Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205604N *I Tactical Data Links*							
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	667.734	162.499	121.680	149.997	-	149.997	127.611	45.526	43.839	44.796	Continuing	Continuing
2126: *ATDLS Integration*	622.313	41.465	53.028	45.079	-	45.079	34.957	23.679	25.554	26.231	Continuing	Continuing
3020: *MIDS/JTRS*	0.000	112.826	53.946	70.325	-	70.325	59.157	21.479	18.285	18.565	Continuing	Continuing
3341: *Network Tactical Common Data Link*	13.543	3.383	14.706	34.593	-	34.593	33.497	0.368	-	-	-	100.090
4022: *Other Tactical Data Link Engineering*	31.878	4.825	-	-	-	-	-	-	-	-	-	36.703

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 554

A. Mission Description and Budget Item Justification

This Program Element develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network, Command and Control Processor (C2P) and Link Monitoring and Management Tool (LMMT); and Network Tactical Common Data Link (NTCDL) Program which provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, air, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video (FMV)) across dissimilar Joint, Service, Coalition, and civil networks. The Program Element also develops and tests tactical data link capability to distribute other data types to new and existing platforms.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Operational Systems Development because it encompasses engineering and manufacturing development for upgrade of existing operational systems.

Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar Joint, Service, Coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked operations with currently fielded Common Data Link (CDL)-equipped platforms (e.g. F/ A-18, P-3, and MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, UCLASS, and Fire Scout). NTCDL is an incremental capability (surface, airborne, sub-surface, man-portable) providing a modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing horizon extension for line-of-sight sensor systems for use in time critical strike missions. NTCDL counters Anti-Access/Area Denial (A2/AD) through its relay capability, and supports Tasking Collection Processing Exploitation Dissemination (TCPED) through its ISR networking capability. Additionally, NTCDL supports Humanitarian Assistance/Disaster Relief (HA/DR) efforts through its ability to share ISR data across dissimilar Joint, Service, Coalition, and Civil organizations.

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Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially 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 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 (i.e. NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

Link 16 Network Program provides high power shipboard and shore integrated Link 16 capability through the fielding of Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ships (MOS) and MOS Modernization (MOS Mod) including transmit and receive antennas and High Power Amplifiers (HPA). JTIDS, MOS and MOS Mod utilizes the JTIDS, MIDS Low Volume Terminal (LVT), and MIDS Joint Tactical Radio System (JTRS) terminals respectively, integrates the HPA and interfaces to the shipboard antenna and Command and Control Processor (C2P) . MIDS-LVT and MIDS JTRS terminals are developed by the MIDS Program Office. JTIDS terminal is no longer in production, but is undergoing product improvement to maintain interoperability and security with MIDS-LVT and MIDS JTRS. As part of the product improvement all shipboard link 16 terminals are required to have Dynamic Network Management (DNM), Crypto Modernization (CM) and Frequency Remapping (FR). MIDS Program Office is developing additional improvements to the MIDS-LVT and MIDS JTRS terminals. The MIDS-LVT will have Link 16 Enhanced Throughput (ET) and the MIDS JTRS will have the added capability of four net Concurrent Multi-Netting (CMN) with Current Contention Receive (CCR) and Tactical Targeting Networking Technology (TTNT).

The Multifunctional Information Distribution System (MIDS) program consists of two (2) products, MIDS Low Volume Terminal (LVT) and MIDS Joint Tactical Radio System (JTRS). MIDS-LVT provides Link 16 capability to platforms that were unable to employ Joint Tactical Information Distribution System due to space and weight constraints. The MIDS-LVT effort is multinational (U.S., France, Germany, Italy, and Spain) with joint Service participation (Navy, Army, and Air Force). The Department of Defense (DoD) established the program to design, develop, and deliver low volume, lightweight tactical information system terminals for U.S. and Allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT provides interoperability with North Atlantic Treaty Organization (NATO) users, significantly increasing force effectiveness and minimizing hostile actions and friend-on-friend engagements. The terminal design is smaller, lighter, highly reliable, interoperable with JTIDS Class 2 terminal, compatible with all the participants' designated platforms, affordable, and re-configurable to individual user needs and budgets.

MIDS JTRS, designed as a Pre-Planned Product Improvement (P3I) and executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, completed qualification in the first quarter of fiscal year 2010. It facilitated the JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a 4-channel, Software Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking waveforms. In addition to the Link 16, Tactical Air Navigation, and voice functionality found in MIDS-LVT, MIDS JTRS has four channels and adds capabilities such as Link 16 Enhanced Throughput, Link 16 Frequency Re-mapping, software programmability, Cryptographic Modernization, and Four Net Concurrent

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
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Multi-Netting with Concurrent Contention Receive(CMN-4). With CMN-4, MIDS JTRS also utilizes Tactical Targeting Network Technology for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. These capabilities provide Joint Airborne Network-Tactical Edge functionality to run advanced mission applications in a cross-platform/cross-domain tactical network enterprise and the ability to simultaneously participate in four Link 16 Nets.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	169.875	151.208	127.546	-	127.546
Current President's Budget	162.499	121.680	149.997	-	149.997
Total Adjustments	-7.376	-29.528	22.451	-	22.451
• Congressional General Reductions	-	-0.028			
• Congressional Directed Reductions	-	-29.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.100	-			
• SBIR/STTR Transfer	-5.276	-			
• Program Adjustments	-	-	36.062	-	36.062
• Rate/Misc Adjustments	-	-	-13.611	-	-13.611

Change Summary Explanation

The FY 2016 funding request was reduced by $18.3 million to account for the availability of prior year execution balances.

Schedule:

ATDLS (2126):
LINK16: Link 16 Network Increment II Dynamic Network Management (DNM) (2126): Delays in replicating and identifying correction for the Dynamic Network Management (DNM) Time Slot Reallocation (TSR) issues resulted schedule slip to MOS testing and DNM Initial Operating Capability (IOC).

Link 16 Network Increment II Cryptographic Modernization (CM)/Frequency Remapping (FR) (2126): Additional electromagnetic certification (EMC) requirements resulted schedule slips to testing and acquisition milestones. Delay in the MIDS LVT BU2 schedule resulted in a delay to MOS CM/FR testing milestones. acquisition milestones, delays to the start of software development, and slips in testing schedules.

Command and Control Processor (C2P) (2126): Acquisition and engineering changes resulted in schedule slips to acquisition milestones, delays to the start of software development, and slips in testing schedules. Milestone B was removed by the MDA due to demonstrated technical maturity of the C2P Increment 3 design approach.

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Link Monitoring and Management Tool (LMMT) (2126): IOC slipped two quarters due to the availability issue of CVN platform to be used for Operational Test. CD2 BD slipped three quarters due to availability of validated requirements, in turn slipping CD2 IV&V and CD3 BD and FDR.

MIDS (3020): TTNT Full Development (terminal) is delayed one year. CDR is delayed into FY16, pushing CFAQT and Production Representative Terminal delivery (for GFAQT) into FY17. This delay impacts the Platform Integration and Test and delays delivery of the TTNT capability to the fleet by 12 months.

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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
2126: *ATDLS Integration*	622.313	41.465	53.028	45.079	-	45.079	34.957	23.679	25.554	26.231	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network, Command and Control Processor (C2P) and Link Monitoring and Management Tool (LMMT).

ATDLS Integration Program develops new and improved capabilities for Navy TDL users. The Navy Link 16 Network Increment II consists of Dynamic Network Management (DNM), Cryptographic Modernization (CM) and Frequency Remapping (FR). C2P Technology Refresh (TR) and C2P Interoperability will modernize legacy C2P processing components to address C2P component obsolescence and fleet interoperability issues. C2P is a critical component in the Aegis Ballistic Missile Defense (BMD) architecture. Modernization is a service life extension program required to sustain C2P support of Naval Integrated Air and Missile Defense (IAMD) and BMD capabilities. Link 22 development and integration into the C2P allows for standard data link communication with Coalition forces. LMMT will upgrade commercial off-the-shelf hardware and modernize software operating systems. LMMT will improve TDL performance monitoring and management in support of the Integrated Air & Missile Defense (IAMD) and Ballistic Missile Defense (BMD) missions.

Link 16 Network Increment II funds the following activities: (1) conduct DNM Developmental Test (DT)/Operational Test (OT) and correct DNM deficiencies (2) develop and implement CM and FR mandates as a product improvement into Link 16 terminals and integration into shore sites, ship (NGC2P), and current Navy Joint Tactical Information Distribution System (JTIDS) airborne platforms; (3) DT/OT of Navy platform CM/FR modifications; (4) provide product improvement for continued production capability MIDS-on-ship (MOS) Modernization (MOS Mod) and extensibility to new Tactical Data Link capabilities of shipboard Link 16 terminals.

FY 2016 Justification: Funding will provide for Link 16 DNM testing analysis and preparation for MOS DNM reviews. Conduct government testing of the JTIDS CM/ FR Engineering and Manufacturing Development units and deficiency correction. Prepare for government developmental and operational testing. The E-2C Program Office (PMA-231) will continue software modifications to the E-2C host processing required to implement the CM/FR capability. PMA 231 will prepare and conduct E-2C government testing of JTIDS CM/FR. Funding will also provide for MOS CM/FR to update the MOS software and for testing of the High-Power Amplifier (HPA) Switch necessary for integration of the MIDS LVT Block Updated 2 configuration. JTIDS and MOS CM/FR efforts are in support of NSA (NSA Policy 3-9) and Joint Chiefs of Staff mandates (Chairman of the Joint Chiefs of Staff Instruction Notice 6510.02), for the modernization of the cryptographic algorithm used in Link 16 terminals and the Department of Defense and the Department of Transportation Memorandum of Agreement (Regarding the 960-1215 MHz. Frequency Band, 31 December 2002) for the implementation of a capability to remap any 14 of the existing 51 frequencies in order to remain operable within the United States and its possessions. All Link 16 terminals are required to have this capability to support Link 16 Interoperability. To address continued production capability and extensibility to new Tactical Data Link capabilities, funding will provide for continued MOS Mod development and government testing.

Command and Control Processor (C2P) Technology Refresh (TR) funds a product improvement effort to the legacy C2P hardware components and allows C2P software to execute on modern processors, thereby extending its effective service life. Product improvement efforts will include C2P software development, hardware integration, update of the C2P development environment to promote sustainability and testing to include Developmental Test (DT)/Operational Test (OT) of the C2P TR baseline.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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C2P, Phase 3, Increment 3 is planned to include Link 22, which is a modernized replacement for Link 11, providing Beyond Line of Sight (BloS) tactical data communication system utilizing fixed frequency or frequency hopping techniques in the High Frequency (HF) (3-30 Megahertz (MHz)) and/or the Ultra High Frequency (UHF) (225-400 MHz) bands.

FY 2016 Justification: Continue C2P Technology Refresh development and Link 22 software builds.

