

<b>CLASSIFICATION:</b>									
EXHIBIT R-2, RDT&E Budget Item Justification							DATE:		
							<b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /</b>				BA 5	R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost		44.752	47.887	42.121	48.947	48.629	45.492	51.631	52.603
0253	Navigation and Electro-Optical Support	11.557	8.022	7.671	7.988	8.220	8.444	8.596	8.750
0676	Improved ID Development	3.058	3.804	3.387	2.911	2.916	2.704	2.622	2.721
0921	NAVSTAR GPS Equipment	19.518	21.375	19.220	28.397	22.165	19.365	25.181	25.620
1253	Combat ID System	9.278	13.690	11.843	9.651	15.328	14.979	15.232	15.512
9999	Congressional Increases	1.341	0.996						
Quantity of RDT&E Articles		18	7	5	5	18			
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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, covers the Navy lead of a MK XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and 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).</p> <p>NAVISTAR 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. WRN-X is a modernized ship GPS equipment development program required to provide a replacement for the existing WRN-6 receiver and other shipboard receivers. Navigation Sensor System Interface (NAVSSI) is a surface based system that integrates shipboard position, navigation and timing data and distributes the processed output to user systems and networks.</p>									

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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA 5</b>	R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS
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**(U) B. PROGRAM CHANGE SUMMARY:**

	44.752	46.891	42.121	48.947
(U) Funding:	FY 2006	FY 2007	FY 2008	FY 2009
FY07 President's Budget	46.926	47.070	51.284	59.119
FY08/09 PB Budget	44.752	46.891	42.121	48.947
Total Adjustments	-2.174	-0.179	-9.163	-10.172
Summary of Adjustments				
NAVSTAR GPS reduction			-6.152	-5.244
Execution Realignments	0.089			
NAVWAR Air F/A-18 support requirement	-3.000			
Windows NT EOL	-0.567			
Congressional Increases - Sure Trak	1.400			
Miscellaneous Navy Adjustments	-0.096		0.184	0.292
Unfunded - Oracle Afloat			-0.369	-0.113
Realignment to other APPNs			-2.200	-5.200
CIVPERS/CS Adjustment for Aviation Enterprise			-0.587	-0.561
Navy Research & Development - Accrued Liabilities				
Sec. 8023: Federally Funded R&D Center		-0.016		
Sec. 8025: Revised Economic Assumptions		-0.163	-0.014	
NWCF Rate Adjustments - Naval Air Warfare Center			-0.002	0.049
Pricing			-0.023	0.168
BRAC - Consolidate Maritime C4ISR Research, Dev & Acq, Test & Evaluate				-0.006
BRAC - 05 Mitigation Strategy Balancer				0.036
NWCF Rate Adjustments - SPAWAR Systems Center				0.166
				0.241
Subtotal	-2.174	-0.179	-9.163	-10.172

(U) Schedule:

Proj 0676: Developmental Test (DT-B1) was increased in duration from 2Q-4Q FY05 to 1Q FY2006 and Operational Test (OT-B1) was rescheduled from 1Q - 2Q FY2005 to 2Q-3Q FY2006 due to late delivery of GFE and changes in Reply Encryption Requirements. Also extended the length requirement of the Surface Combat Systems Center (SCSC) effort. This also delayed Milestone C from 3Q FY06 to 4Q FY06. Other changes in the schedule are due to Initial Operation Capability (IOC) was moved because the program lost their lead ship platform (CG 71) due to a change in the Cruiser Modernization Program. DDG 103 Platform is no longer available and DDG 104 is now the Mode 5 OPEVAL platform, with an availability in 3Q of FY 08, moving IOC to 1Q FY09. Fleet Training Center (FTC) milestone was deleted as Mode 5 equipment is no longer being install in FTC.

Proj 1253: Changes to the schedule are due to late delivery of GFE and changes in Reply Encryption and Tamper Requirements. This also delayed Milestone C from 3Q FY06 to 4Q FY06. DDG 104 is now the Mode 5 OPEVAL platform, with an availability in 3Q of FY08, with IOC scheduled for 1Q FY09.

