system performance test and evaluation. Supported channel allocation/ saturation studies; designed specifications for High Frequency (HF) and Ultra High Frequency (UHF) radio wideband modification kit and radio feasibility studies; planned for environmental and shock/vibe testing; and developmental and demonstration test activities.

***FY 2015 Plans:***
Continue to support the IT/OT event in support of a full rate production decision. Continue to develop engineering documentation, initiate efforts in management of plans, logistics, currently fielded systems and develop solutions for end of life issues, obsolescence, and increase system ease of use for operators. Develop engineering documentation, initiate efforts in management of plans, logistics, and milestones and schedule to support efforts toward BFTN engineering change contract award. Award contract for modification and testing efforts of BFTN engineering change to overcome obsolescence issues which include: initiation of system sub-component miniaturization to reduce system weight and power parameters for ready integration into a broader range of platform configurations and support MIL-STD (Military Standard).

***FY 2016 Base Plans:***
Complete the development of engineering changes and resolve any developmental issues that are realized during the FY15 Integrated Testing and Operational Testing (IOT&E). These efforts include completing the system integration package for BFTN engineering changes as back-fit and forward-fit configuration with associated engineering drawings, logistics and training. These efforts also include completing the active anti-jam sub-system Propagation Aware Automated Link Establishment/Automated Link Establishment Controller (PAALE/ALEC) and field test for hands-free automation, implementing component miniaturization to fit ships/

| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total |
|---|---|---|---|---|---|
| subs and manned/unmanned aircraft; and development and certification of digital multi-coupler which allows up to 4 radios to share a single antenna reducing top-side footprint. In addition, these efforts include shore integration of BFTN Global Information Grid Entry Point (non permanent change) with cooperation of USN and USAF. Final lab testing of Automated Digital Network System (ADNS) to/from BFTN to validate internet-working end to end compatibility. Complete certification of engineering changes at Common Submarine Radio Room, land-based submarine radio room and BFTN land-based test station.<br>***FY 2016 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** Joint Aerial Layer Network -Maritime (JALN-M)<br>***Articles:***<br>***Description:*** Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.<br>***FY 2014 Accomplishments:***<br>Completed Airborne eXtended Data Rate (A-XDR) flight testing. Conducted flight test demonstrations of airborne XDR payload to establish throughput at range, anti-jamming capability verses uplink and downlink jamming, simultaneous connections, link availability and bit error rate. Initiated the design specifications for a JALN-M prototype payload. Initiated efforts on development of JALN-M prototype payloads in a Pod, leveraging the results of Airborne XDR flight demonstrations.<br>***FY 2015 Plans:***<br>FY15 efforts will include development of Joint Aerial Layer Network-Maritime (JALN-M) capabilities to be interoperable with the Airborne XDR (Navy Multiband Terminal (NMT)) and High Capacity Backbone (HCB) waveforms, as well as establish a network connection to enable access to Department of Defense (DoD) wide area networks such as NIPRNET and SIPRNET via the shore node HCB terminal and a Mobile Global Information Grid (GIG) Entry Point (MGEP). Funding will also facilitate the development of the design specification of JALN-M payload requirements for integration into an airborne prototype Pod. Funds will also be applied to the planning and execution of a JALN-M demonstration scheduled in FY18.<br>***FY 2016 Base Plans:***<br>FY16 efforts will focus on the continued design, development, integration and test of the Joint Aerial Layer Network-Maritime (JALN-M) end-to-end system. Begin Pod assembly and subsystem integration and test of Pod, High Capacity Backbone (HCB), and Airborne Extended Data Rate (XDR). Begin integration and installation of Mobile Gig Entry Point (MGEP). Continue Assured Position Navigation and Timing (PNT) | 19.076<br>- | 19.287<br>- | 46.392<br>- | -<br>- | 46.392<br>- |

| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total |
|---|---|---|---|---|---|
| subsystem integration and test and Pod, MGEP, and ship terminal production for HCB. Complete Airborne XDR development, PNT subsystem development, studies and design for HCB, and equipment procurement of MGEP. Efforts include planning activities and the development of systems engineering documentation in support of the JALN-M Pod demonstration scheduled for FY18.<br>***FY 2016 OCO Plans:***<br>N/A | | | | | |
| ***Title:*** Automated Digital Network System (ADNS) | - | - | 3.447 | - | 3.447 |
| ***Articles:*** | - | - | - | - | - |
| ***FY 2014 Accomplishments:***<br>Funding resides under PE: 0303138N<br>***FY 2015 Plans:***<br>Funding resides under PE: 0303138N<br>***FY 2016 Base Plans:***<br>Continue testing and interfaces with ENMS, IPv6 transition, and integration of SHF. Continue the IDD and integration with network applications, develop LOS link, DISN integration and development of CT Piers. Investigate and recommend platform network devices, network design support to include integration with WAN and JALN-M system. Commence network-based Cyber Security technology and virtualizing ADNS. Post Implementation Review (PIR) will occur in support of Increment III Submarines.<br>***FY 2016 OCO Plans:***<br>N/A | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 22.576 | 27.039 | 62.867 | - | 62.867 |

