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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0204163N / 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

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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.						

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

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Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204163N / <i>Fleet Tactical Development</i>	Project (Number/Name) 0725 / <i>Communication Automation</i>
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.		

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Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0204163N / Fleet Tactical Development		Project (Number/Name) 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/						

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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.						
FY 2016 OCO Plans: N/A						
Title: Joint Aerial Layer Network -Maritime (JALN-M)		19.076	19.287	46.392	-	46.392
Articles:		-	-	-	-	-
Description: Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.						
FY 2014 Accomplishments: 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.						
FY 2015 Plans: 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.						
FY 2016 Base Plans: 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)						

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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. FY 2016 OCO Plans: N/A													
Title: Automated Digital Network System (ADNS) Articles:									- -	- -	3.447 -	- -	3.447 -
FY 2014 Accomplishments: Funding resides under PE: 0303138N FY 2015 Plans: Funding resides under PE: 0303138N FY 2016 Base Plans: 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. FY 2016 OCO Plans: 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		

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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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

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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.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0204163N / Fleet Tactical Development				Project (Number/Name) 0725 / Communication Automation					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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	-

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Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0204163N / Fleet Tactical Development				Project (Number/Name) 0725 / Communication Automation					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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 Engineering 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 Engineering 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 Engineering 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0204163N / Fleet Tactical Development				Project (Number/Name) 0725 / Communication Automation					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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 Development 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)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0204163N / Fleet Tactical Development				Project (Number/Name) 0725 / Communication Automation					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies 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)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0204163N / <i>Fleet Tactical Development</i>				Project (Number/Name) 0725 / <i>Communication Automation</i>					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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	-	-	-

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 7

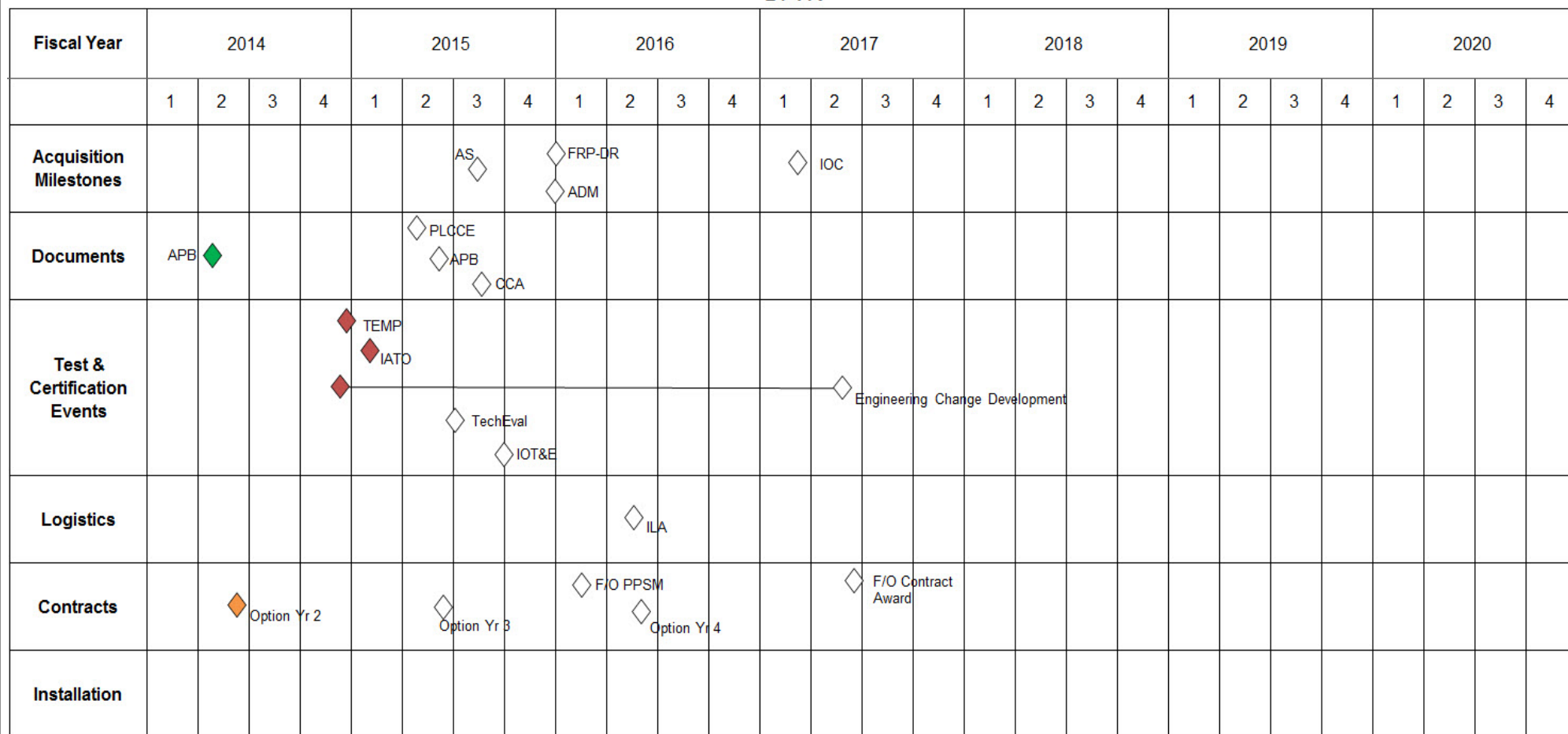
R-1 Program Element (Number/Name)

