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 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604777N *I Navigation/Id System*							
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	1,248.137	41.735	29.504	32.469	-	32.469	35.877	30.651	59.712	60.914	Continuing	Continuing
0253: *Nav & Electro-Optical Supt*	54.974	8.657	6.636	7.257	-	7.257	7.441	7.341	36.569	37.287	Continuing	Continuing
0676: *Improve ID Development*	29.958	2.277	1.612	5.404	-	5.404	5.432	2.338	2.395	2.448	Continuing	Continuing
0921: *NAVSTAR GPS Equipment*	999.997	16.104	18.011	17.159	-	17.159	18.653	18.623	18.830	19.222	Continuing	Continuing
1253: *Combat Ident System*	163.208	14.697	3.245	2.649	-	2.649	4.351	2.349	1.918	1.957	Continuing	Continuing

A. Mission Description and Budget Item Justification

Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. The Photonics Imaging System (0253) is a non-hull penetrating replacement for existing optical periscopes. The Photonics Imaging System exploits a wide portion of the electro-magnetic spectrum utilizing advanced Electro-Optic/thermal imaging, and communications intercept/Electronic Warfare Support (ES). The Integrated Submarine Imaging System (ISIS) (0253) is a back fit system to integrate all imaging capabilities on existing submarine classes. The Combat Identification System (CIS) project (1253) for Mark XIIA, and Improved Identification Development (0676) for AN/UPX-29(V), covers the Mark XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and North Atlantic Treaty Organization (NATO) interoperable. Per OSD direction, NATO participation is encouraged and performance data is exchanged to ensure the opportunity for interoperability with allied identification systems is maximized. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems).

NAVSTAR Global Positioning System (GPS) project (0921) is a space-based positioning, navigation and timing (PNT) system that provides authorized users with secure, worldwide, all weather, three dimensional position, velocity and precise time data. Navigation Sensor System Interface (NAVSSI) is a system that provides an integrated navigation message structure for network distribution to support combat, command and control, information and other mission critical capabilities. Navy Air and Sea Navigation Warfare (NAVWAR) are major elements of the GPS program. NAVWAR's mission is to provide continued access to GPS information in a denied environment. NAVWAR accomplishes this through the use of enhanced user equipment (UE). GPS modernization addresses the Navy's future integration of GPS Joint Program Office (JPO) Modernized User Equipment (MUE) products being developed that will enable the use of new signals in space. The GPS - based Positioning, Navigation, and Timing (PNT) Service (GPNTS) system is being developed to replace stand-alone AN/WRN-6 receivers and integrated NAVSSI systems. Additionally, future capability will migrate toward a Common Computing Environment (CCE) such as Consolidated Afloat Networks Enterprise Services (CANES), and provide a path for the integration of advanced navigation systems and sensors. NAVSTAR GPS supports Anti-Access/Area Denial (A2AD) by providing Assured Positioning, Navigation and Timing (A-PNT) capability to C4ISR and combat systems in standalone and networked architectures throughout the air and maritime domains. GPNTS will support the Joint Aerial Layer Network-Maritime (JALN-M). JALN-M is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially A2AD.

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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604777N *I Navigation/Id System*

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under System Development and Demonstration because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	47.428	29.504	31.959	-	31.959
Current President's Budget	41.735	29.504	32.469	-	32.469
Total Adjustments	-5.693	-	0.510	-	0.510
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.000	-			
• SBIR/STTR Transfer	-0.693	-			
• Program Adjustments	-	-	-22.639	-	-22.639
• Rate/Misc Adjustments	-	-	23.149	-	23.149

Change Summary Explanation

The FY 2016 funding request was reduced by $2.0 million to account for the availability of prior year execution balances.

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 0253 / *Nav & Electro-Optical Supt*	

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
0253: *Nav & Electro-Optical Supt*	54.974	8.657	6.636	7.257	-	7.257	7.441	7.341	36.569	37.287	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The navigation and electro-optical (E-O) support program develops submarine E-O and imagery systems and equipment that will improve submarine imaging capability in the areas of: ship safety, Intelligence, Surveillance and Reconnaissance (ISR), and tactical control (contact management in the littorals). The Department of the Navy established the Integrated Submarine Imaging System (ISIS) to rapidly field the Type 18 periscope, Periscope Acquisition, Tracking, and Ranging with Improved Observation Techniques (PATRIOT) rangefinder, Type 8 Mod 4 Infra-Red (IR) periscope systems, and integrate existing periscope imagery systems into a single imaging system for installation on board SSN 688 class and SEAWOLF class submarines. The ISIS baseline also includes the Imaging System with the Photonics Mast (PM) and Low Profile Photonics Mast (LPPM) onboard VIRGINIA and Photonics Mast Variant (PMV) onboard SSGN class submarines. The PM, LPPM, and PMV design exploit a wide portion of the electro-magnetic spectrum through advanced E-O and thermal imaging and Electronic Warfare Support (ES)/communications intercept. The Common Submarine Imaging System (CSIS) capability development document (CDD), that covers both ISIS and Legacy Imaging systems was approved 22 Dec, 2011. The CDD is used to fully integrate the ISIS program of record into the submarines force rapid Technical Insertion/Advanced Processor Build (TI/APB) process and to incorporate Fleet-endorsed requirements such as the LPPM.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: ISIS and Photonics common software and hardware capabilities development and obsolescence.	6.872	4.774	6.659	-	6.659
Articles:	-	-	-	-	-
FY 2014 Accomplishments: ISIS Technical Insertion (TI) development for LOS ANGELES, SEAWOLF, and VIRGINIA classes including hardware and software modifications for integration of LPPM into ISIS.					
FY 2015 Plans: ISIS Technical Insertion (TI) development for LOS ANGELES, SEAWOLF, and VIRGINIA classes including hardware and software modifications for integration of LPPM into ISIS.					
FY 2016 Base Plans: ISIS Technical Insertion (TI) development for LOS ANGELES, SEAWOLF, and VIRGINIA classes. TI and Advanced Processor Build (APB) productionization efforts include incorporation of significant capability increases over previous TIs including Image Fusion, Auto-detection and Image Tracker Algorithms. FY 2016 efforts also include improvements to system software reliability for increased ISIS Operational Availability (Ao).					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0253 / *Nav & Electro-Optical Supt*

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					
Title: Imaging Systems Test Efforts.	1.035	1.112	0.598	-	0.598
Articles:	-	-	-	-	-
FY 2014 Accomplishments: TI-12/APB 11 Testing.					
FY 2015 Plans: TI-14/APB 13 Testing					
FY 2016 Base Plans: TI-16/APB 15 Testing. There is no scheduled TI OT test in FY16. The reduced testing activity drives the lower FY16 costs.					
FY 2016 OCO Plans: N/A					
Title: Low Profile Photonics Mast	0.750	0.750	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completion of LPPM Baseline Prototype Design					
FY 2015 Plans: Completion of LPPM Production Baseline Design					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	8.657	6.636	7.257	-	7.257

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
• SCN/201300: *Photonics Mast*	37.268	38.008	38.774	-	38.774	39.560	40.363	41.170	42.076	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0253 / *Nav & Electro-Optical Supt*

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/0831: *Sub Periscopes & Imaging Equip.*	45.704	57.221	63.109	-	63.109	60.343	54.746	67.918	72.482	Continuing	Continuing
• RDT&E/0604558N: *VIRGINIA Class Design Development*	3.200	4.500	3.000	-	3.000	3.000	3.051	3.112	3.174	Continuing	Continuing
• RDT&E/0603562N: *Advanced Submarine Support Equipment (ASSEP)*	3.807	3.343	4.103	-	4.103	4.052	4.161	4.415	4.733	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Acquisition Strategy for AN/BVS-1 Photonics Mast Program (PMP) is dated 24 Sept 2001. The PMP provides for the development and acquisition of a non-hull penetrating submarine electronic imaging system for VIRGINIA Class submarines. The Acquisition Strategy for Integrated Submarine Imaging System (ISIS) is dated 07 Jul 2003. The Aquisition Program Baseline Agreement for ISIS Advanced Processor Builds 11, 13 and 15 is dated 07 Mar 2013. The Single Acquistion Management Plan (SAMP) for the LPPM is dated 01 Jul, 2013. The ISIS will provide mission critical, all weather, visual, and electronic search, digital image management, indication, warning, and platform architecture interface capabilities for SSN 688, SSN 21, SSN 774 and SSGN class submarines.

E. Performance Metrics

Successful application of system engineering processes. Design and development of improvements.