Technical: Not applicable

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/ BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0253 Navigation and Electro-Optical Support		11.557	8.022	7.671	7.988	8.220	8.444	8.596	8.750
RDT&E Articles Qty									
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> The Navigation and Electro-Optical Support program develops Submarine Electro-Optical 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 Photonics Imaging System, mounted on the Universal Modular Mast, will provide imaging capability for the VIRGINIA class submarine. The Photonics Imaging System design exploits a wide portion of the electro-magnetic spectrum through advanced E-O and thermal imaging and Electronic Warfare Support (ES)/Communications intercept. It will provide significant improvements in submarine stealth and infrared imaging capability. The non-hull penetrating design provides freedom in ship design and space savings for VIRGINIA CLASS and future submarines designs. The system was designed to satisfy Operational Requirement #365-87-94. Specific efforts include: (1) Photonics Imaging System On-Board Team Trainer Development (2) Photonics Imaging System At Sea Test And Evaluation (3) Photonics Imaging System Sensors and image processing improvements.</p> <p>The Department of the Navy established the Integrated Submarine Imaging System (ISIS) to rapidly field the Type 18 Periscope Patriot Rangefinder, Type 8IR Periscope systems, and integrate existing periscope imagery systems into a single system for installation on board submarines. The ISIS baseline includes the Type 18 Periscope Patriot Rangefinder, Type 8IR Periscope, and supports high intensity operations in the littoral and provides the submarine force with the tactical imaging systems necessary to safely and effectively employ its surveillance and weapons capabilities. Specific efforts undertaken to meet the ISIS requirements are: (1) Type 18 Periscope Automated Range Finder development. (2) Submarine Common Imagery System Development. Development of capabilities common to ISIS and Photonics, include: Image stitching, high resolution imaging, automatic visual detection, tracking and classification capabilities.</p> <p>This program funds the development of Patriot Radar Range Finding for Photonics for SSGN and VIRGINIA Class Submarines. Patriot for Photonics will provide SSGN and VIRGINIA Class submarines with enhanced situations awareness and collision avoidance. Currently Patriot has only been developed for SSN 688 and SSN 21 Class submarines. This effort will provide Patriot Radar Range Finding to SSGN and VIRGINIA Class submarines on the Photonics Mast.</p>									

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/ BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support			
<b>(U) B. Accomplishments/Planned Program</b>					
	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	0.681	0.365	0.154	0.147	
RDT&E Articles Quantity					
Upgrade/Resolve Obsolete Photonics On-Board Team Trainer development.					
	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	4.605	4.429	4.429	4.996	
RDT&E Articles Quantity					
Commence development of capabilities common to ISIS and Photonics, including: Image stitching, super resolution imaging, automatic visual detection, tracking and classification capabilities using the advanced processing build.					
	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	3.471	2.028	1.078	1.075	
RDT&E Articles Quantity					
Develop Low Light Level TV, improved image processing, Photonics Imaging System all digital signal path and Photonics Integrated Control and Display.					

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/ BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support
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**(U) B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.950	0.720
RDT&E Articles Quantity				

Complete Photonics Imaging System EDM Shock Test and convert to the configuration control model.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	2.800	1.200	1.060	1.050
RDT&E Articles Quantity				

Develop Patriot Radar Range Finding for Photonics for SSGN and VIRGINIA Class Submarines.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/ BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support
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**C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) SCN Line 201300 (Photonics Mast only)	11.028	11.608	11.717	10.700	10.792	10.994	10.994	10.994	Continuing	Continuing
OPN Line 083100 (PL018, PL022)	46.669	36.753	56.198	57.398	39.391	33.680	48.539	49.731	Continuing	Continuing
OPN Line 083105	3.877	9.632	5.938	6.775	5.574	6.170	6.300	6.432	Continuing	Continuing
(U) Related RDT&E										
(U) PE 0604558N (The VIRGINIA Class Design Development)	2.483	.788	.196	.202	.202	.202	.202	.202	TBD	4.477

**D. ACQUISITION STRATEGY:**

The Acquisition Strategy for AN/BVS-1 Photonics Mast Program (PMP) is dtd 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 dtd 07 Jul 2003. 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, and SSGN class submarines.