Link Monitoring and Management Tool (LMMT) is a new system delivered on commercial off-the-shelf hardware providing gateway functions for multiple Tactical Data Link (TDL) interface, routing and display of TDL data to include Link 16 and Joint Range Extension. LMMT is also capable of performing TDL network planning, monitoring, management, data forwarding between the TDLs and providing tactical data to the Global Command and Control System for establishing the Common Operational Picture. LMMT requirements will be incrementally developed and delivered in capability drops via the Joint Capabilities Integration Development System (JCIDS) IT Box approach.

FY 2016 Justification: Funding will provide for Capability Drop 1 (CD) Afloat DT/OT leading to an Afloat Fielding Decision in FY 2017. Funding will also provide for commencement of CD 2 development.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Link 16 Network Increment II - Dynamic Network Management (DNM)	0.200	1.102	0.121	-	0.121
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed JTIDS DNM MS C Decision. Corrected critical DNM deficiences.					
FY 2015 Plans: Conduct MOS DNM operational testing. Correct critical DNM test deficiencies.					
FY 2016 Base Plans: Correct JTIDS and MOS DNM test deficiencies. Conduct government review prior to initiating DNM operational capability.					
FY 2016 OCO Plans: N/A					
Title: Link 16 Network Increment II - Cryptographic Modernization (CM) / Frequency Remapping (FR)	17.312	20.754	18.812	-	18.812
Articles:	3	2	5	-	5
FY 2014 Accomplishments: Initiated contractor qualification and certification testing of JTIDS CM/FR on Engineering Manufacturing Development (EMD) unit. Conducted JTIDS/MOS CM/FR shipboard integration effort leading to Preliminary					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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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
Design Review (PDR) and Critical Design Review (CDR). Contract awarded for (3) MOS Mod Engineering Manufacturing Development (EMD) units. Completed design and conducted MOS Mod System Functional Review (SFR). Started JTIDS CM/FR air integration effort with E-2C Program Office (PMA 231) leading to SRR and PDR. Provided Link 16 Network integration logistics support. ***FY 2015 Plans:*** Complete contractor qualification and certification of JTIDS CM/FR on Engineering Manufacturing Development (EMD) unit. Initiate government testing of JTIDS CM/FR including shipboard integration. Continue design and development work for JTIDS Air Integration of CM/FR for E-2C. Develop HPA switch necessary for integration of MIDS LVT Block Update 2 (BU2) into MOS terminal. Complete vendor development, qualification and certification of MOS Mod EMD units. Initiate government testing of MOS Mod EMD units. Continue Link 16 Network integration logistics support. ***FY 2016 Base Plans:*** Continue government testing and correct identified deficiencies in JTIDS CM/FR EMD units including shipboard integration. Test the integration of JTIDS CM/FR with the E-2C. Develop MOS CM/FR software modifications necessary for shipboard integration in support of MIDS LVT BU2 changes being performed by the MIDS Program Office. Complete logistics documentation and conduct testing on HPA switch for MOS CM/FR. Conduct government testing on MOS Modernization terminal. Continue Link 16 Network integration logistics support. ***FY 2016 OCO Plans:*** N/A					
Title: Command and Control Processor (C2P)	18.366	22.364	19.835	-	19.835
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Accomplished C2P Tech Refresh (TR) Systems Requirements Review (SRR) and continued efforts leading to a Preliminary Design Review (PDR), and Critical Design Review (CDR) in FY15. Completed Increment 3 Link 22 SRR, and continued efforts leading to PDR and CDR in FY 2015. ***FY 2015 Plans:*** Complete CDR and PDR and continue C2P TR development in preparation of Developmental Test Readiness Review/Operational Test Readiness Review (DTRR/OTRR) and Developmental Test/Operational Test (DT/OT). Conduct C2P Increment 3 Link 22 PDR and CDR, and commence Link 22 development. ***FY 2016 Base Plans:***					

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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
Complete C2P TR and Link 22 baseline development. Conduct C2P Tech Refresh and Link 22 TRR event and commence IV&V testing. ***FY 2016 OCO Plans:*** N/A					
Title: Link Monitoring and Management Tool (LMMT)	3.387	6.608	6.311	-	6.311
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Demonstrated LMMT system maturity and achieved limited deployment approval of LMMT for three CVNs. ***FY 2015 Plans:*** Conduct LMMT CD 1 IV&V and Shore DT/OT. Conduct CD 2 Build Technical Review (BTR). ***FY 2016 Base Plans:*** Conduct CD 1 Shore FDR. Complete CD 1 ship DT/OT and proceed to CD 1 Ship FDR/IOC. Conduct CD 2 BD and commence CD 2 development and testing efforts. ***FY 2016 OCO Plans:*** N/A					
Title: Joint Aerial Layer Network (JALN)	2.200	2.200	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued activities intended to improve USN TDL capabilities when in a jamming environment. ***FY 2015 Plans:*** Complete activities intended to improve USN TDL capabilities when in a jamming environment. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	41.465	53.028	45.079	-	45.079

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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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/2614: *ATDLS*	3.836	16.768	23.069	-	23.069	43.284	46.087	44.502	45.433	Continuing	Continuing

Remarks

D. Acquisition Strategy

The JTIDS Crypto Modernization (CM)/Frequency Remapping (FR) development and Low Rate Initial Production (LRIP) contract was awarded to Data Link Solutions (DLS). The associated production contract for JTIDS CM/FR will be competitively awarded after Operational Test. MOS CM/FR will be accomplished through integration of the MIDS LVT Block Upgrade 2 (BU) into the existing MOS cabinet. MOS CM/FR integration will require development of an High-Power Amplifier (HPA) bypass and update to the MOS Terminal Controller software. HPA bypass development is being conducted by SSC Pacific. The MOS Terminal Controller software will be contracted in FY16. MOS MOD contract will provide three Engineering Manufacturing Development (EMD) units for developental and operational testing. The MOS MOD contract will also provide full rate production units.

The C2P Technology Refresh and Link 22 development contract was awarded to Northrop Grumman. The C2P Technology Refresh and Link 22 production contract will be competitively awarded and will support LRIP and Full Rate production units.

The Link Monitoring and Management Tool (LMMT) capability will replace previously-fielded ADSI systems. LMMT will leverage existing Government-off-the-Shelf (GOTS) software and Commercial-off-the-Shelf (COTS) hardware. LMMT capabilities are implemented primarily in software and will be developed in capability drops (CDs). Existing GOTS software will be updated to incorporate network performance monitoring and management capabilities by SPAWAR System Center (SSC). Fielding decisions will be accomplished after CD DT/OT.

E. Performance Metrics

Link 16 Network DNM: Successfully achieve Initial Operational Capability. Successfully conduct Full Deployment Decision Review. Successfully complete Operation Test Readiness Review. Successfully complete Developmental Test / Operational Test.

Link 16 Network Cryptographic Modernization: Successful implementation of updated cryptographic algorithm as specified by National Security Agency (NSA Policy 3-9) Certification in Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ship (MOS), and MOS Modernization (MOS Mod) Link 16 terminals.

Link 16 Network Frequency Remapping: Successful implementation of a Frequency Remapping capability as specified in Department of Defense/Department of Transportation Memorandum of Agreement regarding the 960-1215 MHz Frequency Band of 31 Dec 02 in Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ship (MOS) and MOS Modernization (MOS Mod) Link 16 Terminals.

Link 16 Network Production Capability: Production Shipboard Link 16 Terminals available to meet new construction shipboard requirements.

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Command and Control Processor (C2P): Successfully achieve C2P Technology Refresh Fielding and thereby maintain operational availability.

Link 22: Successfully achieve Link 22 implementation fielding, meeting operational requirement.

LMMT: Successfully meet operational requirements and achieve Fielding Decision Reviews (FDR) for Capability Drops 1, 2 and 3.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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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
ATDLS Product Development and Integration	Various	Various : Various	363.158	-		-		-		-		-	-	363.158	363.158
Link 16 Network Development (JTIDS)	C/CPIF	DLS (BAE/ Rockwell) : Wayne, NJ	50.700	5.009	Mar 2014	5.301	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Link 16 Network Development (MOS)	C/FFP	DLS (BAE/ Rockwell) : Wayne, NJ	0.034	-		-		-		-		-	-	0.034	Continuing
Link 16 Network Development (MIDS LVT/ MIDS J)	WR	MIDS IPO : San Diego, CA	5.750	0.864	Jun 2014	-		0.300	Jun 2016	-		0.300	-	6.914	Continuing
Link 16 Network E-2C Integration	WR	PMA 231 : Pax River, MD	0.000	2.332	Jan 2014	3.564	Oct 2014	2.774	Jan 2016	-		2.774	Continuing	Continuing	Continuing
Link 16 Network Development (MOS MOD)	C/FPIF	DLS (BAE/ Rockwell) : Wayne, NJ	6.899	3.182	Feb 2014	4.206	Dec 2014	2.194	Feb 2016	-		2.194	Continuing	Continuing	Continuing
Link 16 Network Software	WR	SPAWARSYSCEN PAC : San Diego, CA	2.996	-		0.379	Jan 2015	0.408	Oct 2015	-		0.408	Continuing	Continuing	Continuing
Link 16 Network Integrated Logistics Support	C/CPFF	SeaPort-E : San Diego, CA	1.880	0.326	Oct 2013	0.346	Oct 2014	0.220	Oct 2015	-		0.220	Continuing	Continuing	Continuing
Link 16 Network JTIDS Depot Repair Bench Update	WR	Warner Robins Air Logistics Center : Warner Robins, GA	0.000	-		-		5.486	Oct 2015	-		5.486	-	5.486	-
Link 16 Network Technical Design Agents	C/CPFF	SeaPort-E : San Diego, CA	0.000	2.643	Oct 2013	-		2.195	Oct 2015	-		2.195	-	4.838	-
Link 16 Network Systems Engineering	WR	SPAWARSYSCEN PAC : San Diego, CA	43.789	2.569	Oct 2013	5.556	Oct 2014	2.322	Oct 2015	-		2.322	Continuing	Continuing	Continuing
Link 16 Network IV&V	WR	SPAWARSYSCEN PAC : San Diego, CA	1.788	0.681	Oct 2013	0.602	Oct 2014	1.196	Oct 2015	-		1.196	Continuing	Continuing	Continuing
C2P Development (Tech Refresh)	C/IDIQ	Northrop Grumman : San Diego, CA	8.955	3.997	May 2014	6.992	Feb 2015	1.500	Jun 2016	-		1.500	Continuing	Continuing	Continuing
C2P Development (Link 22)	C/IDIQ	Northrop Grumman : San Diego, CA	0.000	0.595	May 2014	2.141	Feb 2015	1.500	Jul 2016	-		1.500	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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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
C2P Development Data Terminal Set	C/IDIQ	TBD : TBD	0.000	-		1.227	Aug 2015	4.390	Jan 2016	-		4.390	-	5.617	-
C2P Development (Interoperability)	WR	SPAWARSYSCEN PAC : San Diego, CA	6.599	-		-		-		-		-	-	6.599	Continuing
C2P Systems Engineering	WR	SPAWARSYSCEN PAC : San Diego, CA	9.404	0.733	Oct 2013	7.937	Oct 2014	0.742	Oct 2015	-		0.742	Continuing	Continuing	Continuing
C2P IV&V	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	2.336	Oct 2013	2.850	Oct 2014	3.691	Oct 2015	-		3.691	Continuing	Continuing	Continuing
C2P Development & Integration	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	3.711	Oct 2013	0.332	Oct 2014	6.151	Oct 2015	-		6.151	-	10.194	-
C2P Integrated Logistics Support	C/CPFF	SeaPort-E : San Diego, CA	0.000	3.802	Oct 2013	0.457	Oct 2014	0.250	Oct 2015	-		0.250	Continuing	Continuing	Continuing
LMMT Integrated Logistics Support	C/CPFF	SeaPort-E : San Diego, CA	0.000	0.383	Oct 2013	0.300	Oct 2014	0.350	Oct 2015	-		0.350	Continuing	Continuing	Continuing
LMMT Development	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	2.636	Oct 2013	2.471	Oct 2014	2.670	Oct 2015	-		2.670	Continuing	Continuing	Continuing
LMMT Systems Engineering	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.697	Oct 2013	2.500	Oct 2014	1.000	Oct 2015	-		1.000	Continuing	Continuing	Continuing
LMMT IV&V	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	-		0.312	Oct 2014	0.667	Oct 2015	-		0.667	Continuing	Continuing	Continuing
JALN Development	WR	AFRL : W. Patterson AFB, OH	2.200	2.200	Mar 2014	2.200	Dec 2014	-		-		-	Continuing	Continuing	Continuing
		Subtotal	504.152	38.696		49.673		40.006		-		40.006	-	-	-