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

| Line Item | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total | FY 2017 | FY 2018 | FY 2019 | FY 2020 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • OPN/3057: *Battle Force Tactical Network (BFTN).* | 1.836 | 1.425 | 4.068 | - | 4.068 | 7.224 | - | - | - | - | 41.831 |
| • OPN/3050: *Automated Digital Network System (ADNS)* | - | - | 53.395 | - | 53.395 | 44.549 | 49.397 | 57.972 | 58.608 | - | 263.921 |
| • OPN/2915: *CANES (ADNS Only)* | 52.098 | 56.626 | - | - | - | - | - | - | - | - | 160.060 |

| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

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

| Line Item | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO | FY 2016 Total | FY 2017 | FY 2018 | FY 2019 | FY 2020 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Remarks**

ADNS - Prior to FY13 funding resides in PE 0204163N/BLI 3050. FY13-15 funding resides in PE 0303138N/BLI 2915. FY16-20 funding was realigned back into PE 0204163N/BLI 3050 for Major Automated Information System (MAIS) Transparency compliance.

**D. Acquisition Strategy**

Battle Force Tactical Network (BFTN) will follow an evolutionary acquisition approach with collegial development across activities and coalesced implementation phases at accredited facility to achieve interoperable component upgrades, system integration and automated operations that optimize Fleet implementation. Program will use awarded OMNIBUS contracts to obtain engineering and support services consistent with acquisition initiatives. Development of BFTN engineering change enhancements leverages Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) products while expanding material savings by streamlining logistics, installation, integration and training concepts. 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 products.

Joint Aerial Layer Network-Maritime (JALN-M) will address capability gaps as directed by the JALN Analysis of Alternatives (AoA) by integrating a suite of technical capabilities into a single payload. Technical and acquisition support will be provided to conduct HCB and airborne XDR demonstrations and to develop six prototype JALN-M payloads.

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

**E. Performance Metrics**

BFTN - Complete successful Initial Operational Test and Evaluation (IOT&E). Legacy UHF Radios Modified for Multichannel Wideband Interoperability Verified. Successful Electro Magnetic Control/Electro Magnetic Interference (EMC/EMI) Test & Accreditation. Continue engineering changes for BFTN engineering change to increase individual High Frequency Internet Protocol (HFIP) channel data rates to 128Kbps and Ultra High Frequency Internet Protocol (UHFIP) to 1.9Mbps. Successful demonstration of engineering change over three (3) channels simultaneously, followed by successful demonstration of Spatial Multiplexing design over eight (8) channels simultaneously. Increased data rates for modem and controller are verified.