**E. MAJOR PERFORMERS:**

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Kollmorgen, Northampton, MA - Photonics	11/05	11/06	11/07	11/08
NUWC, Newport, RI - Photonics	11/05	11/06	11/07	11/08
GD-AIS, Fair Lakes, Virginia - Photonics Mast Workstation	11/05	11/06	11/07	11/08

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N/ BA-5</b>			0604777N NAVIGATION / ID SYSTEMS			0253 Navigation and Electro-Optical Support								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	50.426	3.264	10/05	2.470	10/06	1.889	10/07	1.760	10/08	Continuing	Continuing	
Software Development	Various	Various	4.278	2.343	10/05	1.907	10/06	1.550	10/07	2.238	10/08	Continuing	Continuing	
Aircraft Integration														
Ship Integration														
Ship Suitability														
Systems Engineering	Various	Various	11.958	2.830	10/05	1.609	10/06	2.377	10/07	2.059	10/08	Continuing	Continuing	
Training Development														
Licenses														
Miscellaneous	Various	Various	1.896	0.979	10/05	0.655	10/06	0.581	10/07	0.538	10/08	Continuing	Continuing	
GFE														
Award Fees														
Subtotal Product Development			68.558	9.416		6.641		6.397		6.595		Continuing	Continuing	
Remarks:														
Development Support														0.000
Software Development														0.000
Integrated Logistics Support														0.000
Configuration Management														0.000
Technical Data														0.000
Studies & Analyses														0.000
GFE														0.000
Award Fees										0.000				0.000
Subtotal Support			0.000	0.000		0.000		0.000	0.000	0.000				0.000
Remarks:														

Exhibit R-3 Cost Analysis (page 2)				DATE: February 2007											
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		0253 Navigation and Electro-Optical Support										
RDT&E, N/ BA-5			0604777N NAVIGATION / ID SYSTEMS												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	Various	Various	1.812	1.580	10/05	0.731	10/06	0.694	10/07	0.800	10/08	Continuing	Continuing		
Operational Test & Evaluation															
Live Fire Test & Evaluation															
Test Assets															
Tooling															
GFE															
Award Fees															
Subtotal T&E			1.812	1.580		0.731		0.694		0.800		Continuing	Continuing		
Remarks:															
Contractor Engineering Support															
Program Management Support															
Management Support Services/ETS	CPAF	AT&T	1.250	0.511	10/05	0.600	01/07	0.530	10/07	0.543	10/08	Continuing	Continuing		
Travel			0.160	0.050		0.050		0.050		0.050		Continuing	Continuing		
Transportation															
SBIR Assessment															
Subtotal Management			1.410	0.561		0.650		0.580		0.593		Continuing	Continuing		
Remarks:															
Total Cost			71.780	11.557		8.022		7.671		7.988		Continuing	Continuing		
Remarks:															

EXHIBIT R4, Schedule Profile																														DATE: <b>Feb-07</b>			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME																PROJECT NUMBER AND NAME															
RDT&E, N/BA-5		0604777N Navigation ID/Systems																0253 Navigation and Electro Optical Support															
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
F0253 Schedule		Start Design				CDR				Software ECP																							
<b>PMOBT</b>		▲				▲				▲																							
SPOT Conversion																																	
<b>ISIS APB</b>						APB SEA Test Concept				Software ECP																							
FY06 APB Merchant Ship ID Radar Auto Tracking		▲				▲				▲				▲				▲				▲				▲							
FY07 APB Merchant Ship ID Radar Auto Tracking		▲				▲				▲				▲				▲				▲				▲							
FY07-FY12 APB Enhancements (TBD)		APB 07 Start				APB 08 Start				APB 09 Start				APB 10 Start				APB 11 Start				APB 12 Start				APB 13 Start							
Tech Insertion Development		TI_06 Start				▲				TI_08 Start								TI-10 Start				TI-11				TI-12				TI-13			
ISIS Development		▲				SSN688 DT1				▲				SSGN688																			
ISIS Camera Improvements																						Full ISIS Deployment											
<b>Photonics</b>		▲				Sea Test CDR				CDR				CDR				EDM				ED											
LLLTV HDTV & All Digital Signal Path Development		CDR				EDM				▲				Sea Test				▲															
Photonics Reliability Improvements		▲				EDM				▲				Sea Test				▲															
Camera Improvements/Obsolescence										Working Group Design changes				▲				CDR															
Photonics Integrated Control and Display										Initiat																							
<b>UNDEX</b>																																	
Patriot for Photonics		Start Design				▲				EDM																							
Patriot for Photonics						▲				▲																							