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
ATDLS Test and Evaluation	Various	Various : Various	65.171	-		-		-		-		-	-	65.171	65.171
Link 16 Network T&E	WR	SPAWARSYSCEN PAC : San Diego, CA	7.877	0.610	Oct 2013	1.102	Oct 2014	1.264	Oct 2015	-		1.264	Continuing	Continuing	Continuing

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 0205604N / *Tactical Data Links*	Project (Number/Name) 2126 / *ATDLS Integration*	

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
C2P T&E	WR	SPAWARSYSCEN PAC : San Diego, CA	1.951	-		-		0.150	Jan 2016	-		0.150	-	2.101	Continuing
LMMT T&E	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.450	Oct 2013	0.700	Oct 2014	1.250	Oct 2015	-		1.250	Continuing	Continuing	Continuing
		Subtotal	74.999	1.060		1.802		2.664		-		2.664	-	-	-

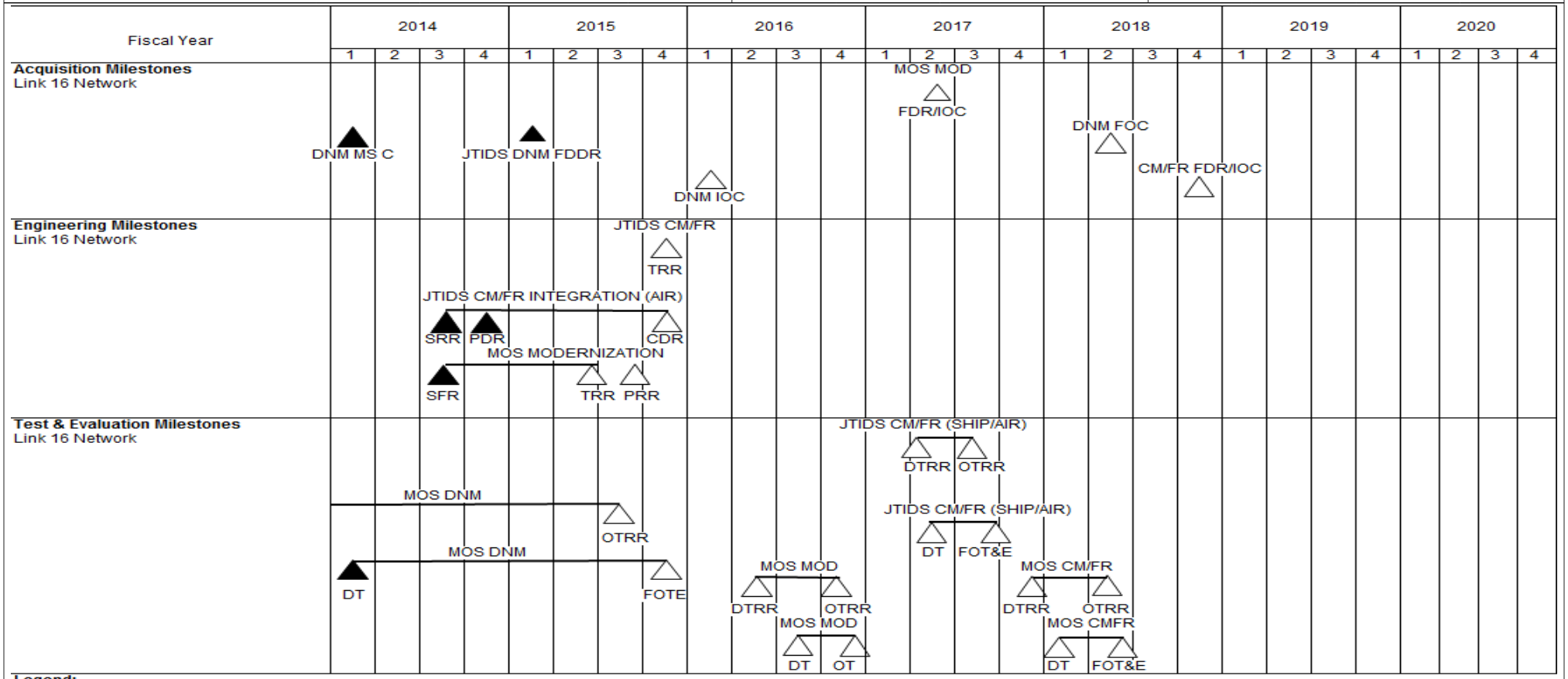
Management Services ($ in Millions)

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
ATDLS System Engineering Support	Various	Various : Various	20.177	-		-		-		-		-	-	20.177	20.177
Link 16 Network Contractor Engineering Support	C/CPFF	SeaPort-E : San Diego, CA	9.533	-		-		-		-		-	-	9.533	Continuing
Link 16 Network Government Engineering Support	WR	SPAWARSYSCEN PAC : San Diego, CA	6.278	-		-		-		-		-	-	6.278	Continuing
Link 16 Network Program Management Support	C/CPFF	SeaPort-E : San Diego, CA	2.988	0.741	Oct 2013	0.800	Oct 2014	0.573	Oct 2015	-		0.573	Continuing	Continuing	Continuing
C2P Program Management Support	C/CPFF	SeaPort-E : San Diego, CA	4.090	0.693	Oct 2013	0.428	Oct 2014	1.461	Oct 2015	-		1.461	Continuing	Continuing	Continuing
LMMT Program Management Support	C/CPFF	SeaPort-E : San Diego, CA	0.096	0.275	Oct 2013	0.325	Oct 2014	0.375	Oct 2015	-		0.375	Continuing	Continuing	Continuing
		Subtotal	43.162	1.709		1.553		2.409		-		2.409	-	-	-

	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	622.313	41.465		53.028		45.079		-		45.079	-	-	-

Remarks

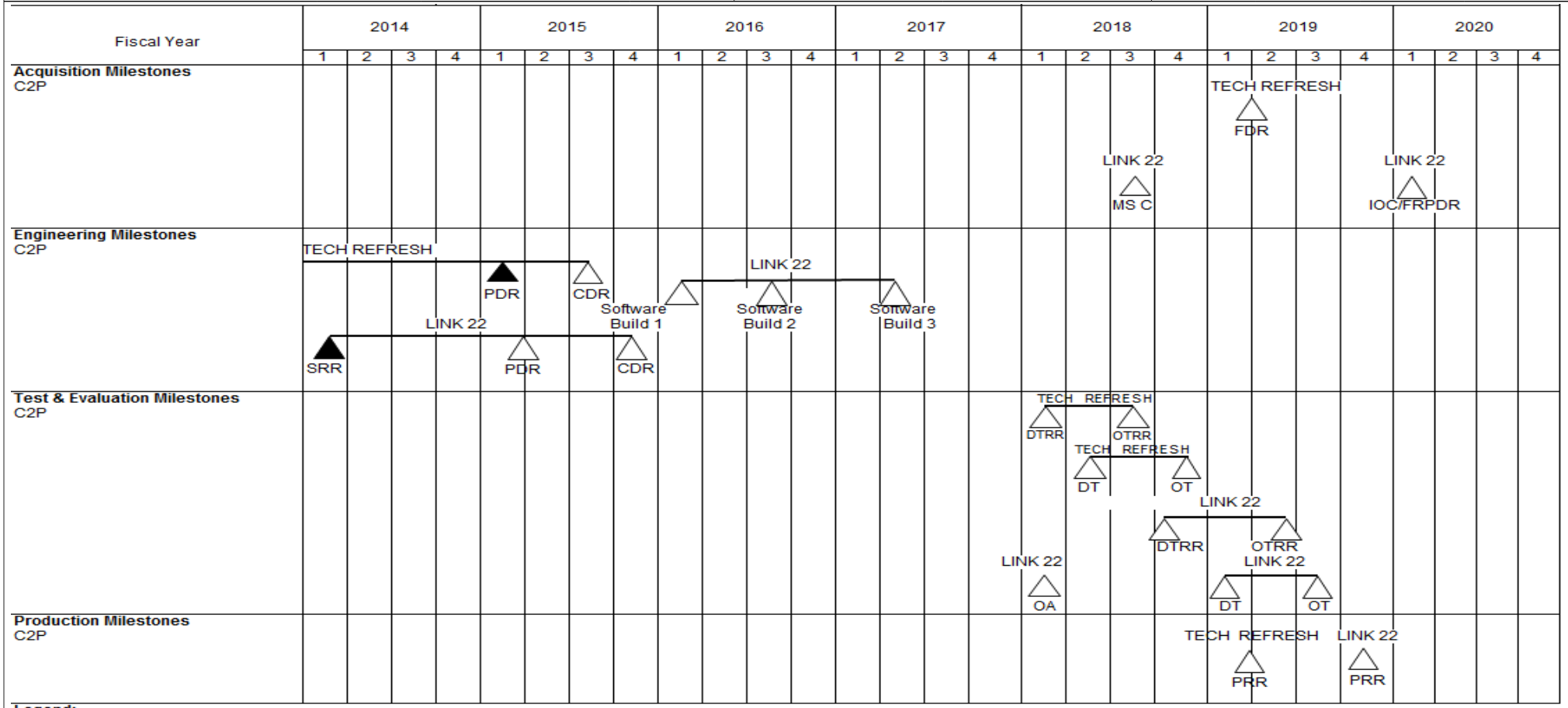
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*