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

| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

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

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary Hardware Development | PO | SSC : PAC/LANT | 1.025 | - | | - | | - | | - | | - | - | 1.025 | - |
| Primary Hardware Development | C/CPFF | Northrop Grumman : McLean, Virginia | 7.793 | - | | - | | - | | - | | - | - | 7.793 | - |
| Primary Hardware Development | C/CPFF | General Dynamics : Maryland | 17.601 | - | | - | | - | | - | | - | - | 17.601 | - |
| Primary Hardware Development | C/CPFF | SRA : San Diego, CA | 0.016 | - | | - | | - | | - | | - | - | 0.016 | - |
| Primary Hardware Dev. - MALN Inc 2 | C/FFP | Boeing : Washington State | 1.245 | - | | - | | - | | - | | - | - | 1.245 | - |
| Primary Hardware/ Software | C/CPFF | Air Force : Various | 2.078 | - | | - | | - | | - | | - | - | 2.078 | - |
| Primary Hardware/ Software MALN Inc 1 | WR | SSC : PAC | 0.207 | - | | - | | - | | - | | - | - | 0.207 | - |
| Integration and Test - MALN Inc 1 | WR | SSC : PAC | 0.810 | - | | - | | - | | - | | - | - | 0.810 | - |
| Integration and Test - MALN Inc 2 | WR | SSC : PAC | 0.521 | - | | - | | - | | - | | - | - | 0.521 | - |
| Integration and Test | C/CPFF | VAR : Various | 0.079 | - | | - | | - | | - | | - | - | 0.079 | - |
| Systems Engineering-ADNS | WR | SSC : PAC/LANT | 22.389 | - | | - | | - | | - | | - | - | 22.389 | - |
| Systems Engineering | Various | VAR : Various | 5.172 | - | | - | | - | | - | | - | - | 5.172 | - |
| Systems Engineering | MIPR | CECOM (MITRE) : New Jersey | 0.585 | - | | - | | - | | - | | - | - | 0.585 | - |
| Systems Engineering-ADNS | WR | NUWC : Newport, RI | 1.864 | - | | - | | - | | - | | - | - | 1.864 | - |
| Prime Mission Product | PO | SSC : PAC/LANT | 4.353 | - | | - | | - | | - | | - | - | 4.353 | - |
| Integration and Test-ADNS | WR | NUWC : Newport | 1.162 | - | | - | | - | | - | | - | - | 1.162 | - |
| Systems Engineering | C/CPFF | Boeing : Washington State | 2.087 | - | | - | | - | | - | | - | - | 2.087 | - |
| Integration and Test-ADNS | WR | SSC : PAC/LANT | 0.459 | - | | - | | - | | - | | - | - | 0.459 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Systems Engineering-ADNS | C/CPFF | Solute : San Diego,CA | 0.253 | - | | - | | - | | - | | - | - | 0.253 | - |
| System Engineering - MALN Inc 1 | WR | SSC : PAC | 0.207 | - | | - | | - | | - | | - | - | 0.207 | - |
| System Engineering - MALN Inc 2 | WR | SSC : PAC | 0.717 | - | | - | | - | | - | | - | - | 0.717 | - |
| System Engineering - MALN Inc 1 | SS/FPIF | Linquest : San Diego, CA | 0.536 | - | | - | | - | | - | | - | - | 0.536 | - |
| Primary Hardware Dev.-JALN-M | WR | NSWC : Panama City, FL | 0.000 | 0.635 | Apr 2014 | - | | - | | - | | - | - | 0.635 | - |
| Primary Hardware Dev.-JALN-M | C/CPFF | Raytheon : Marlborough, MA | 0.000 | - | | - | | - | | - | | - | - | - | - |
| Primary Hardware Dev.-JALN-M | WR | NAWCAD : Patuxent River, MD | 3.573 | - | | 3.970 | Jan 2015 | - | | - | | - | Continuing | Continuing | Continuing |
| Primary Hardware/ Software - JALN-M | C/FFP | MIT/Lincoln Lab : Lexington MA | 9.898 | 6.760 | Mar 2014 | 1.070 | Oct 2014 | 12.847 | Oct 2015 | - | | 12.847 | Continuing | Continuing | Continuing |
| System Enginering JALN-M | C/CPFF | STF : San Diego,CA | 0.000 | 0.901 | Feb 2014 | 0.950 | Nov 2014 | 2.285 | Nov 2015 | - | | 2.285 | Continuing | Continuing | Continuing |
| System Enginering JALN-M | WR | SSC : PAC | 0.000 | 1.321 | Feb 2014 | 0.600 | Jan 2015 | 1.443 | Jan 2016 | - | | 1.443 | Continuing | Continuing | Continuing |
| System Enginering JALN-M | WR | NAWCAD : Patuxent River, MD | 0.000 | 1.200 | Nov 2013 | 1.300 | Mar 2015 | 3.127 | Mar 2016 | - | | 3.127 | Continuing | Continuing | Continuing |
| System Engineering BFTN | WR | SSC : PAC | 0.433 | 0.538 | Jul 2014 | 1.578 | Nov 2014 | 2.652 | Nov 2015 | - | | 2.652 | Continuing | Continuing | Continuing |