Exhibit R-4a, Schedule Detail				DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY			PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N/ BA-5</b>			0253 Navigation and Electro-Optical Support					
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>PMOBT</b>								
Initiate PMOBT SPOT Conversion	1Q							
PMOBT SPOT Conversion CDR	4Q							
PMOBT SPOT Software ECP			3Q					
<b>ISIS/APB</b>								
Initiate FY07 APB	1Q							
Initiate TI-06 Development	1Q							
ISIS SSN688 DT	3Q							
FY06 APB Sea Test	4Q							
Initiate FY08 APB		1Q						
Test TI-06 EDM		3Q						
FY06 APB Software ECP		4Q						
ISIS SSGN DT			1Q					
Initiate ISIS Camera Upgrades			1Q					
Initiate FY09 APB			1Q					
Initiate T-I08 Development			1Q					
ISIS Camera Upgrades CDR				1Q				
Initiate FY10 APB				1Q				
Test TI-08 EDM				3Q				
Initiate FY11 APB					1Q			
Initiate TI-10 Development					1Q			
ISIS Camera Upgrades EDM					3Q			
Initiate FY12 APB						1Q		
Test TI-10 EDM						4Q		
Test TI-11 EDM						1Q		
Test TI-12 EDM							1Q	
Initiate FY13 APB							1Q	
Test TI-13 EDM								1Q
Full ISIS Deployment						3Q		
<b>Photonics</b>								
Photonics LLLTV, HDTV, All Digital Signal Path PDR	1Q							
Photonics LLLTV, HDTV, All Digital Signal Path CDR		1Q						
Photonics Reliability Design Changes	2Q							
Photonics LLLTV, HDTV, All Digital Signal Path EDM			3Q					
Photonics LLLTV, HDTV, All Digital Signal Path Sea Test		2Q						
Initiate Photonics Camera Development		2Q						
Photonics Reliability CDR		3Q						
Initiate Photonics Integrated Control and Display			1Q					
Photonics Camera Development Improvement CDR			2Q					
Photonics Reliability Sea Test			3Q					
Photonics Integrated Control and Display CDR				3Q				
Photonics Camera Development EDM				4Q				
<b>Patriot for Photonics</b>								
Patriot for Photonics EDM	1Q							

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COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0676 IMPROV IDENTIFICATION			3.058	3.804	3.387	2.911	2.916	2.704	2.622	2.721
RDT&E Articles Qty										
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> Reliable and secure Navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. 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). The Improved ID Development project unit (0676) addresses the Navy Lead of a Mk XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable.</p> <p>The funds provide for integration of Mode 5 into the AN/UPX-29 (V) IFF system which interfaces with the AEGIS (US Navy phased array radar-based combat system) baseline weapon system and for other AN/UPX-29 (V) improvements e.g. Antenna Modifications.</p> <p>The RDT&amp;E article started in FY 2005 has been used to test the integration of Mode 5 into the AN/UPX-24 (V) Processor, the major component of the AN/UPX-29 System, and for use in Combat System Certification of Mode 5 in AEGIS.</p> <p>FY 2008 and out RDT&amp;E funding is for AN/UPX-29 (V) improvements to include, Fast Ethernet, open architecture UPX-24 improvements and OE-120 replacement.</p>										

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<b>(U) B. Accomplishments/Planned Program</b>					
Mark XIIA Mode 5 Improvements for AN/UPX-29	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	1.508	1.315	0.918	0.465	
RDT&E Articles Quantity					
Engineering and integration development of MARK XIIA Improvements to the AN/UPX-29 (V). Correct deficiencies from Developmental Test B1 and Operational Test B1. (DTB1 - OTB1). Develop AN/UPX-29 interface capability.					
AN/UPX-29 (V) Software Development	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	1.093	1.686	1.285	0.300	
RDT&E Articles Quantity					
Development of MARK XIIA Improvement to the AN/UPX-29 (V) system software for interface with AEGIS weapon system and core Integrated Logistics Support (ILS) documents; formalize hardware/software configuration; update technical data. Develop ILS documentation in support of DT-C1/OT-C1 and software for AN/UPX-29 (V) interface. Correct DT-C1/OT-C1 software deficiencies and baseline software and documentation.					
Mark XIIA Mode 5 Development and Operational	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	0.457	0.803	0.934	1.046	
RDT&E Articles Quantity					
Provide support for MARK XIIA Mode 5 DT/OA and provide test asset for Mark XIIA Mode 5 DT/OT B1 and AEGIS Combat system development site. Provide support for MARK XIIA Improvements to the AN/UPX-29(V) DT-B1/OT-B1. Provide support for AEGIS Combat System operational demonstration. Provide Support for AEGIS Combat System certification.					
AN/UPX-29 (V) - OE-120 Antenna Replacement	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost			0.250	1.100	
RDT&E Articles Quantity					
Engineering and integration development of the new OE-120 antenna replacement. Develop design studies and test procedures, draft specifications, and perform system integration efforts.					