The RDD program goal is to respond to urgent operational needs within 30 days and provide for rapid development and fielding of prototype solutions within 270 days.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 0253 / *Nav & Electro-Optical Supt*	

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
Hardware Development	WR	NUWC : Newport, RI	11.567	0.668	Oct 2013	-		-		-		-	Continuing	Continuing	Continuing
Software Development	C/CPIF	Lockheed Martin : Manassas, VA	12.763	1.133	Mar 2014	1.939	Mar 2015	3.572	Mar 2016	-		3.572	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC : Newport, RI	13.910	0.883	Oct 2013	0.738	Oct 2014	0.744	Oct 2015	-		0.744	Continuing	Continuing	Continuing
Hardware Development	C/CPIF	Lockheed Martin : Manassas, VA	3.980	1.094	Mar 2014	2.055	Mar 2015	2.301	Mar 2016	-		2.301	Continuing	Continuing	Continuing
Hardware Development	C/CPFF	3 Phoenix : Chantilly, VA	6.062	3.800	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
Hardware Development	C/CPFF	TBD : TBD	0.000	-	Jun 2014	0.750	Jun 2015	-		-		-	Continuing	Continuing	Continuing
		Subtotal	48.282	7.578		5.482		6.617		-		6.617	-	-	-

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
Development Test & Evaluation	WR	NUWC : Newport, RI	5.882	0.887	Oct 2013	0.291	Oct 2014	0.340	Oct 2015	-		0.340	Continuing	Continuing	Continuing
Development Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	0.404	0.148	Oct 2013	0.080	Oct 2014	0.258	Oct 2015	-		0.258	Continuing	Continuing	Continuing
Development Test & Evaluation	C/CPFF	Lockheed Martin : Manassas, VA	0.000	-		0.741	Mar 2015	-		-		-	-	0.741	-
		Subtotal	6.286	1.035		1.112		0.598		-		0.598	-	-	-

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
Travel	WR	NAVSEA : Washington, DC	0.406	0.044	Oct 2013	0.042	Oct 2014	0.042	Oct 2015	-		0.042	Continuing	Continuing	Continuing
		Subtotal	0.406	0.044		0.042		0.042		-		0.042	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 0253 / *Nav & Electro-Optical Supt*	

	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	54.974	8.657		6.636		7.257		-		7.257	-	-	-

Remarks

Hardware Development Performing Activity TBD. Competitive contract planned for June 2015 award.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0253 / *Nav & Electro-Optical Supt*

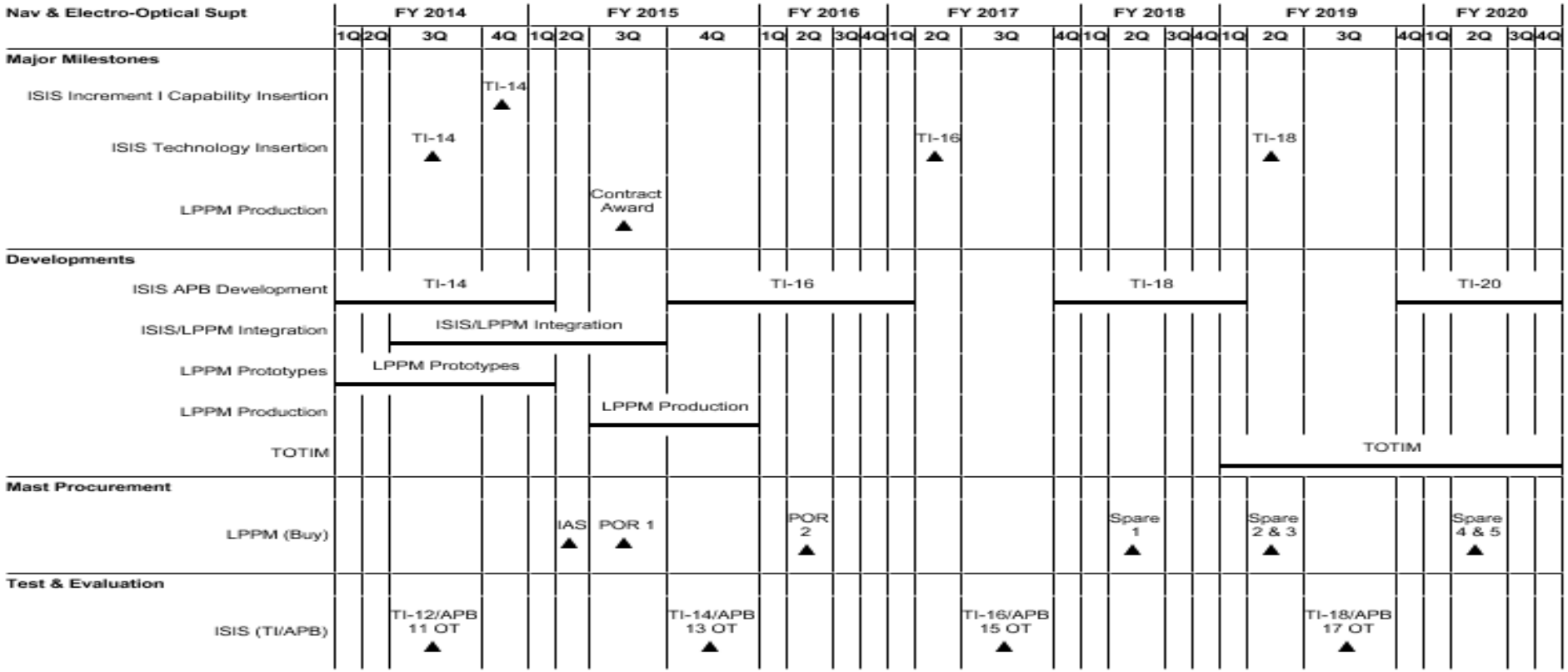

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0253 / *Nav & Electro-Optical Supt*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Nav & Electro-Optical Supt				
Major Milestones: ISIS Increment I Capability Insertion: ISIS Increment I Capability Insertion Fielding (TI-14)	4	2014	4	2014
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-14)	3	2014	3	2014
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-16)	2	2017	2	2017
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-18)	2	2019	2	2019
Major Milestones: LPPM Production: Contract Award	3	2015	3	2015
Developments: ISIS APB Development: Development: ISIS TI-14	1	2014	1	2015
Developments: ISIS APB Development: Development: ISIS TI-16	4	2015	1	2017
Developments: ISIS APB Development: Developments: ISIS TI-18	4	2017	1	2019
Developments: ISIS APB Development: Developments: ISIS TI-20	4	2019	4	2020
Developments: ISIS/LPPM Integration: ISIS/LPPM Integration	3	2014	3	2015
Developments: LPPM Prototypes: LPPM Protoypes	1	2014	1	2015
Developments: LPPM Production: LPPM Production	3	2015	4	2015
Developments: TOTIM: TOTIM	1	2019	4	2020
Mast Procurement: LPPM (Buy): IAS	2	2015	2	2015
Mast Procurement: LPPM (Buy): POR 1	3	2015	3	2015
Mast Procurement: LPPM (Buy): POR 2	2	2016	2	2016
Mast Procurement: LPPM (Buy): Spare 1	2	2018	2	2018
Mast Procurement: LPPM (Buy): Spare 2 & 3	2	2019	2	2019
Mast Procurement: LPPM (Buy): Spare 4 & 5	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0253 / *Nav & Electro-Optical Supt*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: ISIS (TI/APB): ISIS Test & Evaluation - ISIS TI-12/APB 11 OT	3	2014	3	2014
Test & Evaluation: ISIS (TI/APB): Test & Evaluation - ISIS TI-14/APB 13 OT	4	2015	4	2015
Test & Evaluation: ISIS (TI/APB): Test & Evaluation - ISIS TI-16/APB 15 OT	3	2017	3	2017
Test & Evaluation: ISIS (TI/APB): Test & Evaluation - ISIS TI-18/APB 17 OT	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*				Project (Number/Name) 0676 / *Improve ID 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**
0676: *Improve ID Development*	29.958	2.277	1.612	5.404	-	5.404	5.432	2.338	2.395	2.448	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. In addition to providing platform identification for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and Air Traffic Control (ATC). The Improved ID Development project addresses the Mark XIIA Mode 5 and Mode S upgrades to the existing AN/UPX-29(V) Mark XII family of systems that is Joint and North Atlantic Treaty Organization interoperable. The AN/UPX-29(V) Interrogator System is comprised of the Interrogator Set AN/UPX-24(V), OE-120/UPX Antenna Group, and Mark XII or Mark XIIA equipment such as AN/UPX-37, AN/UPX-41(C) or AN/UPX-45(C) Digital Interrogators and associated equipment. Additionally the Improved ID Development project may include product improvements designed to be installed through upgrade and deficiency correction studies, which in turn become engineering changes to other IFF solutions.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: AN/UPX-29 (V) - OE-120/UPX Antenna Tech Refresh	1.180	1.208	4.457	-	4.457
Articles:	-	-	-	-	-
Description: Engineering and integration development for antenna group OE-120/UPX antenna tech refresh. Develop design studies and Analysis of Alternatives, draft specifications, and perform system development and integration efforts and support mission requirements, to include engineering investigations and Engineering Change Proposal development to support mission readiness for IFF systems.					
FY 2014 Accomplishments: Address OE-120/UPX obsolescence issues as required. Integration and testing of antenna phase shifter and power supply modules.					
FY 2015 Plans: Address OE-120/UPX obsolescence issues and production line updates.					
FY 2016 Base Plans: Conduct Systems Engineering Technical Reviews for OE-120/UPX obsolescence issues and production line updates.					
FY 2016 OCO Plans: N/A					
Title: Mark XIIA Mode 5 and Mode S Improvement for AN/UPX-29(V)	1.022	0.244	0.784	-	0.784