| Primary HW/SW Dev BFTN | WR | SSC : PAC | 0.000 | - | | - | | - | | - | | - | Continuing | Continuing | Continuing |
| Primary Hardware Dev BFTN | C/FFP | Leidos : Sterling, VA | 0.000 | - | | 0.250 | Jan 2015 | 0.420 | Jan 2016 | - | | 0.420 | Continuing | Continuing | Continuing |
| System Engineering BFTN | WR | SSC : LANT JICF | 0.000 | 0.129 | May 2014 | 0.065 | Nov 2014 | 0.109 | Nov 2015 | - | | 0.109 | Continuing | Continuing | Continuing |
| System Engineering BFTN | C/CPFF | STF : San Diego,CA | 0.000 | 0.285 | Feb 2014 | 0.156 | Nov 2014 | 0.262 | Nov 2015 | - | | 0.262 | Continuing | Continuing | Continuing |
| System Engineering BFTN | SS/CPIF | GD : General Dynamics | 0.000 | - | | - | | - | | - | | - | Continuing | Continuing | Continuing |
| Primary Hardware BFTN | SS/CPIF | Metasoft : San Diego, CA | 0.000 | 0.714 | Sep 2014 | 1.774 | Sep 2015 | 2.981 | Jan 2016 | - | | 2.981 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| System Engineering BFTN | WR | NAVAIR : Lexington Park, MD | 0.000 | - | | - | | - | | - | | - | Continuing | Continuing | Continuing |
| Primary HW Dev BFTN | WR | SSC : PAC NIEF/ JCF | 0.000 | 0.060 | May 2014 | 0.125 | Jan 2015 | 0.210 | Jan 2016 | - | | 0.210 | Continuing | Continuing | Continuing |
| Primary HW/SW Developement BFTN | WR | NSWC : Corona, CA | 0.000 | - | | - | | - | | - | | - | Continuing | Continuing | Continuing |
| Primary Software Dev BFTN | SS/BA | SSC : PAC | 0.642 | 0.810 | Nov 2013 | 0.426 | Nov 2014 | 0.716 | Nov 2015 | - | | 0.716 | Continuing | Continuing | Continuing |
| System Engineering BFTN | WR | SSC : LANT | 0.000 | 0.268 | Nov 2013 | 0.580 | Nov 2014 | 0.975 | Nov 2015 | - | | 0.975 | Continuing | Continuing | Continuing |
| Systems Engineering-ADNS | WR | SSC : PAC | 0.000 | - | | - | | 2.839 | Dec 2015 | - | | 2.839 | - | 2.839 | - |
| Intergration and Test-ADNS | WR | SSC : PAC | 0.000 | - | | - | | 0.174 | Dec 2015 | - | | 0.174 | - | 0.174 | - |
| Systems Engineering-ADNS | WR | SSC : LANT | 0.000 | - | | - | | 0.243 | Nov 2015 | - | | 0.243 | - | 0.243 | - |
| | | **Subtotal** | 85.705 | 13.621 | | 12.844 | | 31.283 | | - | | 31.283 | - | - | - |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Development Support | WR | SSC : PAC/LANT | 0.160 | - | | - | | - | | - | | - | - | 0.160 | - |
| Software Development | Various | VAR : Various | 7.250 | - | | - | | - | | - | | - | - | 7.250 | - |
| Integrated Logistics Support-ADNS | WR | SSC : PAC/LANT | 0.138 | - | | - | | - | | - | | - | - | 0.138 | - |
| Integrated Logistics Support | Various | VAR : Various | 1.150 | - | | - | | - | | - | | - | - | 1.150 | - |
| Technical Data | Various | VAR : Various | 0.500 | - | | - | | - | | - | | - | - | 0.500 | - |
| Studies and Analysis | WR | SSC : PAC/LANT | 0.960 | - | | - | | - | | - | | - | - | 0.960 | - |
| Documentation- MALN Inc 1 | WR | SSC : PAC | 0.200 | - | | - | | - | | - | | - | - | 0.200 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Studies and Analysis BFTN | WR | SSC : PAC | 0.048 | - | | 0.320 | Oct 2014 | 0.538 | Oct 2015 | - | | 0.538 | Continuing | Continuing | Continuing |
| System Engineering BFTN | WR | SSC : PAC | 0.000 | - | | 0.102 | Nov 2014 | 0.171 | Nov 2015 | - | | 0.171 | Continuing | Continuing | Continuing |
| Documentation BFTN | C/CPFF | CSA : San Diego, CA | 0.000 | 0.126 | Dec 2013 | 0.249 | Nov 2014 | 0.418 | Nov 2015 | - | | 0.418 | Continuing | Continuing | Continuing |
| Documentation BFTN | C/CPFF | TASC : San Diego, CA | 0.000 | - | | 0.125 | Nov 2014 | 0.210 | Nov 2015 | - | | 0.210 | Continuing | Continuing | Continuing |
| Studies and Analysis - JALN-M | WR | NAWCAD : Patuxent River, MD | 0.000 | - | | - | | - | | - | | - | - | - | - |
| Development Support - JALN-M | C/CPFF | BAH : San Diego | 0.697 | 2.015 | Dec 2013 | 0.750 | Dec 2014 | 1.804 | Dec 2015 | - | | 1.804 | Continuing | Continuing | Continuing |