Legend:

CDR - Critical Design Review
CM - Cryptographic Modernization
DT - Developmental Test
DNM - Dynamic Network Management
DTRR - Developmental Test Readiness Review
FDR - Fielding Decision Review
FOT&E - Follow-on Operational Test & Evaluation
FR - Frequency Remapping
FDDR - Full Dep. Decision Review
FOC - Full Operating Capability
IOC - Initial Operating Capability
IOT&E - Initial Operational Test & Evaluation
JTIDS - Joint Tactical Information Distribution System
MS - Milestone
MOS MOD - MOS Modernization
OT - Operational Test
OTRR - Operational Test Readiness Review
MOS - Multifunctional Info. Distribution Sys. (MIDS) On Ship (MOS)
PDR - Preliminary Design Review
PRR - Production Readiness Review
SFR - System Functional Review
SRR - System Requirements Review
TRR - Test Readiness Review

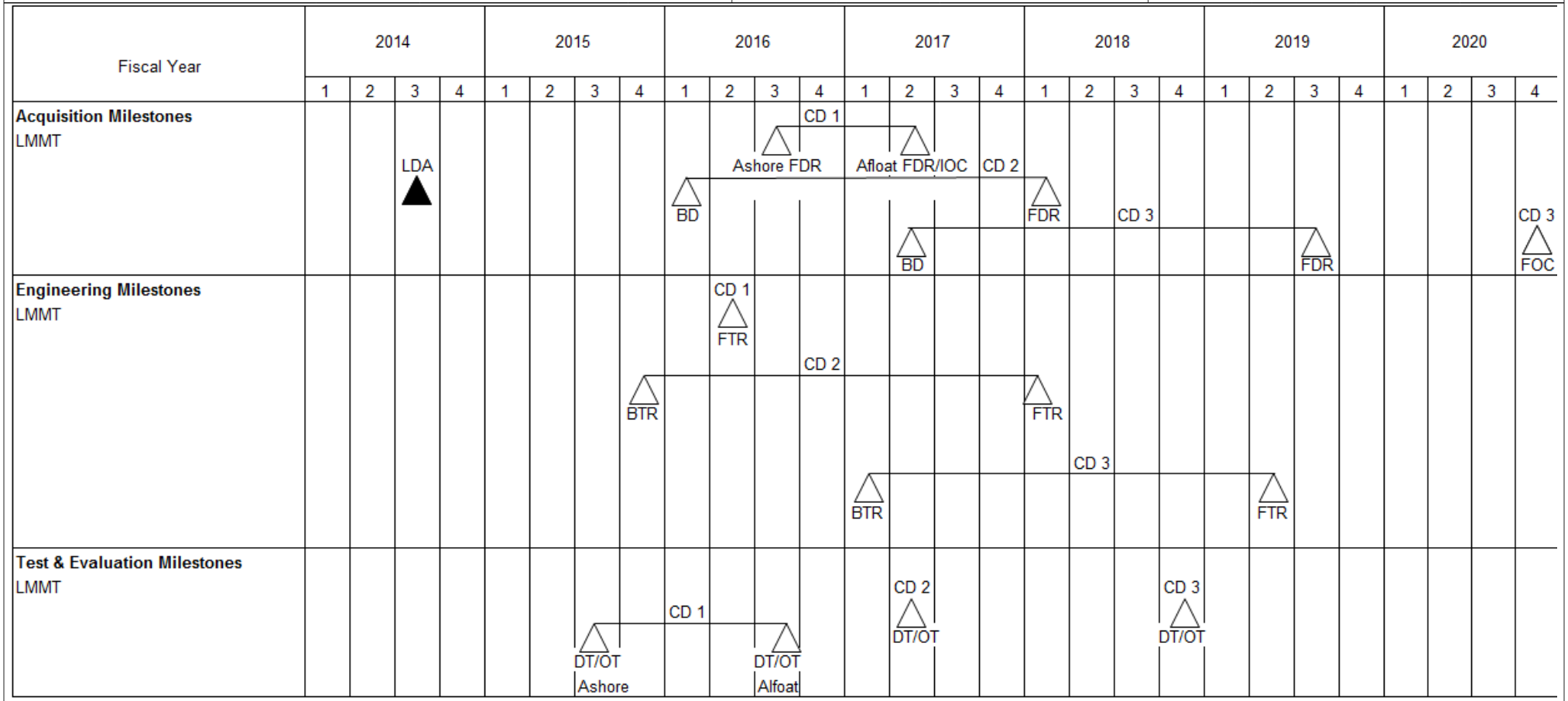
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*



Legend:

C2P - Command and Control Processor
CDR - Critical Design Review
DT - Developmental Test
DTRR - Developmental Test Readiness Review
FDR - Fielding Decision Review
FRPDR - Full Rate Production Decision Review
IOC - Initial Operating Capability
MS B - Milestone B
MS C - Milestone C
OA - Operational Assessment
OT - Operational Test
OT - Operational Test Readiness Review
PDR - Preliminary Design Review
PRR - Production Readiness Review
SRR - System Requirements Review

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*



Legend:

BD - Build Decision	CD - Capability Drop	FDR - Fielding Decision Review	FTR - Fielding Technical Review	LDA - Limited Deployment ADM
BTR - Build Technical Review	DT - Developmental Test	FOC - Full Operational Capability	IOC - Initial Operating Capability	OT - Operational Test

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2126				
C2P Link 22 System Requirements Review	1	2014	1	2014
Link 16 Network DNM Milestone C	1	2014	1	2014
Link 16 Network MOS DNM Developmental Test	1	2014	1	2014
Link 16 Network JTIDS CM/FR Integration (Air) System Requirements Review	3	2014	3	2014
Link 16 Network MOS MODERNIZATION System Functional Review	3	2014	3	2014
LMMT Limited Deployment ADM	3	2014	3	2014
Link 16 Network JTIDS CM/FR Integration (Air) Preliminary Design Review	4	2014	4	2014
C2P Link 22 Preliminary Design Review	1	2015	1	2015
C2P Tech Refresh Preliminary Design Review	1	2015	1	2015
Link 16 Network JTIDS DNM Full Developmental Decision Review	1	2015	1	2015
Link 16 Network MOS MODERNIZATION Test Readiness Review	2	2015	2	2015
Link 16 Network MOS MODERNIZATION Production Readiness Review	3	2015	3	2015
C2P Tech Refresh Critical Design Review	3	2015	3	2015
Link 16 Network MOS DNM Operational Test Readiness Review	3	2015	3	2015
LMMT CD 1 Developmental/Operational Test (Shore)	3	2015	3	2015
Link 16 Network JTIDS CM/FR Integration (Air) Critical Design Review	4	2015	4	2015
Link 16 Network JTIDS CM/FR Test Readiness Review	4	2015	4	2015
LMMT CD 2 Build Technical Review	4	2015	4	2015
C2P Link 22 Critical Design Review	4	2015	4	2015
Link 16 Network MOS DNM Follow-On Operational Test & Evaluation	4	2015	4	2015
LMMT CD 2 Build Decision	1	2016	1	2016
C2P Link 22 Software Build 1	1	2016	1	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Link 16 Network DNM Initial Operating Capability	1	2016	1	2016
LMMT CD 1 Fielding Technical Review	2	2016	2	2016
Link 16 Network MOS MOD Developmental Test Readiness Review	2	2016	2	2016
LMMT CD 1 Fielding Decision Review (Shore)	3	2016	3	2016
LMMT CD 1 Developmental/Operational Test (Afloat)	3	2016	3	2016
C2P Link 22 Software Build 2	3	2016	3	2016
Link 16 Network MOS MOD Developmental Test	3	2016	3	2016
Link 16 Network MOS MOD Operational Test	4	2016	4	2016
Link 16 Network MOS MOD Operational Test Readiness Review	4	2016	4	2016
LMMT CD 3 Build Technical Review	1	2017	1	2017
LMMT CD 3 Build Decision	2	2017	2	2017
LMMT CD 2 Developmental/Operational Test	2	2017	2	2017
LMMT CD 1 Fielding Decision Review/Initial Operating Capability (Afloat)	2	2017	2	2017
C2P Link 22 Software Build 3	2	2017	2	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Developmental Test	2	2017	2	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Developmental Test Readiness Review	2	2017	2	2017
Link 16 Network MOS MOD Fielding Decision Review/Initial Operating Capability	2	2017	2	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Follow-On Operational Test & Evaluation	3	2017	3	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Operational Test Readiness Review	3	2017	3	2017
Link 16 Network MOS CM/FR Developmental Test Readiness Review	4	2017	4	2017
LMMT CD 2 Fielding Decision Review	1	2018	1	2018
LMMT CD 2 Fielding Technical Review	1	2018	1	2018
C2P Link 22 Operational Assessment	1	2018	1	2018
C2P Tech Refresh Developmental Test Readiness Review	1	2018	1	2018
Link 16 Network MOS CM/FR Developmental Test	1	2018	1	2018
C2P Tech Refresh Developmental Test	2	2018	2	2018

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Link 16 Network DNM Full Operating Capability	2	2018	2	2018
Link 16 Network MOS CM/FR Follow-On Operational Test and Evaluation	2	2018	2	2018
Link 16 Network MOS CM/FR Operational Test Readiness Review	2	2018	2	2018
C2P Link 22 Milestone C	3	2018	3	2018
C2P Tech Refresh Operational Test Readiness Review	3	2018	3	2018
LMMT CD 3 Developmental/Operational Test	4	2018	4	2018
C2P Link 22 Developmental Test Readiness Review	4	2018	4	2018
C2P Tech Refresh Operational Test	4	2018	4	2018
Link 16 Network CM/FR Fielding Decision Review/Initial Operating Capability	4	2018	4	2018
C2P Link 22 Developmental Test	1	2019	1	2019
C2P Tech Refresh Fielding Decision Review	1	2019	1	2019
C2P Tech Refresh Production Readiness Review	1	2019	1	2019
LMMT CD 3 Fielding Technical Review	2	2019	2	2019
C2P Link 22 Operational Test Readiness Review	2	2019	2	2019
LMMT CD 3 Fielding Decision Review	3	2019	3	2019
C2P Link 22 Operational Test	3	2019	3	2019
C2P Link 22 Production Readiness Review	4	2019	4	2019
C2P Link 22 Initial Operating Capability/Full Rate Production Decision Review	1	2020	1	2020
LMMT CD3 Full Operational Capability (FOC)	4	2020	4	2020

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 0205604N / *Tactical Data Links*	Project (Number/Name) 3020 / *MIDS/JTRS*	

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
3020: *MIDS/JTRS*	-	112.826	53.946	70.325	-	70.325	59.157	21.479	18.285	18.565	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 554

Note

In accordance with the Acquisition Decision Memorandum dated 11 July 2012, the Joint Tactical Radio Systems Programs of Record (JTRS PORs) transitioned to a Military Department-managed program. MIDS transitioned to the Navy under PE 0205604N but was formerly in PE 0604280N.