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0676 / *Improve ID Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
Description: Engineering, development, and integration of improvements to Mark XIIA Shipboard Identification Friend or Foe (IFF) Systems, including, but not limited to the AN/UPX-29(V) Interrogator System, which is comprised of the Interrogator Set AN/UPX-24(V), OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment such as AN/UPX-37, AN/UPX-41(C) or AN/UPX-45(C) Digital Interrogators. Funds development and integration of Mark XIIA Mode 5 and Mode Select (S) Improvements to the AN/UPX-29(V) systems on CG47, DDG51, LHD1, LPD17, LHA6, and CVN68, CVN78, and future ship classes. Correct software and performance deficiencies from Integrated Test and Operational Test, Aegis, and other Combat System Integration events to support Combat System integration with Aegis Weapon Systems (AWS), Ship Self Defense System (SSDS), Advanced Combat Direction System (ACDS), or Air Traffic Control (ATC) Systems using Mark XIIA equipment to include engineering investigations, Engineering Change Proposal (ECP) development, and testing. Provides core Integrated Logistics Support (ILS) documentation; formalizes hardware/software configuration: finalizes technical/design data, resolves testing anomalies, and integrates with shipboard training systems. ***FY 2014 Accomplishments:*** AIMS Testing for AN/UPX-24(V) Software Version 2.1.3. Conducted engineering investigation for AN/UPX-24(V) Software Version 2.1.3 Aegis Integration Event Test Observation report. ***FY 2015 Plans:*** Evaluate software re-host with AN/UPX-24(V) technical refresh, new system processors against emerging AWS and SSDS combat systems. Support follow-on test and evaluation of Mode 5 and Mode S capability on new ship classes/flights, in service combat systems or ATC system capability updates and technology insertion cycles. ***FY 2016 Base Plans:*** Continue to evaluate AN/UPX-29(V) System performance and capabilities against emerging AWS, ACDS, SSDS and ATC System configurations. Support follow-on test and evaluation of Mode 5 and Mode S capability on new ship classes/flights. In FY16, the increase in costs is required to fund the land based test sites to conduct test and evaluation of the Mode (S) Interrogation software for the Aegis Combat Baseline (ACB16). This testing is required in order to begin installs on the DDG class in FY18. Ship interrogators require this critical safety capability to accurately identify and discern civilian versus military aircraft. ***FY 2016 OCO Plans:*** N/A					
Title: AN/UPX-29(V) Management Support	0.075	0.160	0.163	-	0.163
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0676 / *Improve ID Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Engineering and Program Management of the AN/UPX 29 (V). Perform system integration efforts. ***FY 2014 Accomplishments:*** Manage engineering assessments/evaluations/development efforts that provide resolution to engineering investigations and obsolescence issues. ***FY 2015 Plans:*** Manage engineering assessments/evaluations/development efforts that provide resolution to engineering investigations and obsolescence issues. ***FY 2016 Base Plans:*** Manage engineering assessments/evaluations/development efforts that provide resolution to engineering investigations and obsolescence issues. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.277	1.612	5.404	-	5.404

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/2851: *Identification Systems*	34.818	28.543	29.676	-	29.676	23.006	27.001	28.964	29.572	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy is to develop Mode 5 Engineering Change Proposals for modern Mark XII Identification Friend or Foe (IFF) equipment and integrate into all Navy Combat Weapons systems platforms and augment the Navy's Cooperative Identification Capability to include Mode 5.

E. Performance Metrics

Achieve Full Rate Production Decision and Initial Operational Capability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 0676 / *Improve ID Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NAWCAD : St Inigoes, MD	7.715	1.180	Nov 2013	1.208	Nov 2014	1.257	Nov 2015	-		1.257	Continuing	Continuing	Continuing
Ship Integration	WR	NAWCAD : St Inigoes, MD	2.304	0.158	Nov 2013	-		0.129	Nov 2015	-		0.129	-	2.591	-
Systems Engineering	WR	NAWCAD : St Inigoes, MD	5.559	0.426	Nov 2013	0.244	Nov 2014	0.325	Nov 2015	-		0.325	-	6.554	-
OE-120 Tech Refresh	SS/FFP	BAE : Nashua, NY	0.000	-		-		3.200	Nov 2015	-		3.200	7.800	11.000	11.000
		Subtotal	15.578	1.764		1.452		4.911		-		4.911	-	-	-

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
Configuration Management	WR	NAWCAD : St Inigoes, MD	0.169	-		-		-		-		-	-	0.169	-
ILS	WR	NAWCAD : St Inigoes, MD	2.486	0.061	Nov 2013	-		0.066	Nov 2015	-		0.066	-	2.613	-
Software Development	WR	NAWCAD : St Inigoes, MD	5.367	0.168	Nov 2013	-		0.172	Nov 2015	-		0.172	-	5.707	-
Technical Data	WR	NAWCAD : St Inigoes, MD	1.665	0.209	Nov 2013	-		0.088	Nov 2015	-		0.088	-	1.962	-
Training	WR	NAWCAD : St Inigoes, MD	0.200	-		-		-		-		-	-	0.200	-
		Subtotal	9.887	0.438		-		0.326		-		0.326	-	10.651	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : St Inigoes, MD	0.500	-		-		-		-		-	-	0.500	-

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
Operational Test & Evaluation	WR	NAWCAD : St Inigoes, MD	1.328	-		-		-		-		-	-	1.328	-
Test Assets	WR	NAWCAD : St Inigoes, MD	0.731	-		-		-		-		-	-	0.731	-
		Subtotal	2.559	-		-		-		-		-	-	2.559	-

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/CPFF	American Electronics : California, MD	1.690	0.075	Nov 2013	0.160	Nov 2014	0.167	Nov 2015	-		0.167	-	2.092	2.092
Engineering Support	WR	NAWCAD : PAX River, MD	0.244	-		-		-		-		-	-	0.244	-
		Subtotal	1.934	0.075		0.160		0.167		-		0.167	-	2.336	-

	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	29.958	2.277		1.612		5.404		-		5.404	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0676 / *Improve ID Development*

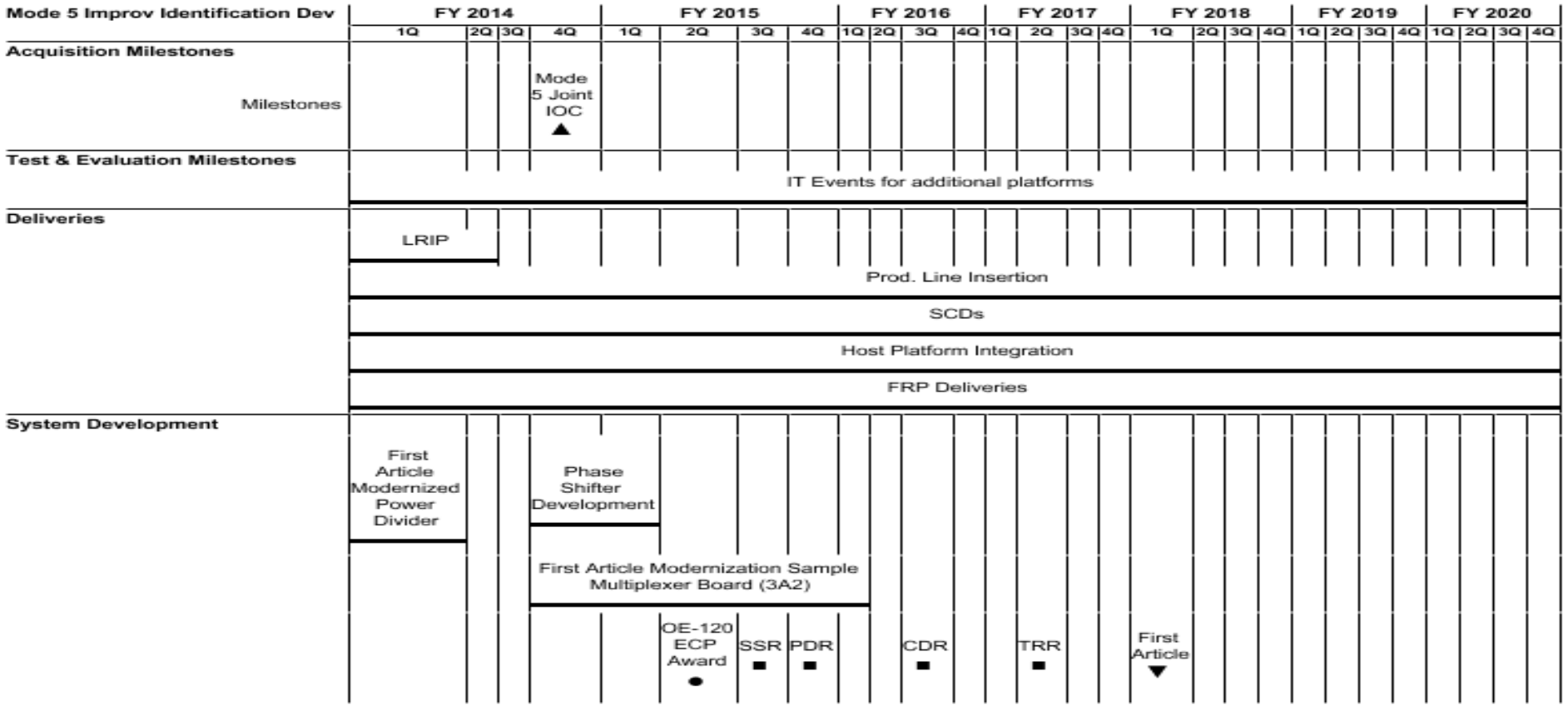

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Mode 5 Improv Identification Dev				
Acquisition Milestones: Milestones: Mode 5 - Joint IOC	4	2014	4	2014
Test & Evaluation Milestones: IT Events for additional platforms	1	2014	3	2020
Deliveries: Mode 5 - Low-Rate Initial Production Deliveries (DI,CXP) (OPN, APN5, RDTEN)	1	2014	2	2014
Deliveries: Mode 5 - Production Line Insertion	1	2014	4	2020
Deliveries: Mode 5 - Prepare and Evaluate ECPs/SCDs	1	2014	4	2020
Deliveries: Mode 5 - Host Platform Integrations	1	2014	4	2020
Deliveries: Mode 5 - FRP Deliveries	1	2014	4	2020
System Development: First Article Modernized Power Divider	1	2014	1	2014
System Development: Phase Shifter Development	4	2014	1	2015
System Development: First Article Modernization of Phase Shifter	4	2014	1	2016
System Development: OE-120 ECP Award	2	2015	2	2015
System Development: SSR	3	2015	3	2015
System Development: PDR	4	2015	4	2015
System Development: CDR	3	2016	3	2016
System Development: TRR	2	2017	2	2017
System Development: OE-120 ECP First Article Delivery	1	2018	1	2018