| Development Support - JALN-M | C/CPFF | Mitre : San Diego, CA | 0.000 | 0.541 | Oct 2013 | 0.300 | Oct 2014 | 0.722 | Oct 2015 | - | | 0.722 | Continuing | Continuing | Continuing |
| Development Support - JALN-M | WR | SSC : PAC | 0.000 | 0.948 | Oct 2013 | 1.158 | Oct 2014 | 2.785 | Oct 2015 | - | | 2.785 | Continuing | Continuing | Continuing |
| Development Support - JALN-M | C/CPFF | Linquest : San Diego, CA | 0.000 | - | | 0.300 | Apr 2015 | - | | - | | - | Continuing | Continuing | Continuing |
| Financial Management Support - JALN-M | C/CPFF | Artemis : San Diego, CA | 0.000 | 0.206 | Oct 2013 | 0.230 | Oct 2014 | 0.553 | Oct 2015 | - | | 0.553 | Continuing | Continuing | Continuing |
| Software Dev Support-ADNS | WR | SSC : LANT | 0.000 | - | | - | | 0.017 | Dec 2015 | - | | 0.017 | - | 0.017 | - |
| | | **Subtotal** | 11.103 | 3.836 | | 3.534 | | 7.218 | | - | | 7.218 | - | - | - |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Developmental Test & Evaluation-ADNS | WR | SSC : PAC/LANT | 6.659 | - | | - | | - | | - | | - | - | 6.659 | - |
| Developmental Test & Evaluation-ADNS | MIPR | JTIC : Fort Huachuca, AZ | 0.449 | - | | - | | - | | - | | - | - | 0.449 | - |
| Operational Test & Evaluation-ADNS | WR | COMOPTEVOR : Norfolk, VA | 1.697 | - | | - | | - | | - | | - | - | 1.697 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operational Test & Evaluation | Various | VAR : Various | 4.955 | - | | - | | - | | - | | - | - | 4.955 | - |
| Developmental Test & Evaluation-MALN INC I | WR | SSC : PAC | 0.148 | - | | - | | - | | - | | - | - | 0.148 | - |
| Developmental Test & Evaluation-MALN INC II | WR | SSC : PAC | 0.604 | - | | - | | - | | - | | - | - | 0.604 | - |
| Integration and Test BFTN | C/FFP | COMOPTEVOR : Norfolk, VA | 0.257 | 0.240 | Jul 2014 | 0.357 | Nov 2014 | 0.600 | Nov 2015 | - | | 0.600 | Continuing | Continuing | Continuing |
| Test and Evaluation Support BFTN | WR | SSC : PAC | 0.000 | - | | 0.242 | Jan 2015 | 0.407 | Jan 2016 | - | | 0.407 | Continuing | Continuing | Continuing |
| Test and Evaluation Support BFTN | SS/CPFF | UCSD : San Diego, CA | 0.000 | - | | 0.380 | Mar 2015 | 0.639 | Mar 2016 | - | | 0.639 | Continuing | Continuing | Continuing |
| Developmental Test and Evaluation-JALN-M | C/CPFF | JHU/APL : Laurel, MD | 0.000 | 1.400 | Apr 2014 | 1.400 | Nov 2014 | 3.367 | Nov 2015 | - | | 3.367 | Continuing | Continuing | Continuing |
| Developmental Test and Evaluation-JALN-M | C/CPFF | MIT/Lincoln Lab : Lexington, MA | 0.000 | 2.949 | Mar 2014 | 7.059 | Nov 2014 | 16.979 | Nov 2015 | - | | 16.979 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 14.769 | 4.589 | | 9.438 | | 21.992 | | - | | 21.992 | - | - | - |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2014 Cost | FY 2014 Award Date | FY 2015 Cost | FY 2015 Award Date | FY 2016 Base Cost | FY 2016 Base Award Date | FY 2016 OCO Cost | FY 2016 OCO Award Date | FY 2016 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program Management Support - BFTN | C/CPFF | BAH : San Diego, CA | 0.000 | 0.330 | Nov 2013 | 1.023 | Nov 2014 | 1.719 | Nov 2015 | - | | 1.719 | Continuing | Continuing | Continuing |
| Program Management Support JALN-M | C/CPFF | BAH : San Diego, CA | 0.000 | 0.200 | Nov 2013 | 0.200 | Nov 2014 | 0.481 | Nov 2015 | - | | 0.481 | Continuing | Continuing | Continuing |
| Program Management Support-ADNS | C/CPFF | Systems Research & Application : San Diego, CA | 0.000 | - | | - | | 0.174 | Jul 2016 | - | | 0.174 | - | 0.174 | - |
| | | **Subtotal** | 0.000 | 0.530 | | 1.223 | | 2.374 | | - | | 2.374 | - | - | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy | | | Date: February 2015 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 7 | R-1 Program Element (Number/Name)<br>PE 0204163N / *Fleet Tactical Development* | Project (Number/Name)<br>0725 / *Communication Automation* | |