A. Mission Description and Budget Item Justification

The Multifunctional Information Distribution System (MIDS) program consists of two (2) products, MIDS Low Volume Terminal (LVT) and MIDS Joint Tactical Radio System (JTRS). MIDS-LVT provides Link 16 capability to platforms that were unable to employ Joint Tactical Information Distribution System due to space and weight constraints. The MIDS-LVT effort is multinational (U.S., France, Germany, Italy, and Spain) with joint Service participation (Navy, Army, and Air Force). The Department of Defense (DoD) established the program to design, develop, and deliver low volume, lightweight tactical information system terminals for U.S. and Allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT provides interoperability with North Atlantic Treaty Organization (NATO) users, significantly increasing force effectiveness and minimizing hostile actions and friend-on-friend engagements. The terminal design is smaller, lighter, highly reliable, interoperable with JTIDS Class 2 terminal, compatible with all the participants' designated platforms, affordable, and re-configurable to individual user needs and budgets.

MIDS JTRS, designed as a Pre-Planned Product Improvement (P3I) and executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, completed qualification in the first quarter of fiscal year 2010. It facilitated the JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a 4-channel, Software Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking waveforms. In addition to the Link 16, Tactical Air Navigation, and voice functionality found in MIDS-LVT, MIDS JTRS has four channels and adds capabilities such as Link 16 Enhanced Throughput, Link 16 Frequency Re-mapping, software programmability, Cryptographic Modernization, and Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4). With CMN-4, MIDS JTRS also utilizes Tactical Targeting Network Technology for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. These capabilities provide Joint Airborne Network-Tactical Edge functionality to run advanced mission applications in a cross-platform/cross-domain tactical network enterprise and the ability to simultaneously participate in four Link 16 Nets.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: MIDS	112.826	53.946	70.325	-	70.325
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued the development and implementation of CMN-4 for MIDS JTRS. Conducted a successful Critical Design Review (CDR) and Technical Readiness Review. Began hardware and software terminal integration. Began Contractor First Article Qualification Test and Information Assurance (IA) Certification for the CMN-4 MIDS JTRS Terminal. Awarded Production Representative Terminal (PRT) contract. Awarded Lot 3 for MIDS JTRS Production. Awarded the MIDS JTRS Block Cycle 1 retrofit orders. Awarded full development effort for TTNT for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. Conducted a successful System Requirements Review and Preliminary Design Review (PDR). Began TTNT hardware and software development. Continued TTNT waveform development to incorporate version 7.0.4 into the detailed hardware design at PDR. Continued the Crypto Modernization (CM)/Frequency ReMapping(FR)/Enhanced Throughput (ET) for Block Upgrade 2 (BU2) capability and enhancement efforts for MIDS-LVT to include finalizing the detailed technical and interface information in the Item Performance Specification and the Interface Control Document. Defined the performance and interface requirements and provided engineering analysis to finalize interface with the Signal Message Processor design. Continued Link 16 CM efforts to replace the current Communications Security/Transmission Security on the SMP to extend the operational lifetime of currently fielded MIDS-LVT terminals. Established a MIDS-LVT(12) variant terminal and conducted the appropriate testing and certifications. Continued MIDS Modernization efforts to include Small Business Innovation Research transition opportunities including a Small Form Factor terminal and new waveforms such as Mutli-Function Advanced Data Link (MADL), Common Data Link (CDL), and others into the MIDS JTRS terminal. Continued MIDS systems engineering, communication security, IA and program management support.					
FY 2015 Plans: Complete the development and implementation of CMN-4 for MIDS JTRS. Begin test and evaluation and collecting Operational Assessment data. Deliver MIDS JTRS CMN-4 PRTs. Award Lot 4 for MIDS JTRS Production. Continue Block Cycle 2 (BC2) (MIDS On Ship Modernization) to include the Link 16 High Powered Amplifier. Merge the BC2 baseline with CMN-4 baseline and upgrade the Crypto Sub System for incorporation into the TTNT development and testing. Continue full development effort for TTNT for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. Continue the hardware and software development to include adding the Protected Core Processor Engineering Change Proposal to the baseline.					

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue the CM/FR/ET for BU2 capability and enhancement efforts for MIDS-LVT to include completing the hardware design and development. Complete the software design and development. Conduct CDR for BU2. Begin qualification and certification efforts and first article qualification testing. Begin software bind to incorporate Block Cycle 9 as the baseline for BU2 terminals. Continue MIDS Modernization efforts to include Small Business Innovation Research transition opportunities including a Small Form Factor terminal. Continue to incorporate new waveforms such as Mutli-Function Advanced Data Link (MADL), Common Data Link (CDL), and others into the MIDS JTRS terminal. Continue MIDS systems engineering, communication security, IA and program management support. ***FY 2016 Base Plans:*** Achieve Operational Assessment and Readiness for CMN-4 in MIDS JTRS. Conduct Full Operational Test and Evaluation. Award Lot 5 for MIDS JTRS Production. Continue full development effort for TTNT for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. Conduct Critical Design Review for TTNT. Begin integration and certification efforts to prepare for Contractor First Article Qualification Test. Continue the qualification and certification efforts and first article qualification testing for MIDS-LVT BU2. Complete the software bind to incorporate Block Cycle 9 as the baseline for BU2 terminals. Award MIDS Modernization efforts to include specification development to define the Functional and Allocated baseline requirements. Begin Link 16 waveform development fixes/updates for incorporation into the new MIDS JTRS hardware (CMN-4 and TTNT) terminals. Begin Air Dominance Assured Communications design and development in the Link 16 waveform. Continue to incorporate new waveforms such as MADL, CDL, and others into the MIDS JTRS terminal. Continue MIDS systems engineering, communication security, IA and program management support. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	112.826	53.946	70.325	-	70.325

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

MIDS JTRS development was initiated as a major modification to the MIDS-LVT using an Engineering Change Proposal to the existing production contracts. Development efforts included the Phase 2B Core terminal. The U.S. prime contractors from the MIDS-LVT program, Data Link Solutions (DLS) and ViaSat Inc., cooperatively designed and developed the Core terminal. Each prime contractor built and qualified Production Verification Terminals. The U.S. implemented a continuous competition strategy between DLS and ViaSat that will be maintained throughout the MIDS JTRS production phase. This strategy was successfully used on MIDS-LVT production. The FY16 budget supports the development and implementation of Crypto Modernization, Frequency Remapping, and Enhanced Throughput capabilities for the MIDS-LVT terminal. It also supports the development to incorporate Four Net Concurrent Multi-Netting (CMN) with Concurrent Contention Receive (CCR) (CMN-4), Tactical Targeting Network Technology (TTNT) and the TTNT waveform into MIDS JTRS. It supports the spec development for MIDS Modernization efforts and conducting future Link 16 Waveform development.

E. Performance Metrics

The MIDS-LVT and MIDS JTRS programs are employing mature, software-defined radio technologies and developing hundreds of thousands of lines of code. These software metrics are used to quantify the quality and progress of each software product's development over time. MIDS employs earned value metrics to monitor contract performance on its prime development contracts, as required.