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*				Project (Number/Name) 0921 / *NAVSTAR GPS Equipment*			
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**
0921: *NAVSTAR GPS Equipment*	999.997	16.104	18.011	17.159	-	17.159	18.653	18.623	18.830	19.222	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Navigation Satellite Timing & Ranging (NAVSTAR) Global Positioning System (GPS) project (0921) is a space-based positioning, navigation, and timing (PNT) system that provides authorized users with secure, worldwide, all weather, three dimensional position, velocity, and precise time data. Research, Development, Testing and Evaluation (RDT&E) funds are used to perform all the non-recurring GPS Surface Ship, Submarine and Aircraft Development, Integration, and Testing efforts. GPS continues to be integrated in all DoD platforms and the development of enhanced GPS is a national security priority.

The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel assessed the Navy's GPS Vulnerabilities and recommended specific actions to resolve serious issues to ensure the continued availability of GPS information in a high risk hostile jamming environment. As a result, the Navy Enhanced GPS User Equipment Operational Requirement Document (ORD) was drafted to address operational requirements. NAVWAR's mission is to provide continued access to GPS information in a denied environment. RDT&E continues to support platform integration requirements, Developmental Test/Operational Test (DT/OT), the Navy's development of a smaller Anti-Jam (AJ) antenna and a conformal low-observable AJ antenna for aircraft with unique requirements, and new technology AJ solutions for submarines.

Two similar but separate ACAT III programs have been established and have become the Navy's Air and Sea Navigation Warfare (NAVWAR) programs. The Sea NAVWAR program is executed in two increments. Increment 1 is GPS Antenna System (GAS-1). Increment 2 is Advanced Digital Antenna Production (ADAP). The purpose of Increments 1 and 2 is to integrate Anti-Jam (AJ) antennas on surface platforms. The Sea NAVWAR program will continue research of viability and development of a smaller ADAP variant referred to as the Multi-Platform Anti-Jam GPS Navigation Antenna (MAGNA) for surface ships. The program continues to support the Submarine Anti-Jam GPS Enhancement (SAGE) antenna development integrating AJ capability on submarines for the OE-538 Increment 2 Mast program. The Air NAVWAR program is a single increment with GAS-1, ADAP, and other efforts continuing. The Capability Production Document for Sea NAVWAR Increment 2 (12/08) was approved to support the ADAP production and procurement.

The Global Position System (GPS)- based Positioning, Navigation, and Timing (PNT) Service (GPNTS) system is being developed to serve as the primary PNT system for the Navy. GPNTS will backfit current PNT/GPS systems as well as serve as a forward fit for new platforms. GPNTS provides precise Position, Navigation, and Time (PNT) data required for many combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical to the network environments.

GPNTS will provide more robust and secure GPS/PNT capabilities than is currently in the Fleet. The system will provide the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) such as Consolidated Afloat Networks Enterprise Services (CANES), and provide a path for the integration of advanced navigation systems and sensors. GPNTS supports Anti-Access/Area of Denial (A2AD) by providing Assured Positioning, Navigation and Timing (A-PNT) capability to C4ISR and combat systems in standalone and networked architectures throughout the air and maritime domains. GPNTS will support and provide

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input to Joint Aerial Layer Network-Maritime (JALN-M). JALN-M is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially A2AD.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Air Navigation Warfare (NAVWAR)	2.084	2.649	2.788	-	2.788
Articles:	-	-	-	-	-

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

FY 2014 Accomplishments:
Assisted other air platforms with integration of anti-jam (AJ) capability to include Unmanned Air Systems (UAS) and weapons. Investigated assured Positioning, Navigation and Timing (PNT) options for Naval aircraft. Continued to provide Global Positioning System (GPS) Modernization Navy unique requirements to GPS Directorate. Continued to coordinate GPS Modernization efforts with other programs and DoD services to reduce impacts to platform navigation systems. Continued to keep the Fleet apprised of GPS Enterprise Selective Availability Anti-Spoofing Module (SAASM) and Architecture Evolution Plan (AEP) developments. Participated in joint NAVWAR Memorandum Of Understanding (MOU) initiatives with Canada, United Kingdom and Australia including cooperative UAS NAVWAR development

FY 2015 Plans:
Continue to assist other air platforms with integration of AJ capability to include UAS and weapons. Continue assured PNT efforts by working with Navy Air platforms on navigation requirements and Capability Development Document (CDD) development. Continue to provide GPS Modernization Navy unique requirements to GPS Directorate. Continue to coordinate GPS Modernization efforts with other programs and DoD services to reduce impacts to platform navigation systems. Continue to assist the Fleet with GPS Enterprise SAASM and AEP developments. Participate in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

FY 2016 Base Plans:
Continue to assist other air platforms with integration of AJ capability to include UAS and weapons. Conduct demonstrations of small anti-jam variants on multiple platforms. Continue assured PNT efforts. Continue to provide GPS Modernization Navy unique requirements to GPS Directorate. Continue to coordinate GPS Modernization efforts with other programs and DoD services to reduce impacts to platform navigation systems. Continue to assist the Fleet with GPS Enterprise SAASM and AEP developments. Participate in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

FY 2016 OCO 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
N/A					
Title: Sea Navigation Warfare (NAVWAR)	1.910	1.212	6.753	-	6.753
Articles:	-	-	-	-	-
Description: Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of program insertion. ***FY 2014 Accomplishments:*** Increment 2: Completed Submarine Anti-Jam Global Positioning System (GPS) Enhancement (SAGE) development and delivery of SAGE prototypes. Conducted SAGE Development Test, and performance and environmental testing. Provided GPS AJ antenna programmatic and technical support. Initiated market research on the viability of an alternative small anti-jam antenna. Initiated systems engineering efforts on the development of a smaller Advanced Digital Antenna Production (ADAP) variant, the Multi-Platform Anti-Jam GPS Navigation Antenna (MAGNA). ***FY 2015 Plans:*** Increment 2: Conduct ADAP Integrated Logistics Assessment (ILA). Continue GPS AJ programmatic and technical support of SAGE Production Representative Article (PRA) development and integration efforts into OE-538 Increment 2 mast. Continue research and systems engineering efforts on the development of a smaller ADAP variant, MAGNA. Initiate acquisition efforts in support of the development and testing of MAGNA. Complete Technical Requirements Document (TRD). ***FY 2016 Base Plans:*** Increment 2: Continue GPS anti-jam programmatic and technical support of SAGE Production Representative Article (PRA) development and integration efforts into OE-538 Increment 2 mast. Continue MAGNA acquisition efforts. Initiate test and evaluation efforts of the MAGNA Development Test/Operational Test (DT/OT). ***FY 2016 OCO Plans:*** N/A					
Title: Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS)	12.110	14.150	7.618	-	7.618
Articles:	-	-	-	-	-
Description: Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion. ***FY 2014 Accomplishments:***					

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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
Participated in and provided formal Government witnessing on the following contractor developmental test activities; System Qualification testing (SQT), Developmental Verification Testing (DVT), Functional Qualification Testing (FQT), System Integration Testing (SIT), and various regression test events. Completed the Independent Verification and Validation (IV&V) plan for Government testing on the Engineering Development Models (EDMs). Obtained final approval on the Integrated Evaluation Framework (IEF) from COMOPTEVFOR and updated the program's Test and Evaluation Master Plan (TEMP). Completed an analysis of the Government test facilities for IV&V and Developmental Testing (DT) to determine certification requirements, procured hardware to support lab testing. Updated the programs Integrated Master Schedule (IMS), Cost Analysis Requirements Document (CARD), and the Program Life Cycle Cost Estimate (PLCCE). Completed the Logistics Provisioning Conference kick off. Completed monthly Earned Value Management (EVM) analysis and reporting.					
FY 2015 Plans: Complete Government witnessing of the contractor's Functional Configuration Audit (FCA) and Factory Acceptance Testing (FAT) on the EDMs. Finalize laboratory preparations for the conduct of Independent Verification and Validation (IV&V) and Developmental Testing (DT). Complete laborabory certification requests with COMOPTEVFOR. Complete test report for IV&V. Complete staff training on the EDMs. Complete the program's Provisioning Conference with NAVICP. Complete the Test and Evaluation Master Plan (TEMP) and the Capabilities Production Document (CPD). Commence updates on all statutory and regulatory acquisition documentation to support a Milestone (MS) C decision. Continue to conduct monthly Earned Value Management (EVM) analysis and reporting. Complete installation Readiness Drawings (IRDs) for all configurations. Complete a program Test Readiness Review (TRR) for IV&V and DT events. Efforts will include development of Positioning, Navigation and Timing (PNT) requirements in support of a Joint Aerial Layer Network-Maritime (JALN-M) demonstration in FY18.					
FY 2016 Base Plans: Complete Developmental Testing (DT) with COMOPTEVFOR. Efforts will include laboratory set up and installation, staff training, Government witnessing of the event, and reporting. Complete AEGIS Combat Certification testing and begin efforts for Environmental Qualification Testing. Complete all statutory and regulatory acquisition documentation in support of a MS C decision. Begin the Independent Logistics Assessment (ILA) for a MS C decision. Initiate Assured Integrated PNT Element (AIPE) component integration and testing efforts utilizing test assets. Integrate Military Global Positioning System (GPS) User Equipment into the GPNTS system. Continue to develop installation documentation such as Installation Readiness Drawings (IRDs), Ship Installation Drawings					