PE 0204163N / Fleet Tactical Development

Project (Number/Name)

0725 / Communication Automation

BFTN



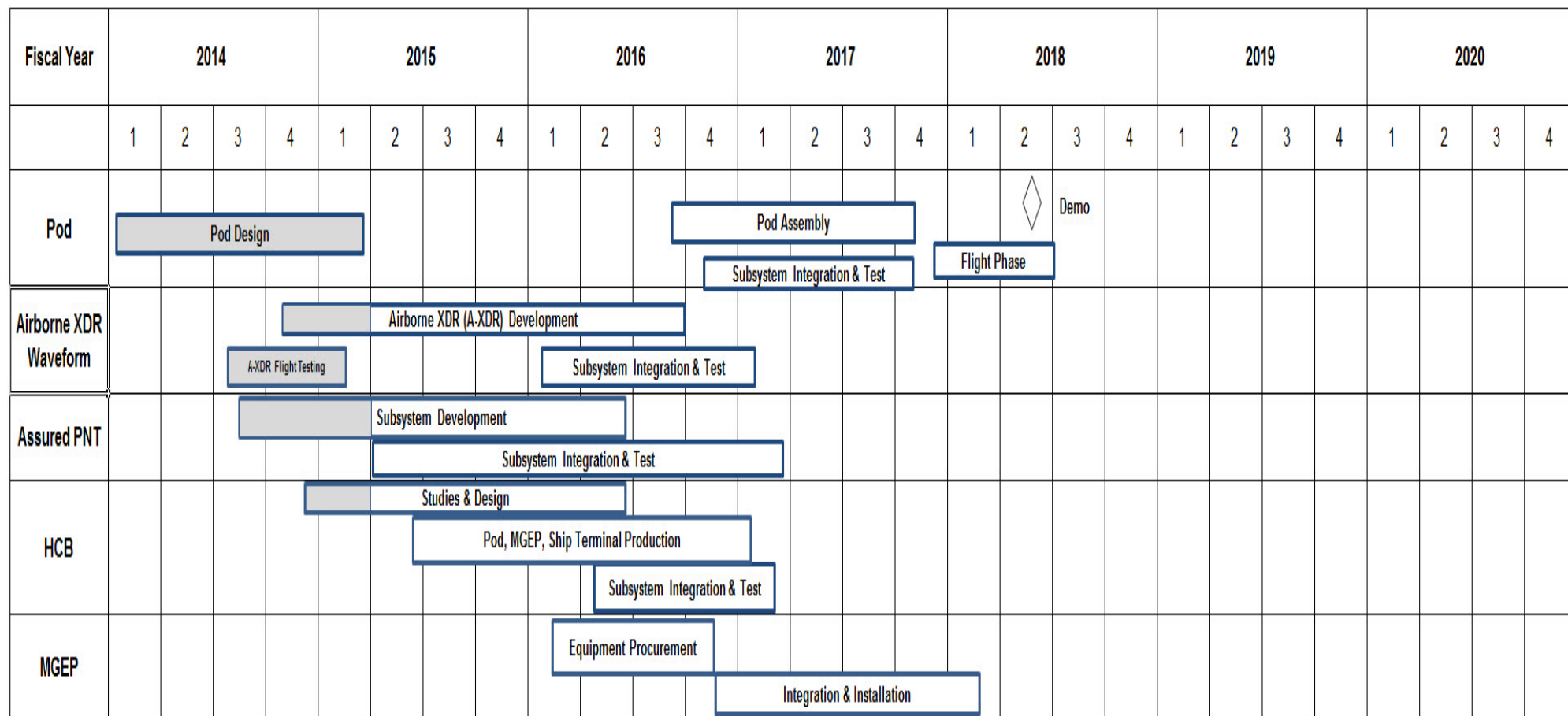
Notes: CPD 4QFY10, MS C 4QFY11,ATO 4QFY11, FOC 4QFY22

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy **Date:** February 2015

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204163N / <i>Fleet Tactical Development</i>	Project (Number/Name) 0725 / <i>Communication Automation</i>
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JALN-M Demonstration



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PE 0204163N: *Fleet Tactical Development*
Navy

R-1 Line #181

EXHIBIT R4, Schedule Profile

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

Schedule Details

Events by Sub Project	Start		End	
	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

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