MIDS-LVT: The 11 performance measures are: L16 Waveform Compatibility, L16 Message Standards, L16 IER; Interoperability, L16 Coded Error Message Probability, Weight/Volume, L16 JAM Resistance, L16 Voice Channels, L16 Communication Range Data, L16 Communications Range Voice, L16 Relay.
MIDS JTRS: The 15 performance measures are: L16 Waveform Compatibility, L16 Waveform Standards, L16 Coded Error Message Probability, L16 Jamming Resistance, L16 Communication Range-Data, L16 Communications Range-Voice, L16 Relay, Start-up (Terminal Single Channel), Operational Communications - Passive Synchronization, Operational Communications - Automatic Message Acknowledgement, Operational Communications - Multi-Net, Operational Communications, Crypto Control, Navigation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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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
MIDS JTRS NIFCA TTNT Full Development	C/CPFF	DLS : Cedar Rapids, IA	0.000	11.600	Aug 2014	12.000	Jan 2015	18.405	Dec 2015	-		18.405	Continuing	Continuing	Continuing
MIDS JTRS NIFCA TTNT Full Development	C/CPFF	ViaSat : San Diego, CA	0.000	12.559	Aug 2014	7.994	Mar 2015	18.405	Dec 2015	-		18.405	Continuing	Continuing	Continuing
MIDS JTRS NIFCA TTNT Waveform Development	C/CPFF	Rockwell Collins : Wayne, NJ	0.000	7.713	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
MIDS-LVT BU2 Full Development	C/CPFF	DLS : Cedar Rapids, IA	0.000	17.000	Nov 2013	1.344	Jul 2015	9.439	Dec 2015	-		9.439	Continuing	Continuing	Continuing
MIDS-LVT BU2 Full Development	C/CPFF	ViaSat : San Diego, CA	0.000	23.000	Nov 2013	6.594	Jun 2015	2.557	Dec 2015	-		2.557	Continuing	Continuing	Continuing
MIDS-LVT BU2 Software Full Development	C/CPFF	BAE : Wayne, NJ	0.000	11.400	Nov 2013	7.415	Dec 2014	5.915	Dec 2015	-		5.915	Continuing	Continuing	Continuing
MIDS-LVT LCM	C/FFP	ViaSat : San Diego, CA	0.000	0.095	Jan 2014	1.885	Dec 2014	-		-		-	-	1.980	-
MIDS JTRS CMN-4 Production Representative Terminals (PRT)	C/FFP	DLS : Cedar Rapids, IA	0.000	2.010	Dec 2013	-		-		-		-	-	2.010	-
MIDS JTRS CMN-4 Production Representative Terminals (PRT)	C/FFP	ViaSat : San Diego, CA	0.000	2.020	Dec 2013	-		-		-		-	-	2.020	-
TTNT Risk Red/Tech Dev	C/CPFF	DLS : Cedar Rapids, IA	0.000	2.045	Jan 2014	-		-		-		-	-	2.045	-
TTNT Risk Red/Tech Dev	C/CPFF	ViaSat : San Diego, CA	0.000	2.214	Jan 2014	-		-		-		-	-	2.214	-
TTNT Res Modum	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.325	Feb 2014	-		-		-		-	-	0.325	-
TTNT Res Modum	C/CPFF	ViaSat : San Diego, CA	0.000	0.210	Feb 2014	-		-		-		-	-	0.210	-
MIDS JTRS Block Cycle 1	C/CPFF	ViaSat : San Diego. CA	0.000	0.502	Nov 2013	-		-		-		-	-	0.502	-
MIDS JTRS Block Cycle 1	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.300	Nov 2013	-		-		-		-	-	0.300	-
MIDS-LVT(12) Qual/ Testing	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.089	Apr 2014	-		-		-		-	-	0.089	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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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
MIDS-LVT(12) Qual/ Testing	C/CPFF	ViaSat : San Diego, CA	0.000	0.160	Mar 2014	-		-		-		-	-	0.160	-
MIDS-LVT(12) Qual/ Testing	C/CPFF	BAE : Wayne, NJ	0.000	0.070	Apr 2014	-		-		-		-	-	0.070	-
MIDS JTRS BC1/CMN-4 Retrofit	C/CPFF	DLS : Cedar Rapids, IA	0.000	2.204	Sep 2014	-		-		-		-	-	2.204	-
MIDS JTRS BC1/CMN-4 Retrofit	C/CPFF	ViaSat : San Diego, CA	0.000	2.202	Sep 2014	-		-		-		-	-	2.202	-
MIDS JTRS Software Merge	TBD	DLS : Cedar Rapids, IA	0.000	-		2.250	Aug 2015	-		-		-	-	2.250	-
MIDS JTRS Software Merge	TBD	ViaSat : San Diego, CA	0.000	-		2.250	Aug 2015	-		-		-	-	2.250	-
MIDS Modernization	TBD	DLS : Cedar Rapids, IA	0.000	-		-		1.500	Dec 2015	-		1.500	-	1.500	-
MIDS Modernization	TBD	ViaSat : San Diego, CA	0.000	-		-		1.500	Dec 2015	-		1.500	-	1.500	-
Link 16 Waveform Development	TBD	TBD : TBD	0.000	-		-		2.000	Dec 2015	-		2.000	-	2.000	-
MIDS JTRS CMN-4	C/CPIF	DLS : Cedar Rapids, IA	0.000	2.238	Oct 2014	0.471	Jan 2015	-		-		-	-	2.709	-
MIDS JTRS CMN-4	C/CPIF	ViaSat : San Diego, Ca	0.000	-		0.729	Jan 2015	-		-		-	-	0.729	-
MIDS JTRS Block Cycle 2 HPA	C/CPFF	DLS : Cedar Rapids, IA	0.000	-		0.198	Nov 2014	-		-		-	-	0.198	-
MIDS JTRS Block Cycle 2 HPA	C/CPFF	VIaSat : San Diego, Ca	0.000	-		0.802	Nov 2014	-		-		-	-	0.802	-
MIDS JTRS/TTNT PCP IOP CSS Respin	TBD	DLS : Cedar Rapids, IA	0.000	-		2.000	Jun 2015	-		-		-	-	2.000	-
MIDS JTRS/TTNT PCP IOP CSS Respin	TBD	ViaSat : San Diego, CA	0.000	-		2.000	Jun 2015	-		-		-	-	2.000	-
Air Dominance Assured Communications L16 WF	TBD	TBD : TBD	0.000	-		-		4.000	Jan 2016	-		4.000	-	4.000	-
		Subtotal	0.000	99.956		47.932		63.721		-		63.721	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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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
MIDS-LVT BU2 Test Terminals	C/FFP	DLS : Cedar Rapids, IA	0.000	1.762	Feb 2014	-		-		-		-	-	1.762	-
MIDS-LVT BU2 Test Terminals	C/FFP	ViaSat : San Diego, CA	0.000	1.417	Feb 2014	-		-		-		-	-	1.417	-
Modeling and Simulation	WR	NAVAIR : China Lake, CA	0.000	1.275	Nov 2013	1.165	Nov 2014	2.000	Dec 2015	-		2.000	-	4.440	-
Link16 TTNT Lab, Mod/ Sim	WR	SSC : San Diego, CA	0.000	0.223	Apr 2014	0.350	Mar 2015	0.225	Nov 2015	-		0.225	-	0.798	-
MIDS JTRS CMN-4 GFAQT and LAB	WR	SSC : San Diego, CA	0.000	0.984	Jan 2014	-		0.218	Dec 2015	-		0.218	-	1.202	-
TTNT Link 16 Mod/ Simulation	MIPR	Lincoln Labs : Hanscom AFB, MA	0.000	0.370	Jan 2014	0.330	Dec 2014	0.350	Dec 2015	-		0.350	-	1.050	-
		Subtotal	0.000	6.031		1.845		2.793		-		2.793	-	10.669	-

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
Systems Engineering Support	MIPR	MITRE : Bedford, MA	0.000	2.857	Nov 2013	1.641	Dec 2014	0.500	Dec 2015	-		0.500	-	4.998	-
Government Engineering Support TTNT	WR	SSC : San Diego, CA	0.000	2.295	Nov 2013	0.794	Mar 2015	2.316	Dec 2015	-		2.316	-	5.405	-
Govt Engineering Support BU2	WR	SSC : San Diego, CA	0.000	0.138	Nov 2013	0.641	Dec 2014	0.396	Dec 2015	-		0.396	-	1.175	-
IA Cert Support	MIPR	NSA : Fort George Meade, MD	0.000	0.290	Nov 2013	0.200	Mar 2015	0.218	Nov 2015	-		0.218	-	0.708	-
Travel	WR	Travel : Pax River, MD /DC	0.000	0.059	Oct 2013	-		-		-		-	-	0.059	-
Govt Program Support NIFC-CA	WR	NAVAIR : Pax River, MD	0.000	0.239	Dec 2013	0.550	Dec 2014	0.381	Dec 2015	-		0.381	-	1.170	-
Govt Eng, Logistics and COR Support	WR	SSC : Charleston, SC	0.000	0.236	Nov 2013	-		-		-		-	-	0.236	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Management Services ($ in Millions)

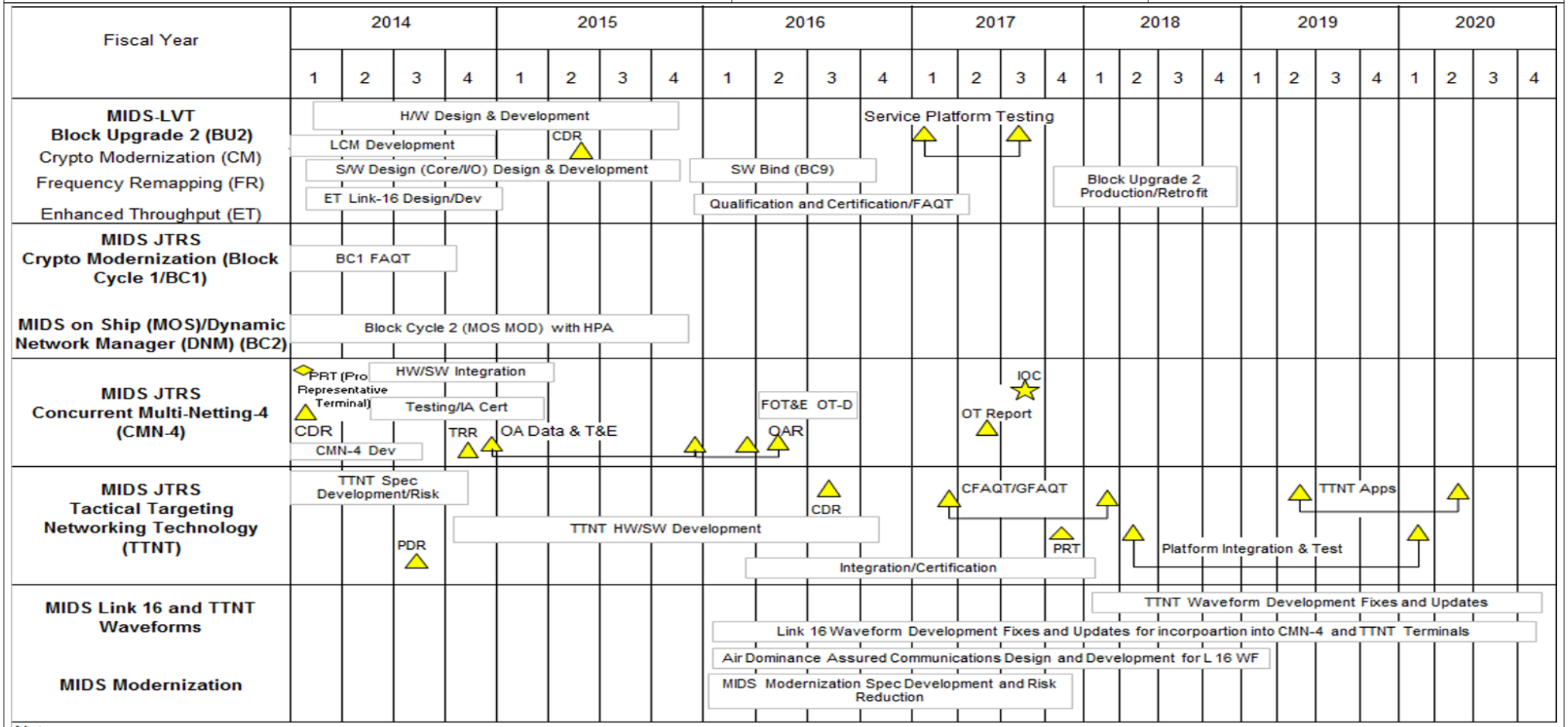
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Fees TTNT Waveform	MIPR	AFRL : Rome, NY	0.000	0.240	Feb 2014	-		-		-		-	-	0.240	-
Support TTNT Waveform	MIPR	DTIC : Ft Belvoir, VA	0.000	0.068	Jul 2014	-		-		-		-	-	0.068	-
Systems/Software Engineering Suppt	C/CPFF	G2 : San Diego, CA	0.000	0.267	Mar 2014	0.323	Mar 2015	-		-		-	-	0.590	-
MIDS IA Support for NSA	C/CPFF	BAH : McLean, VA	0.000	0.150	Apr 2014	-		-		-		-	-	0.150	-
MIDS-LVT BU2 NSA	MIPR	NSA : Fort George Meade, MD	0.000	-		0.020	Dec 2014	-		-		-	-	0.020	-
		Subtotal	0.000	6.839		4.169		3.811		-		3.811	-	14.819	-

	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
Project Cost Totals	0.000	112.826		53.946		70.325		-		70.325	-	-	-

Remarks

In accordance with the ADM dated 11 July 2012, the Joint Tactical Radio Systems Programs of Record (JTRS PORs) transitioned to a Military Department-managed program.
MIDS transitioned to the Navy under PE 0205604N but was formerly in PE 0604280N.