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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
(SIDs), and Engineering Change Orders (ECOs). Conduct Operational Acceptance (OA). Support efforts to obtain required Information Assurance documentation in order to conduct testing and evaluation events. Continue efforts that will include development of Positioning, Navigation and Timing (PNT) requirements in support of a Joint Aerial Layer Network-Maritime (JALN-M) demonstration in FY18. Participate in integration and testing of JALN-M Pod components or sub-systems. Support planning and execution of a JALN-M demonstration. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	16.104	18.011	17.159	-	17.159

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 / 2657: *NAVSTAR GPS Receivers (Space)*	11.765	15.232	12.359	-	12.359	15.445	18.721	21.025	21.466	Continuing	Continuing
• APN / 0577: *Common Avionics*	4.269	3.060	7.849	-	7.849	7.985	8.090	8.240	8.405	Continuing	Continuing

Remarks

D. Acquisition Strategy

Navigation Warfare (NAVWAR): The Sea NAVWAR program is executed in two increments and supports integration of the Submarine Anti-Jam GPS Enhancement (SAGE). Increment 1 has been completed. Increment 2 is Advanced Digital Antenna Production (ADAP). The purpose of Increments 1 and 2 is to integrate anti-jam (AJ) antennas on surface platforms. The Sea NAVWAR program will continue research and development of a small form factor Multi-Platform Anti-Jam GPS Navigation Antenna (MAGNA) for surface ships and continue to support the SAGE antenna development integrating AJ capability on submarines for the OE-538 Increment 2 Mast program. The Air NAVWAR program is executed in a single increment to integrate on air platforms, and develop a smaller AJ antenna and a conformal low-observable AJ antenna for aircraft with unique requirements.

GPNTS: The GPS-based Positioning Navigation and Timing (GPNTS) program will develop, acquire, and field the GPNTS, a scalable Selective Availability/Anti-Spoofing Module (SAASM) GPS-based service oriented architecture Positioning, Navigation, and Timing (PNT) system that will provide an open, extensible, modernized replacement for the current fleet PNT systems, while targeting Common Computing Environments (CCE). GPNTS will also integrate Military GPS User Equipment (MGUE) that will allow the U.S. Navy to leverage current and future technology development provided by the GPS Wing, formerly known as the GPS Joint Program Office (JPO). GPNTS will operate at the UNCLASSIFIED level, and can provide the PNT data to higher classified systems.

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E. Performance Metrics

The primary metric used for the Air NAVWAR Program is acceptable system performance in a GPS denied environment which is defined by classified values of jamming to signal ratio (J/S) identified in the Enhanced GPS User Equipment (UE) Operational Requirements Document (ORD) 562-06-00 of 7 June 2000. The performance goal is met if acceptable system performance is achieved in the threshold J/S environment cited in the classified appendix.

The primary metric used for the Sea NAVWAR is acceptable system performance in a GPS denial environment defined by classified values of jamming to signal ratio (J/S) identified in the Sea NAVWAR Increment 2 Capabilities Production Document (CPD) (12/08). The performance goal is met if acceptable system performance is achieved in the threshold J/S environment cited in the CPD.

The primary metrics used for the GPNTS is successful completion of the system development as outlined in the GPNTS Technical Requirements Document (TRD).

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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
Product Development	WR	SSC PAC/NAWC : San Diego/China Lake, Pax River	275.775	-		-		-		-		-	-	275.775	-
Product Development	WR	SSC PAC : San Diego	72.498	0.590	Oct 2013	0.680	Oct 2014	0.684	Oct 2015	-		0.684	Continuing	Continuing	Continuing
Product Dev (other in house)	WR	SSC PAC : San Diego	438.896	-		-		-		-		-	-	438.896	-
Systems Engineering	WR	Govt/Contractor : San Diego	21.212	0.216	Jan 2014	0.302	Jan 2015	0.304	Jan 2016	-		0.304	Continuing	Continuing	Continuing
Product Development	C/CPIF	Raytheon : San Diego	20.318	6.965	Jan 2014	7.721	Jan 2015	6.814	Jan 2016	-		6.814	Continuing	Continuing	Continuing
Product Development	C/CPFF	Boeing : St Louis	15.445	-		-		-		-		-	-	15.445	-
		Subtotal	844.144	7.771		8.703		7.802		-		7.802	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC PAC/NAWC : San Diego/Pax River/China Lake	12.710	1.683	Dec 2013	2.424	Dec 2014	2.437	Dec 2015	-		2.437	Continuing	Continuing	Continuing
Software Development	WR	SSC PAC/NAWC : San Diego/Pax River/ China Lake	10.450	-		-		-		-		-	-	10.450	-
Integrated Logistics Support	WR	SSC PAC/NAWC : San Diego/Pax River	7.862	0.340	Dec 2013	0.209	Dec 2014	0.210	Dec 2015	-		0.210	Continuing	Continuing	Continuing
Training Development	WR	SSC PAC/NAWC : San Diego/Pax River	5.390	0.060	Dec 2013	0.054	Dec 2014	0.054	Dec 2015	-		0.054	Continuing	Continuing	Continuing
Technical Data	WR	Platform PMOs : San Diego	4.650	-		-		-		-		-	-	4.650	-
Technical Data	C/CPAF	BAH : San Diego, Pax River	0.496	-		-		-		-		-	-	0.496	-

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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
Technical Data	WR	SSC PAC : San Diego	2.050	0.020	Dec 2013	0.021	Dec 2014	0.021	Dec 2015	-		0.021	Continuing	Continuing	Continuing
Technical Data	WR	NAWC : Pax River	0.448	0.414	Dec 2013	0.378	Dec 2014	0.380	Dec 2015	-		0.380	Continuing	Continuing	Continuing
Technical Data	WR	NAWC : China Lake	0.250	-		-		-		-		-	-	0.250	-
Government Engineering Services	WR	SSC PAC, NAWC : San Diego, China Lake, Pax River	0.000	-		1.405	Jan 2015	1.413	Jan 2016	-		1.413	-	2.818	-
Contract Engineering Services	C/FPAF	BAH : San Diego, Pax River, China Lake	0.000	-		1.889	Jan 2015	1.899	Jan 2016	-		1.899	-	3.788	-
		Subtotal	44.306	2.517		6.380		6.414		-		6.414	-	-	-

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
Test & Evaluation	WR	SSC PAC/NAWC PAX : San Diego/Pax River	31.732	0.775	Nov 2013	1.526	Nov 2014	1.515	Nov 2015	-		1.515	Continuing	Continuing	Continuing
Test & Evaluation	C/CPAF	BAH : Pax River	5.276	-		-		-		-		-	-	5.276	-
Test & Evaluation	WR	SSC PAC : San Diego	11.552	-		-		-		-		-	-	11.552	-
Test & Evaluation Platform Testing	WR	SSC PAC : San Diego	32.027	-		-		-		-		-	-	32.027	-
		Subtotal	80.587	0.775		1.526		1.515		-		1.515	-	-	-

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	BAH : Pax River, San Diego	22.841	-		-		-		-		-	-	22.841	-