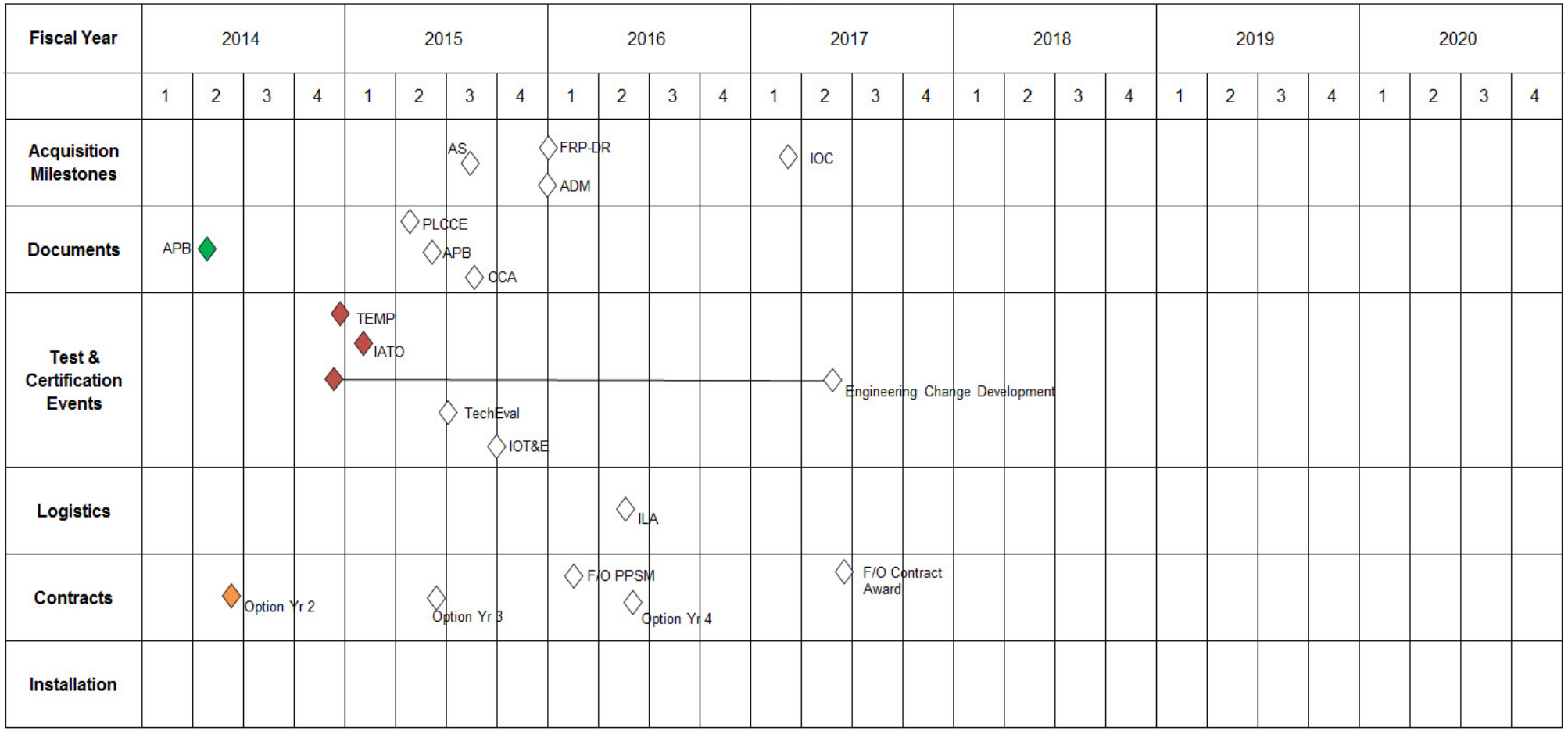
| | Prior Years | FY 2014 | | FY 2015 | | FY 2016 Base | | FY 2016 OCO | | FY 2016 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 111.577 | 22.576 | | 27.039 | | 62.867 | | - | | 62.867 | - | - | - |