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*



Notes:
In accordance with the ADM dated 11 July 2012, Joint Tactical Radio Systems Programs of Record (JTRS PORs) transitioned to a Military Department-managed program. MIDS transitioned to the Navy under PE 0205604N for FY14-out but was formerly in PE 0604280N.

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MIDS				
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): LCM (LVT Crypto Modernizatoin) Development	1	2014	4	2014
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Hardware (HW) Design and Development	1	2014	4	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): BU2 Critical Design Review	2	2015	2	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Software (SW) Design and Development	1	2014	4	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Enhanced Throughput (ET) Link-16 Design and Development	1	2014	1	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Qualification and Certification/FAQT	4	2015	2	2017
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Software Bind (SW)	4	2015	4	2016
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Service Platform Testing	1	2017	3	2017
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Block Upgrade 2 Production/Retrofit	4	2017	4	2018
MIDS JTRS Crypto Modernization (Block Cycle 1/BC1): BC1 FAQT & Implementation	1	2014	4	2014
MIDS JTRS MIDS on Ship (MOS)/Dynamic Network Manager (DNM) (BC2): Block Cycle 2 with HPA	1	2014	4	2015
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): CMN-4 Development	1	2014	3	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Critical Design Review	1	2014	1	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Hardware/Software Integration	2	2014	2	2015
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Testing/IA Certification	2	2014	1	2015
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Technical Readiness Review	4	2014	4	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Production Representative Terminal	1	2014	1	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Integration and DT/T&E	4	2014	4	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): OA Data and T&E/OAR	4	2014	1	2016
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Full Operational Test and Eval OT-D	2	2016	3	2016
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): OT Report	1	2017	1	2017
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): IOC (Initial Operational Capability)	3	2017	3	2017
MIDS JTRS Tactical Targeting Networking Technology (TTNT): TTNT Spec Development/Risk Reduction	1	2014	4	2014
MIDS JTRS Tactical Targeting Networking Technology (TTNT): TTNT Hardware/ Software Development	4	2014	4	2016
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Preliminary Design Review	3	2014	3	2014
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Critical Design Review	3	2016	3	2016
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Integration/ Certification	1	2016	1	2018
MIDS JTRS Tactical Targeting Networking Technology (TTNT): CFAQT/GFAQT	1	2017	1	2018
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Production Representative Terminal	4	2017	4	2017
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Platform Integration and Test	2	2018	1	2020
MIDS JTRS Tactical Targeting Networking Technology (TTNT): TTNT Apps	2	2019	2	2020
MIDS Link 16 and TTNT Waveform: Link 16 Waveform Development Fixes and Updates	1	2016	4	2020
MIDS Link 16 and TTNT Waveform: TTNT Waveform Development Fixes and Updates	1	2018	4	2020
MIDS Link 16 and TTNT Waveform: Air Dominance Assured Communications Design and Development for L16 WF	1	2016	1	2020
MIDS Modernization: MIDS Modernization Spec Development	1	2016	1	2019

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 0205604N / *Tactical Data Links*				Project (Number/Name) 3341 / *Network Tactical Common Data Link*			
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**
3341: *Network Tactical Common Data Link*	13.543	3.383	14.706	34.593	-	34.593	33.497	0.368	-	-	-	100.090
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar Joint, Service, Coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked operations with currently fielded Common Data Link (CDL)-equipped platforms (e.g. F/ A-18, P-3, and MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, UCLASS, and Fire Scout). NTCDL is a incremental capability (surface, airborne, sub-surface, man-portable) providing a modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing horizon extension for line-of-sight sensor systems for use in time critical strike missions. NTCDL counters Anti-Access/Area Denial (A2/AD) through its relay capability, and supports Tasking Collection Processing Exploitation Dissemination (TCPED) through its ISR networking capability. Additionally, NTCDL supports Humanitarian Assistance/Disaster Relief (HA/DR) efforts through its ability to share ISR data across dissimilar Joint, Service, Coalition, and Civil organizations.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially 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 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 (i.e. NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

FY16 will focus on Contract Award activities; NTCDL development efforts (e.g. NTCDL Engineering Development Models [EDMs]; development of documentation supporting Milestone C; and efforts associated with Increment 2, to include, airborne terminal research and development of High Capacity Backbone (HCB) and air-to-air relay activities in an Anti-Access/Area Denial (A2/AD) environment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Network Tactical Common Data Link (NTCDL)	3.383	9.506	20.713	-	20.713
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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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
Description: Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion. ***FY 2014 Accomplishments:*** Completed Acquisition documentation, to include the Capability Development Document [CDD], Information Support Plan (ISP), Life Cycle Sustainment Plan (LCSP), Cyber Strategy, Cost Analysis Requirements Document (CARD) and Program Life Cycle Cost Estimate (PLCCE). Continued the development of Acquisition and Contract documentation, to include, Technology Readiness Assessment (TRA), Acquisition Strategy (AS), Acquisition Plan (AP), Should Cost, System Functional Review (SFR), System Engineering Plan (SEP), Test and Evaluation Master Plan (TEMP), NTCDL Statement of Work (SOW), Contract Deliverables Requirements Lists (CDRLs), and System Performance Specification (SPS). ***FY 2015 Plans:*** Complete Acquisition and Contract documentation, (e.g. Acquisition Program Baseline (APB), Clinger Cohen Act (CCA), Technology Readiness Assessment (TRA), Acquisition Strategy (AS), Acquisition Plan (AP), Should Costs, System Functional Review (SFR), System Engineering Plan (SEP), Test and Evaluation Master Plan (TEMP), Statement of Work (SOW), Contract Data Requirements Lists (CDRLs), and System Performance Specification (SPS), achieve Development Request for Proposal Release Decision Review (DRFPR DR) and Milestone B. Release an Request For Proposal (RFP). ***FY 2016 Base Plans:*** Award NTCDL Contract and conduct post award activities, to include Post Award Conference (PAC) and Integrated Baseline Review (IBR). Complete development of CARD and update PLCCE. Initiate preparation for NTCDL development efforts (e.g. NTCDL Engineering Development Models [EDMs]); Preliminary Design Review (PDR) and Critical Design Review (CDR) System Engineering Technical Review (SETR) events; continue development of Milestone C documentation. ***FY 2016 OCO Plans:*** N/A					
Title: Network Tactical Common Data Link (NTCDL) High Capacity Backbone (HCB)	-	5.200	13.880	-	13.880
Articles:	-	-	-	-	-
Description: Network Tactical Common Data Link (NTCDL) High Capacity Backbone (HCB) efforts will support Joint Aerial Layer Network-Maritime (JALN-M) System of Systems development, integration, and testing. Efforts					

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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
will include the development of capabilities to integrate shipboard NTCDL terminals with the HCB in an Anti-Access/Area Denial (A2/AD) environment. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Support JALN-M System of Systems development, Integration & Testing, ICD/ECR development, planned procurement for HCB terminals, and labor. Efforts will include the development of capabilities to integrate shipboard NTCDL terminals and Mobile GIG Entry Point (MGEP) with HCB system. Funding will facilitate the development of the design specification of JALN-M requirements for integration into an airborne prototype Pod and into the MGEP and shipboard systems. Funds will also be applied to the planning and execution of JALN-M demonstration scheduled in FY18. ***FY 2016 Base Plans:*** Continue to support JALN-M System of Systems development, Integration &Testing, and FY18 demo planning. Funding will be used to design, develop, and test the High Capacity Backbone (HCB) distributed system of systems (SoS) and the HCB component functional capabilities, interfaces, and supporting elements. Funds will also be applied to the planning and execution of JALN-M demonstration scheduled in FY18. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.383	14.706	34.593	-	34.593

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, 2950: *Network Tactical Common Data Link (CDL)*	-	-	0.290	-	0.290	-	14.375	25.528	20.912	Continuing	Continuing

Remarks

D. Acquisition Strategy

NTCDL will utilize the evolutionary acquisition approach for: surface, air, sub-surface, man-portable.

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E. Performance Metrics

Joint Interoperability Test Command (JITC) certification of CDL waveforms number of simultaneous links: Threshold (T) = 5, Objective (O) = 12. Data rate: minimum one 274 Megabit per second (Mbps) link (T), additional links must be 45Mbps or greater.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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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
NTCDL Product Development	C/CPIF	UNKNOWN : UNKNOWN	0.000	-		4.666	Jun 2015	16.120	Dec 2015	-		16.120	-	20.786	-
NTCDL HCB Development	C/CPIF	UNKNOWN : UNKNOWN	0.000	-		5.200	Jun 2015	13.880	Dec 2015	-		13.880	-	19.080	-
		Subtotal	0.000	-		9.866		30.000		-		30.000	-	39.866	-

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
NTCDL Systems Engineering	WR	SPAWARSYSCTR : San Diego, CA	4.000	1.601	Oct 2013	2.160	Oct 2014	1.384	Oct 2015	-		1.384	-	9.145	-
NTCDL Systems Engineering	C/IDIQ	SPAWARSYS : San Diego, CA	5.000	0.125	Sep 2014	1.130	Sep 2015	1.353	Jul 2016	-		1.353	-	7.608	-
		Subtotal	9.000	1.726		3.290		2.737		-		2.737	-	16.753	-

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
NTCDL Test and Evaluation	WR	SPAWARSYSCTR : San Diego, CA	2.140	1.127	Oct 2013	0.750	Oct 2014	0.898	Oct 2015	-		0.898	-	4.915	-
NTCDL Test and Review	MIPR	JITC : Fort Huachuca, AZ	0.200	-		0.250	Dec 2014	0.299	Dec 2015	-		0.299	-	0.749	-
NTCDL Waveform certification	MIPR	COMOPTEVFOR : Norfolk, VA	0.200	-		0.050	Dec 2014	0.060	Dec 2015	-		0.060	-	0.310	-
		Subtotal	2.540	1.127		1.050		1.257		-		1.257	-	5.974	-

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 0205604N / *Tactical Data Links*	Project (Number/Name) 3341 / *Network Tactical Common Data Link*	

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	WR	SPAWARSYSCTR : San Diego, CA	1.000	-		-		-		-		-	-	1.000	-
Program Management Support	C/CPFF	BAH : San Diego, CA	1.003	0.530	Dec 2013	0.500	Dec 2014	0.599	Dec 2015	-		0.599	-	2.632	-
		Subtotal	2.003	0.530		0.500		0.599		-		0.599	-	3.632	-

	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	13.543	3.383		14.706		34.593		-		34.593	-	66.225	-

Remarks

Issue Paper submitted to realign $1.7M FY16 and $1.5M FY17 from OMN (1C2C) to RDT&E (3341).