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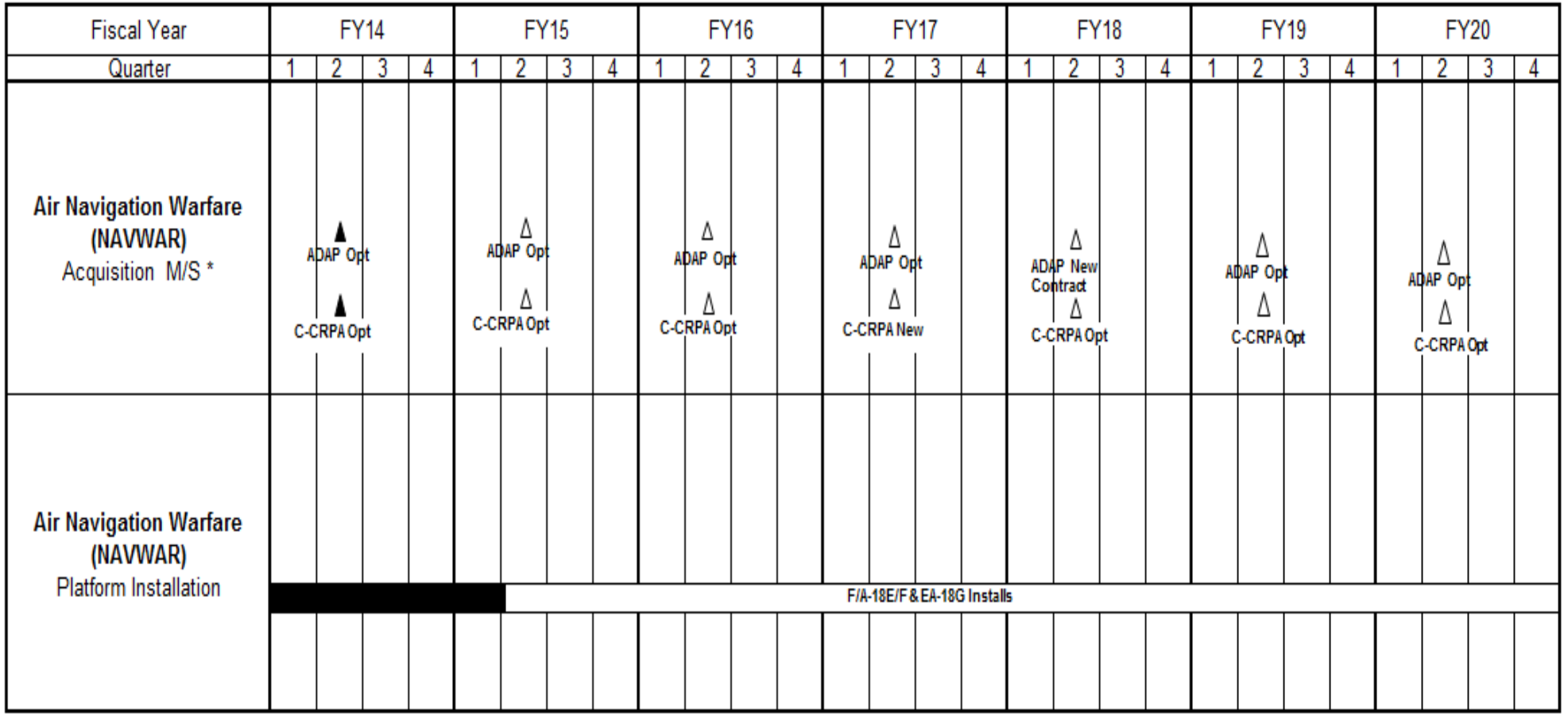
Management Services ($ in Millions)

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
Program Management Support	C/CPAF	BAH : San Diego, Pax River, China Lake	2.818	1.849	Jan 2014	1.402	Jan 2015	1.428	Jan 2016	-		1.428	Continuing	Continuing	Continuing
Contractor Engineering Services	C/CPAF	BAH : San Diego, Pax River, China Lake	1.400	1.814	Jan 2014	-		-		-		-	-	3.214	-
Government Engineering Services	WR	SSC PAC, NAWC : San Diego, China Lake, Pax River	3.901	1.378	Jan 2014	-		-		-		-	-	5.279	-
		Subtotal	30.960	5.041		1.402		1.428		-		1.428	-	-	-

	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	999.997	16.104		18.011		17.159		-		17.159	-	-	-

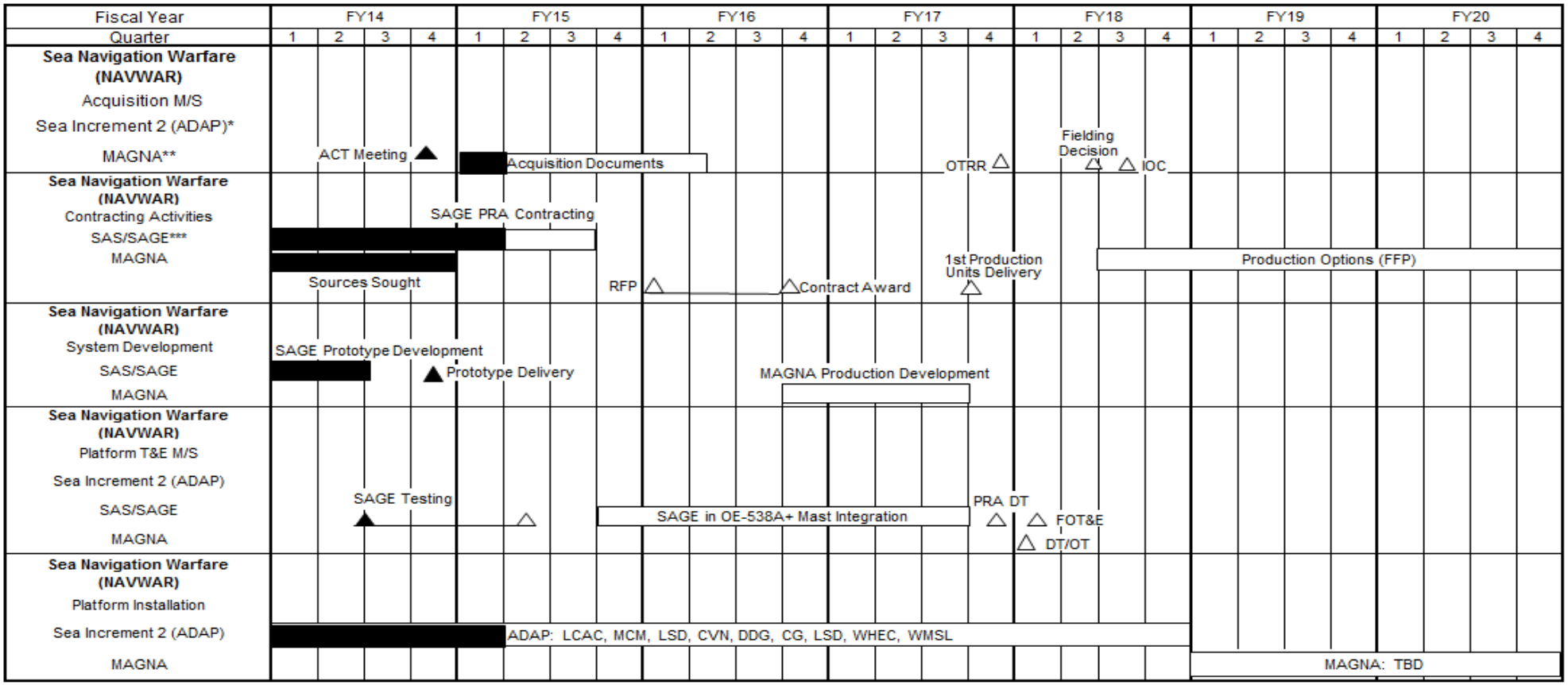
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0921 / *NAVSTAR GPS Equipment*



* ADAP (Advanced Digital Antenna Production), C-CRPA (Conformal Controlled Reception Pattern Antenna).

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0921 / *NAVSTAR GPS Equipment*

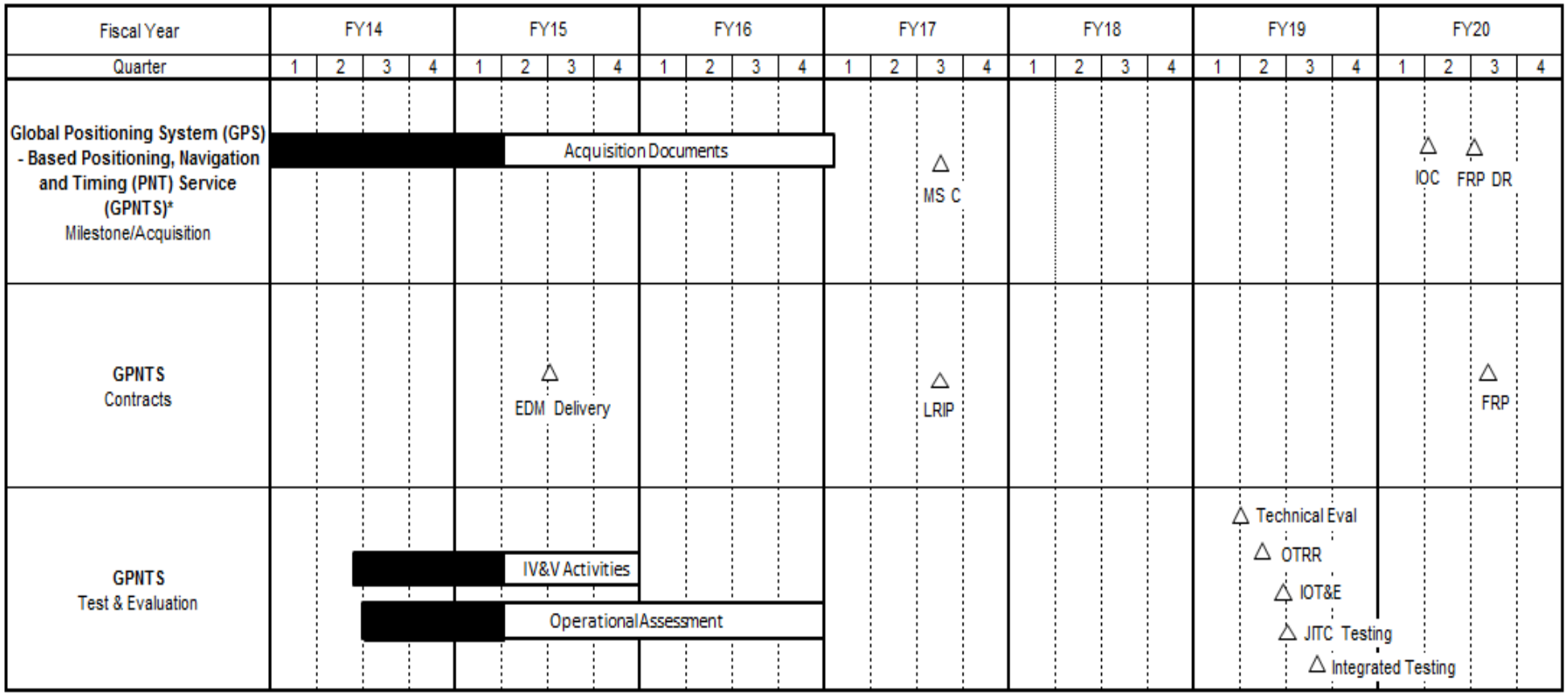


*ADAP is the Advanced Digital Antenna Production program

**MAGNA is the Multi-Platform Anti-Jam GPS Navigation Antenna. It is the proposed engineering change to the ADAP variant.