**Remarks**

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

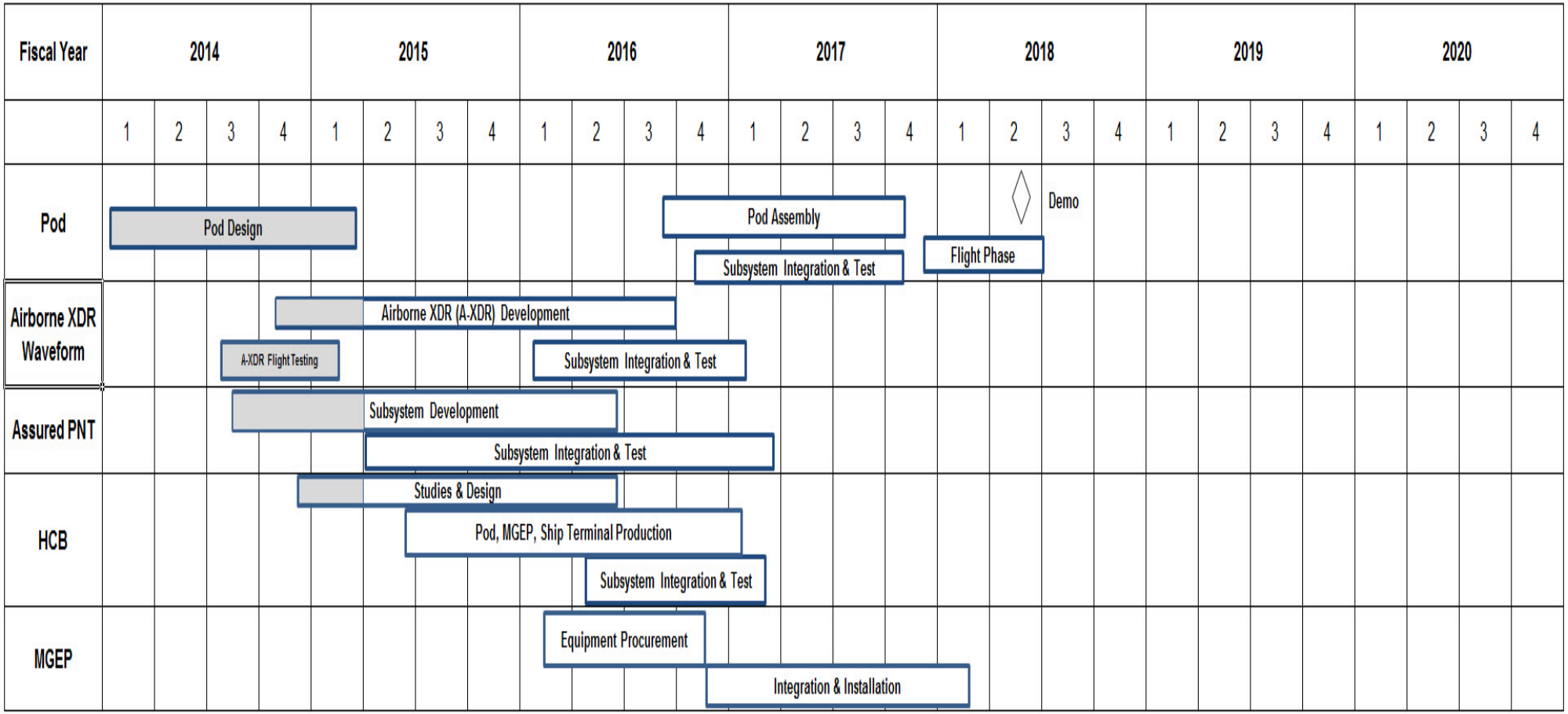
BFTN




Notes: CPD 4QFY10, MS C 4QFY11,ATO 4QFY11, FOC 4QFY22

| Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

## JALN-M Demonstration



| **Exhibit R-4, RDT&E Schedule Profile:** PB 2016 Navy | | | **Date:** February 2015 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* | |