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3341 / *Network Tactical Common Data Link*

NTCDL

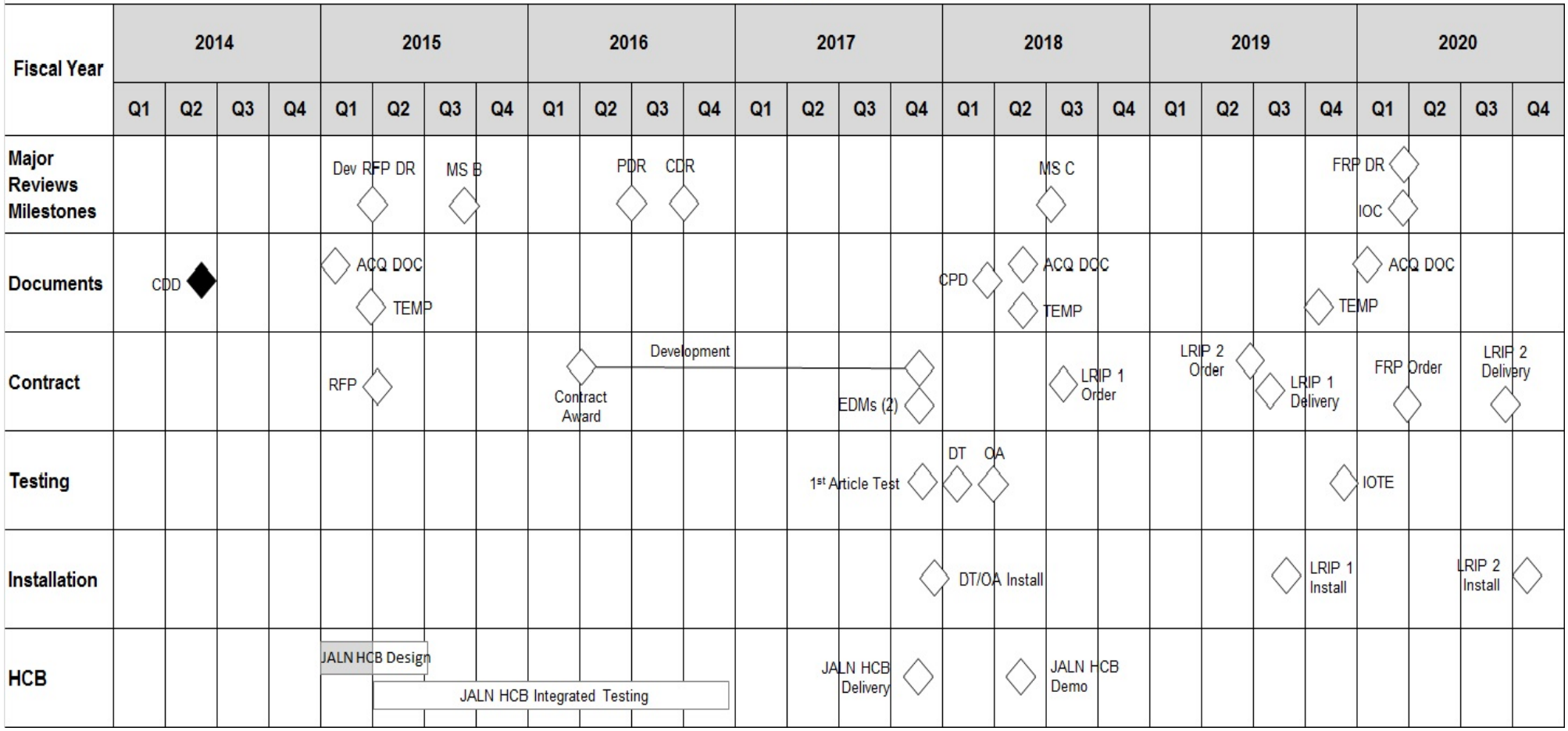

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3341 / *Network Tactical Common Data Link*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3341				
NTCDL - Capabilities Development Document (CDD)	2	2014	2	2014
JALN HCB Design	1	2015	2	2015
NTCDL - Development Request for Proposal Decision Review (Dev RDP DR)	2	2015	2	2015
JALN HCB Integrated Testing	2	2015	4	2016
NTCDL - Milestone B	3	2015	3	2015
NTCDL - Contract Award	2	2016	2	2016
NTCDL - Development Contract	2	2016	4	2017
NTCDL - Preliminary Design Review (PDR)	3	2016	3	2016
NTCDL - Critical Design Review (CDR)	4	2016	4	2016
JALN HCB Delivery	4	2017	4	2017
NTCDL - Capability Production Document (CPD)	1	2018	1	2018
JALN HCB Demo	2	2018	2	2018
NTCDL - First Article Test	4	2017	4	2017
NTCDL - Development Testing (DT)	1	2018	1	2018
NTCDL - Operational Assessment (OA)	2	2018	2	2018
NTCDL - Milestone C	3	2018	3	2018
NTCDL - Low Rate Initial Production (LRIP) Order	3	2018	3	2018

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 0205604N / *Tactical Data Links*				Project (Number/Name) 4022 / *Other Tactical Data Link Engineering*			
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**
4022: *Other Tactical Data Link Engineering*	31.878	4.825	-	-	-	-	-	-	-	-	-	36.703
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Adjunct Capability Demo (ACD) is a proof-of-concept that will demonstrate the capability to distribute real-time ballistic missile track data over tactical data links. The effort requires the procurement, installation, integration, and test of software onto an existing platform. Radar software will be developed and tested to provide real-time ballistic missile track updates to the tactical data link management system.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Adjunct Capability Demo Product Development	1.172	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Completed software testing and hardware installation. - Completed limited regression testing and software fixes.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Title: Adjunct Capability Demo Support	1.695	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Supported target scenario DIGISIM development and data analysis.					
FY 2015 Plans: N/A					
FY 2016 Base Plans:					

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 OCO Plans:*** N/A					
Title: Adjunct Capability Demo Test and Evaluation	1.935	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Completed Target Scenario DIGISIM. - Completed Land-Based Link Test regression and a subsequent end-to-end Link Exercise. - Successfully executed Operation Polar Bear to demonstrate proof-of-concept. - Completed issue identification and regression analysis. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Adjunct Capability Demo Management Services	0.023	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Program planning, assessment of technical alternatives, risk identification and mitigation. - Cost and schedule development and execution. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.825	-	-	-	-

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Execute software development, integration and testing under existing contracts.

E. Performance Metrics

Successfully develop and test system to prove concept to distribute real-time ballistic missile data in real-time over tactical data links on a Fleet platform. System performance metrics under development.

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 0205604N / *Tactical Data Links*	Project (Number/Name) 4022 / *Other Tactical Data Link Engineering*	

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
ACD Development and Integration	SS/CPFF	Raytheon : Sudbury, MA	26.206	1.172	May 2014	-		-		-		-	-	27.378	27.529
ACD Development and Integration	WR	SPAWAR : San Diego, CA	0.580	-		-		-		-		-	-	0.580	-
		Subtotal	26.786	1.172		-		-		-		-	-	27.958	-

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
Systems Engineering Support	C/CPFF	JHU/APL : Laurel, MD	1.208	0.260	Aug 2014	-		-		-		-	-	1.468	-
Systems Engineering Support	WR	SPAWAR : San Diego, CA	0.735	-		-		-		-		-	-	0.735	-
Systems Engineering Support	MIPR	MIT/LL : Hanscom, MA	0.420	0.185	Jan 2014	-		-		-		-	-	0.605	-
Systems Engineering Support	C/CPAF	Systems, Planning and Analysis : Alexandria, VA	0.337	-		-		-		-		-	-	0.337	-
Systems Engineering Support	MIPR	NSWC/PHD White Sands : Port Hueneme, CA	0.000	1.250	Apr 2014	-		-		-		-	-	1.250	-
		Subtotal	2.700	1.695		-		-		-		-	-	4.395	-

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
ACD Test	SS/CPFF	Raytheon : Subury, MA	2.000	1.935	May 2014	-		-		-		-	-	3.935	4.000
ACD Test	WR	SPAWAR : San Diego, CA	0.300	-	Aug 2014	-		-		-		-	-	0.300	-

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 0205604N / *Tactical Data Links*	Project (Number/Name) 4022 / *Other Tactical Data Link Engineering*	

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
		Subtotal	2.300	1.935		-		-		-		-	-	4.235	-

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	C/CPAF	Systems, Planning and Analysis : Alexandria, VA	0.062	-		-		-		-		-	-	0.062	-
TRAVEL	Allot	PEOIWS2I : Washington, DC	0.030	0.010	Feb 2015	-		-		-		-	-	0.040	-
Program Management Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.013	Feb 2015	-		-		-		-	-	0.013	-
		Subtotal	0.092	0.023		-		-		-		-	-	0.115	-

	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
Project Cost Totals	31.878	4.825		-		-		-		-	-	36.703	-

Remarks

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 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

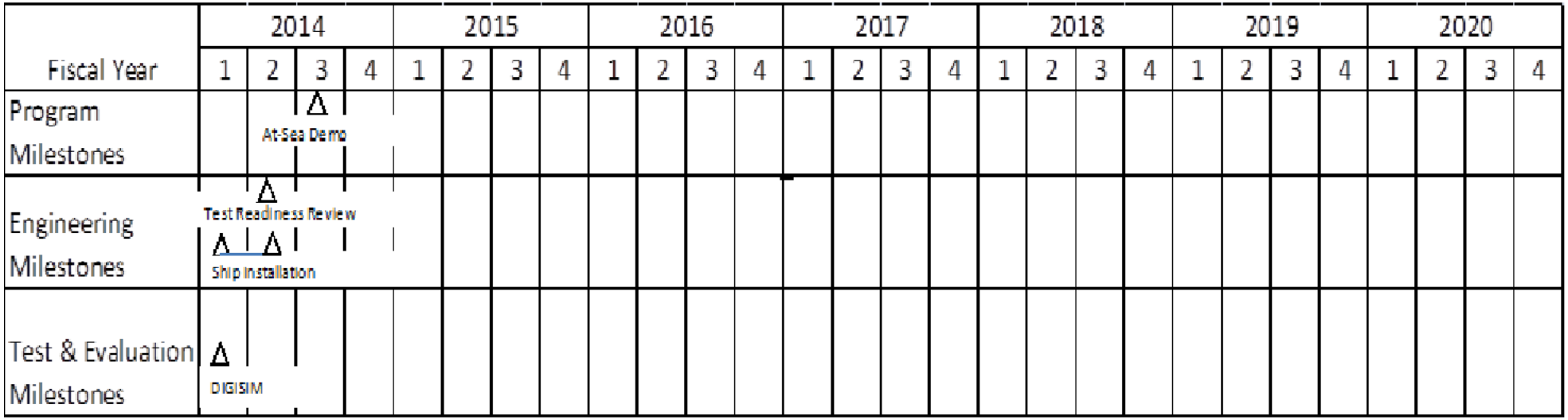

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4022				
Digital Simulation (DIGISIM)	1	2014	1	2014
Ship Installation	1	2014	2	2014
Test Readiness Review	2	2014	2	2014
At-Sea Demo	3	2014	3	2014