***SAS/SAGE is the Navy's development of a Small Antenna System (SAS)/Submarine Anti-jam GPS Enhancement (SAGE): Per MDA Merger Decision dated 24 July 2012 , the Sea NAVWAR Increment 3 SAGE transitioned to the OE-538 Increment 2 program. Per updated APB of 7 March 2013 Increment 3 cost, schedule, and performance requirements has been removed from the APB. Sea NAVWAR remains as the Technical Authority for SAGE and is responsible for prototype developments.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0921 / *NAVSTAR GPS Equipment*



* Global Positioning System (GPS) Positioning, Navigation, Timing (PNT) Service GPNTS will be a single Program of Record (POR), which will receive, process, and distribute three dimensional position, velocity, acceleration, time, and frequency in the formats required by shipboard user systems. GPNTS will be scalable to accommodate back fit of current legacy PNT systems as well as forward fit of new platforms.

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0921 / *NAVSTAR GPS Equipment*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0921				
Air NAVWAR: Air Navigation ADAP Option 2014	2	2014	2	2014
Air NAVWAR: Air Navigation C-CRPA Option 2014	2	2014	2	2014
Air NAVWAR: Air Navigation ADAP Option 2015	2	2015	2	2015
Air NAVWAR: Air Navigation C-CRPA Option 2015	2	2015	2	2015
Air NAVWAR: Air Navigation ADAP Option 2016	2	2016	2	2016
Air NAVWAR: Air Navigation C-CRPA Option 2016	2	2016	2	2016
Air NAVWAR: Air Navigation ADAP Option 2017	2	2017	2	2017
Air NAVWAR: Air Navigation C-CRPA Option 2017	2	2017	2	2017
Air NAVWAR: Air Navigation ADAP Option 2018	2	2018	2	2018
Air NAVWAR: Air Navigation C-CRPA Option 2018	2	2018	2	2018
Air NAVWAR: Air Navigation ADAP Option 2019	2	2019	2	2019
Air NAVWAR: Air Navigation C-CRPA Option 2019	2	2019	2	2019
Air NAVWAR: Air Navigation ADAP Option 2020	2	2020	2	2020
Air NAVWAR: Air Navigation C-CRPA Option 2020	2	2020	2	2020
Sea NAVWAR: Sea Navigation (SUB) SAGE Prototype Development	1	2014	3	2014
Sea NAVWAR: Sea Navigation (SUB) SAGE DT	3	2014	2	2015
Sea NAVWAR: Sea Navigation (SUB) SAGE Prototype Delivery	4	2014	4	2014
Sea NAVWAR: Sea Navigation (SUB) (MAGNA) Acquisition Doc Dev	1	2015	2	2016
Sea NAVWAR: Sea Navigation (SUB) SAGE / OE-538 Mast Integration	4	2015	3	2017
Sea NAVWAR: Sea Navigation (MAGNA) RFP	1	2016	1	2016
Sea NAVWAR: Sea Navigation (MAGNA) Contract Award	4	2016	4	2016
Sea NAVWAR: Sea Navigation (MAGNA) 1st Unit Delivery	4	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 0921 / *NAVSTAR GPS Equipment*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Sea NAVWAR: Sea Navigation (MAGNA) OTRR	4	2017	4	2017
Sea NAVWAR: Sea Navigation (SUB) SAGE PRA DT	4	2017	4	2017
Sea NAVWAR: Sea Navigation (MAGNA) DT/OT	1	2018	1	2018
Sea NAVWAR: Sea Navigation (SUB) SAGE FOT&E	1	2018	1	2018
Sea NAVWAR: Sea Navigation (MAGNA) Fielding Decision	2	2018	2	2018
Sea NAVWAR: Sea Navigation (MAGNA) IOC	3	2018	3	2018
Sea NAVWAR: Sea Navigation (MAGNA) Production Options (FFP)	3	2018	4	2020
GPS-based PNT Service (GPNTS): GPNTS Acquisition Documents	1	2014	1	2017
GPS-based PNT Service (GPNTS): GPNTS IV&V Activities	2	2014	4	2015
GPS-based PNT Service (GPNTS): GPNTS Operational Assessment	3	2014	4	2016
GPS-based PNT Service (GPNTS): GPNTS EDM Delivery	3	2015	3	2015
GPS-based PNT Service (GPNTS): GPNTS MS C	3	2017	3	2017
GPS-based PNT Service (GPNTS): GPNTS LRIP	3	2017	3	2017
GPS-based PNT Service (GPNTS): GPNTS Tech Eval	2	2019	2	2019
GPS-based PNT Service (GPNTS): GPNTS OTRR	2	2019	2	2019
GPS-based PNT Service (GPNTS): GPNTS IOT&E	2	2019	2	2019
GPS-based PNT Service (GPNTS): GPNTS JITC Testing	3	2019	3	2019
GPS-based PNT Service (GPNTS): GPNTS Testing	3	2019	3	2019
GPS-based PNT Service (GPNTS): GPNTS IOC	2	2020	2	2020
GPS-based PNT Service (GPNTS): GPNTS FRP DR	3	2020	3	2020
GPS-based PNT Service (GPNTS): GPNTS FRP Contract	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 1253 / *Combat Ident System*	

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
1253: *Combat Ident System*	163.208	14.697	3.245	2.649	-	2.649	4.351	2.349	1.918	1.957	Continuing	Continuing
Quantity of RDT&E Articles	81	-	1	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MK XIIA Mode 5 provides improved secure cooperative combat identification via Identification Friend or Foe (IFF). Mode 5 is developed in cooperation with North Atlantic Treaty Organization, with the DoD implementation governed by AIMS 03-1000A and USN requirements defined in ORD # 577-06-01. IFF product improvements are designed to be installed through upgrade and deficiency correction studies, which in turn become engineering changes to IFF interrogators and transponders and their associated cryptographic material.

The Navy Mark XIIA Mode 5 program was approved for entry in Systems Development and Demonstration phase in August 2003 and into the Production and Deployment Phase and Low Rate Initial Production in July 2006, and Full Rate Production July 2012. Joint Requirements Oversight Council Memorandums (047-07 and 122-08) achieved Mode 5 Navy Initial Operational Capability in FY14 and expect Joint Full Operational Capability in 2020.

RDT&E articles include Mode 5 cryptographic modules and associated hardware and software changes for IFF interrogators and transponders, including, but not limited to: AN/APX-123, AN/UPX-41, AN/APX-119, and AN/APX-111 equipment. RDT&E units are required for government and contractor labs to support aircraft and ship integrations, test sites and test aircraft.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Mode 5 prototype hardware, cryptographic module	8.571	0.397	0.890	-	0.890
Articles:	-	-	-	-	-
Description: Develop kits for installation into existing fleet assets including AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Digital Transponder, and AN/APX-111 Combined Interrogator Transponder (CIT) or other interrogator/transponder equipment. Repair and correct deficiencies identified during integration and test. Procure IFF interrogators and transponders, including but not limited to: AN/ UPX-41C, AN/APX-123, AN/APX-119, AN/UPX-24, AN/APX-111(V), cryptographic modules and Mode 5 modification kits to support platform integration and testing. Perform platform integration efforts of Mode 5 equipment for various Type/ Model/Series aircraft.					
FY 2014 Accomplishments: Continue integration of the Mode 5 AN/APX-111 CIT in the F/A-18E/F and EA-18G aircraft.					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 1253 / *Combat Ident System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Finalize integration of the Mode 5 AN/APX-111 CIT in the F/A-18E/F and EA-18G aircraft. ***FY 2016 Base Plans:*** Begin integration of Mode 5 into CH-53K. Integrate Mode 5 into commercially available transponders, reduced form factor assets, including micro cryptographic equipment for various platforms including Unmanned Aircraft Systems. ***FY 2016 OCO Plans:*** N/A					
Title: Mode 5 Systems Engineering and Integrated Logistics Support (ILS) ***Articles:*** ***Description:*** Performed systems engineering and analysis in support of Mode 5 hardware/software development and engineering change proposals on Identification Friend or Foe (IFF) interrogators and transponders, including but not limited to: AN/UPX-41C Interrogator, AN/APX-123 Common Digital Transponder, AN/APX-119 Transponder, AN/APX-111 Combined Interrogator Transponder, Cryptographic Modules, Mode 5 Engineering Test Equipment, and Mode 5 support equipment. ***FY 2014 Accomplishments:*** Continue systems engineering and logistics efforts for KC-130J and F/A-18E/F and EA-18G. ***FY 2015 Plans:*** Continue systems engineering and logistics efforts for various platforms (including KC-130J aircraft). ***FY 2016 Base Plans:*** Continue systems engineering and logistics efforts for various platforms (including CH-53K and KC-130J aircraft). ***FY 2016 OCO Plans:*** N/A	2.769 -	1.167 -	0.370 -	- -	0.370 -
Title: Mode 5 Upgrade Developmental Test & Operational Test ***Articles:*** ***Description:*** Perform Mode 5 integrated and operational test phases for AN/UPX-41C Interrogator, AN/APX-123 Common Transponder, AN/APX-119 Transponder, and AN/APX-111 Combined Interrogator Transponder. ***FY 2014 Accomplishments:***	3.357 -	1.681 1	1.389 -	- -	1.389 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 1253 / *Combat Ident System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Finalize integrated test and conduct follow-on operational testing on the F/A-18E/F and EA-18G of the Mode 5 AN/APX-111 equipment and platform H10 Mission Computer integration software. Finalize integrated testing on E-2D aircraft. ***FY 2015 Plans:*** Procure APX-119 and cryptographic module for the Navy's KC-130J test aircraft and plan for testing. Coordinate and plan for platform integrated testing. Continue to conduct follow-on operational testing on the F/A-18E/F and EA-18G of the Mode 5 AN/APX-111 equipment and platform H10 Mission Computer integration software. Finalize integrated testing on E-2D aircraft. ***FY 2016 Base Plans:*** Continue testing of Mode 5 modified equipment including cryptological devices. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	14.697	3.245	2.649	-	2.649