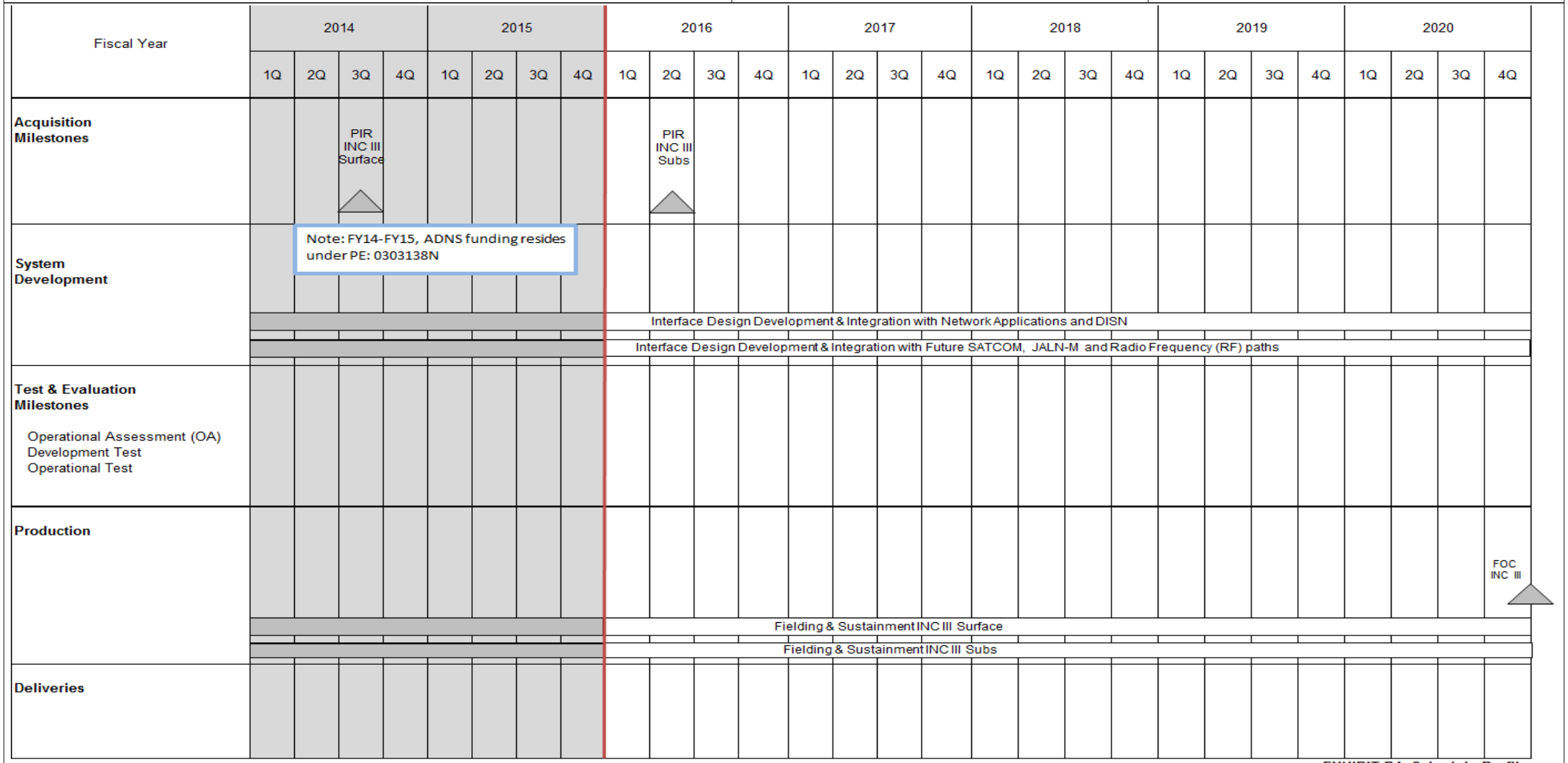



EXHIBIT R4, Schedule Profile

| Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***BFTN*** | | | | |
| Integrated Test/Operational Test (IT/OT) | 4 | 2015 | 4 | 2015 |
| Full Rate Production Decision Review (FRP DR) Baseline System | 4 | 2015 | 4 | 2015 |
| Initial Operational Capability (IOC) Baseline System | 1 | 2017 | 1 | 2017 |
| Engineering Change Development (EOL) | 4 | 2014 | 2 | 2017 |
| ***JALN-M*** | | | | |
| Pod Design | 1 | 2014 | 1 | 2015 |
| Pod Assembly | 3 | 2016 | 4 | 2017 |
| Pod Subsystem Integration & Test | 4 | 2016 | 4 | 2017 |
| Pod Flight Phase | 4 | 2017 | 3 | 2018 |
| Pod Demo | 2 | 2018 | 2 | 2018 |
| A-XDR Development | 4 | 2014 | 3 | 2016 |
| A-XDR Flight Test | 3 | 2014 | 1 | 2015 |
| A-XDR Integration & Test | 1 | 2016 | 1 | 2017 |
| PNT Development | 3 | 2014 | 2 | 2016 |
| PNT Integration & Test | 2 | 2015 | 1 | 2017 |
| HCB Studies & Design | 4 | 2014 | 2 | 2016 |
| HCB Pod, MGEP, Ship Terminal Production | 2 | 2015 | 1 | 2017 |
| HCB Integration & Test | 2 | 2016 | 1 | 2017 |
| MGEP Equipment Procurement | 1 | 2016 | 4 | 2016 |
| MGEP Integration & Installation | 4 | 2016 | 1 | 2018 |
| ***ADNS*** | | | | |
| Acquisition Milestones: ADNS: Increment III_Subs Post Implementation Review | 2 | 2016 | 2 | 2016 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy | | Date: February 2015 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0204163N / *Fleet Tactical Development* | **Project (Number/Name)**<br>0725 / *Communication Automation* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| System Development: ADNS: Increment III_Interface Design Development and Integration with Network Applications and Defense Information Systems Network (DISN) | 1 | 2016 | 4 | 2020 |
| System Development: ADNS: Increment III_Interface Design Development and Integration with SATCOM, Joint Aerial Layer Network-Maritime (JALN) and Radio Frequency (RF) paths | 1 | 2016 | 4 | 2020 |
| Production: ADNS: Increment III_Fielding and Sustainment INC III Surface | 1 | 2016 | 4 | 2020 |
| Production: ADNS: Increment III_Fielding and Sustainment INC III Submarines | 1 | 2016 | 4 | 2020 |
| Production: ADNS: Increment III_Full Operational Capability | 4 | 2020 | 4 | 2020 |