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/2851: *Identification Systems*	34.818	28.543	29.676	-	29.676	23.006	27.001	28.964	29.572	Continuing	Continuing
• APN/0582: *Identification Systems*	38.303	38.880	48.206	-	48.206	51.853	49.925	46.792	47.719	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Acquisition Strategy is to develop Mode 5 Engineering Change Proposals for modern Mark XII Identification Friend or Foe (IFF) equipment or insertion of Mode 5 into other existing equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.

E. Performance Metrics

Continue Full Rate Production and achieve Initial Operational Capability in FY 2014. Preform studies and analysis for future road mapping of IFF capability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 1253 / *Combat Ident System*	

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
Prior Year Prod Dev Services costs no longer funded in FYDP	Various	Various : Various	43.213	-		-		-		-		-	-	43.213	-
Primary Hardware Development	WR	NAWCWD : China Lake, CA	13.756	3.065	Feb 2014	0.397	Jan 2015	-		-		-	0.294	17.512	-
Primary Hardware Development	Various	Boeing : St Louis, MO	24.920	5.506	Jan 2014	-		-		-		-	4.551	34.977	34.977
Systems Engineering	WR	NAWCAD : PAX River, MD	12.909	1.605	Nov 2013	0.643	Nov 2014	0.220	Nov 2015	-		0.220	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : St Inigoes, MD	13.772	0.540	Nov 2013	0.439	Nov 2014	0.045	Nov 2015	-		0.045	Continuing	Continuing	Continuing
Primary Hardware Development	Various	L-3 : Waco, TX	0.000	-		-		-		-		-	0.224	0.224	0.224
Primary Hardware Development	Various	Sikorsky : Stratford, CT	0.000	-		-		0.890	Jan 2016	-		0.890	4.386	5.276	-
		Subtotal	108.570	10.716		1.479		1.155		-		1.155	-	-	-

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
ILS	Various	Various : Various	4.113	0.624	Nov 2013	0.085	Nov 2014	0.105	Nov 2015	-		0.105	Continuing	Continuing	Continuing
Prior Year Support Services costs no longer funded in FYDP	Various	Various : Various	2.761	-		-		-		-		-	-	2.761	-
		Subtotal	6.874	0.624		0.085		0.105		-		0.105	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / *Navigation/Id System*	Project (Number/Name) 1253 / *Combat Ident System*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T & E	WR	NAWCAD : PAX River, MD	23.349	3.066	Nov 2013	1.621	Nov 2014	1.389	Nov 2015	-		1.389	7.705	37.130	-
Develop/Operational T & E	WR	COMOPTEVFOR : Norfolk, VA	0.000	0.291	Jan 2014	-		-		-		-	-	0.291	-
Operational T & E	WR	NAWCAD : PAX River, MD	16.623	-		-		-		-		-	-	16.623	-
Test Assets	Various	Various : Various	3.396	-		0.060	Mar 2015	-		-		-	-	3.456	3.456
		Subtotal	43.368	3.357		1.681		1.389		-		1.389	7.705	57.500	-

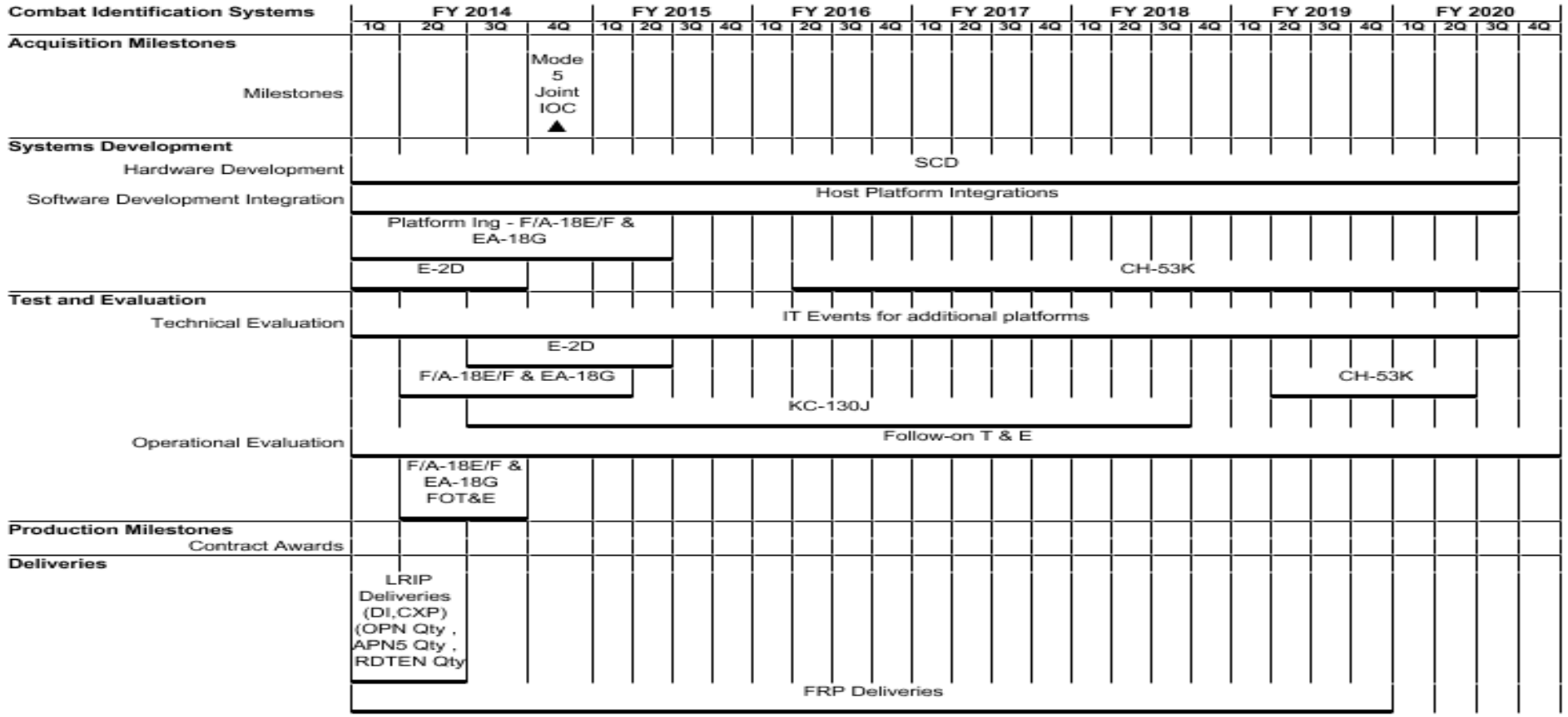
Management Services ($ in Millions)

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
Prior Year Mgmt Services costs no longer funded in FYDP	Various	Various : Various	4.396	-		-		-		-		-	-	4.396	-
		Subtotal	4.396	-		-		-		-		-	-	4.396	-

	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	163.208	14.697		3.245		2.649		-		2.649	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 1253 / *Combat Ident System*



2016PB - 0604777N - 1253

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604777N / *Navigation/Id System*	**Project (Number/Name)** 1253 / *Combat Ident System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combat Identification Systems				
Acquisition Milestones: Milestones: Mode 5 Joint IOC	4	2014	4	2014
Systems Development: Hardware Development: Prepare & Evaluate ECPs/SCDs	1	2014	3	2020
Systems Development: Software Development Integration: Host Platform Integrations	1	2014	3	2020
Systems Development: Software Development Integration: Platform Intg	1	2014	2	2015
Systems Development: Software Development Integration: E-2D	1	2014	3	2014
Systems Development: Software Development Integration: CH-53K	2	2016	3	2020
Test and Evaluation: Technical Evaluation: IT Events for additional platforms	1	2014	3	2020
Test and Evaluation: Technical Evaluation: E-2D	3	2014	2	2015
Test and Evaluation: Technical Evaluation: F/A-18E/F & EA-18G	2	2014	1	2015
Test and Evaluation: Technical Evaluation: CH-53K	2	2019	2	2020
Test and Evaluation: Technical Evaluation: KC-130J	3	2014	3	2018
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation	1	2014	4	2020
Test and Evaluation: Operational Evaluation: F/A-18E/F & EA-18G FOT&E	2	2014	3	2014
Deliveries: Low-Rate Initial Production (LRIP) Deliveries (DI,CXP) (OPN, APN5, RDTEN)	1	2014	2	2014
Deliveries: FRP Deliveries	1	2014	4	2019