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APPROPRIATION/BUDGET ACTIVITY <b>RD TEN, NAVY/BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS				PROJECT NUMBER AND NAME 0676 IMPROV IDENTIFICATION DEV				
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
285100: Identification Systems - OPN	24.387	27.066	29.835	35.762	39.504	26.918	35.289	35.958	Continuing	Continuing
<b>D. ACQUISITION STRATEGY:</b>										
The Acquisition Strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.										

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2007					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				0676 IMPROV IDENTIFICATION DEV					
RESEARCH DEVELOPMENT TEST & EVALUATION, N/BA-5			0604777N NAVIGATION / ID SYSTEMS									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WX	NAWCAD, St. Inigoes MD	1.333	0.300	11/06	0.308	11/07	0.700	11/08	Continuing	Continuing	
Ship Integration	WX	NAWCAD, St. Inigoes MD	0.810	0.250	11/06	0.430	11/07	0.445	11/08	Continuing	Continuing	
Systems Engineering	WX	NAWCAD, St. Inigoes MD	2.648	0.665	11/06	0.693	11/07	0.420	11/08	Continuing	Continuing	
Subtotal Product Development			4.791	1.215		1.431		1.565		Continuing	Continuing	
Remarks:												
Configuration Management	WX	NAWCAD, St. Inigoes MD	0.169	0.300	11/06	0.300	11/07	0.200	11/08	Continuing	Continuing	
ILS	WX	NAWCAD, St. Inigoes MD	1.284	0.486	11/06	0.285	11/07	0.249	11/08	Continuing	Continuing	
Software Development	WX	Various	1.980	0.400	11/06	0.400	11/07	0.200	11/08	Continuing	Continuing	
Technical Data	WX	NAWCAD, St. Inigoes MD	0.388	0.500	11/06	0.300	11/07	0.300	11/08	Continuing	Continuing	
Training	WX	NAWCAD, St. Inigoes MD	0.100	0.100	11/06	0.100	11/07	0.097	11/08	Continuing	Continuing	
Subtotal Support			3.921	1.786		1.385		1.046		Continuing	Continuing	
Remarks:												
Developmental Test & Evaluation	WX	Various	0.250	0.200	11/06	0.150	11/07	0.100	11/08	Continuing	Continuing	
Operational Test & Evaluation	WX	NAWCAD, St. Inigoes MD	0.568	0.300	11/06	0.300	11/07	0.100	11/08	Continuing	Continuing	
Test Assets	WX	NAWCAD, St. Inigoes MD	0.250	0.303	11/06	0.121	11/07	0.100	11/08	Continuing	Continuing	
Subtotal T&E			1.068	0.803		0.571		0.300		Continuing	Continuing	
MANAGEMENT												
Subtotal Management												
Remarks:												
Total Cost			9.780	3.804		3.387		2.911		Continuing	Continuing	
Remarks:												



UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
<b>RDT&amp;BA-5</b>	0604777N NAVIGATION/ID SYSTEMS			0676 COMBAT ID SYSTEMS				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone C (MS C)	4Q							
Interim NSA Certification	3Q							
Final NSA Certification	4Q							
Full Rate Production Decision Review (FRPDR) & IOC				1Q				
Low-Rate Initial Production Long Lead Procurement	3Q							
Low-Rate Initial Production Contract Award/Options	4Q	2Q	1Q					
Low-Rate Initial Production Deliveries (DI, CXP)		3Q-4Q	1Q-4Q	1Q-4Q	1Q			
Delta DT	3Q							
FRP Deliveries					1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Prepare & Evaluate ECPs/SCDs	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Surface Combat Systems Center (SCSC)	1Q-4Q	1Q-2Q						
Production Line Insertion			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Host Platform Integrations (Air)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Developmental Testing (DT-B1)	1Q							
Technical Evaluation (DT-C1)		2Q-4Q						
Operational Evaluation (OT-C1)			2Q-3Q					
Operational Test Readiness Review (OTRR) OA	2Q							
Operational Test Readiness Review (OTRR) OPEVAL		4Q						
Operational Testing (OT-B1)	2Q-3Q							
OPEVAL Out Brief			3Q-4Q					
Follow-on Test and Evaluation				2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
DDG 103 (AN/UPX-29(V)) Delivery	2Q							

<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification							DATE:		
							<b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>		0604777N NAVIGATION/ID SYSTEMS				0921 NAVSTAR GPS EQUIPMENT			
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost		19.518	21.375	19.220	28.397	22.165	19.365	25.181	25.620
RDT&E Articles Qty									
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>									
<p>The mission of the GPS program efforts is to provide assured and protected navigation solutions to the war fighters through supported, affordable, and integrated systems. RDT&amp;E funds are used to perform all the non-recurring Global Positioning System (GPS) Surface Ship, Submarine and Aircraft Integration efforts. GPS continues to be integrated in all DoD platforms in accordance with Public Law 103-160, its amendment 105-261 (National Defense Authorization Acts for FYs 94 and 99 respectively) which make development of enhanced GPS an "urgent national security priority", and CJCS Instruction 6130.01(Ser). This direction is in keeping with the National Security/Presidential Directive (NSPD)-39 of 15 December 2004 and its current solutions are well-supported by numerous studies and analyses that include Defense Science Board Task Force reports (October 2005), the DoD's GPS II System Architecture/Requirements Definition (SA/RD) of January 2003, and various DoD and Navy requirements documents. The Navigation Warfare (NAVWAR) , initiated in FY99, and GPS Modernization efforts were designed to continue the aircraft and shipboard integration efforts outlined by public law and Joint instruction, respond to the well-documented emerging GPS electronic jamming and interference threats by incorporating GPS protection measures, and leverage the DoD's and Navy's growing investment in GPS.</p> <p>The GPS 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. PMW/PMA-170 is the central office responsible for funding all GPS aircraft integration RDT&amp;E efforts performed by over 20 NAVAIR program offices, dozens of DoD/Navy field activities and laboratories, and dozens of contractors. The aircraft installation recurring efforts are funded separately by PMW/PMA-170 and/or the platform program offices with APN dollars. The primary tasks to be accomplished for each of the 102 naval aircraft configurations include: GPS integration design studies; acquisition of lab test and design assets; timing and frequency, development of test hardware and/or software designs; development of Integrated Logistics Support (ILS) elements to support test (operator and maintenance training, technical manuals); and Formal Navy Test and Evaluation (Development and Operational Test). Other tasks include those associated with the development of new hardware and software systems for over 3300 Naval Aircraft to meet GPS flight In controlled airspace (FICA), common navigation air traffic management (ATM), and precision approach and landing system (PALS) requirements when current systems are unsuitable; and associated software for many different aircraft and modifications to the GPS Mission Planning Module for the Naval Mission Planning System (NAVMPMS)/Joint Mission Planning System (JMPS).</p> <p>The Surface Ship and Submarine integration efforts include two vitally important navigation integration initiatives: Navigation Sensor System Interface (NAVSSI) and the AN/WRN-6 replacement. The first program is the NAVSSI development. The NAVSSI is the surface ship system with a requirement of integrating with over 54 systems/interfaces on 131 surface ship platforms. This operational requirement for the NAVSSI is the integration and distribution of real time navigation and time sources, primarily GPS, to combat systems, combat support systems, air alignment systems and support systems. NAVSSI is an evolutionary acquisition development. PMW/PMA 170 began developing a replacement for both the AN/WRN-6 shipboard GPS receiver on non-NAVSSI ships and the Global Positioning System Versa Module Europa Receiver Card (GVRC) shipboard GPS receiver on NAVSSI ships beginning in FY06. Both the WRN-6 and the GVRC are no longer in production and require replacement.</p>									

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT
<p>The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel tasked by OPNAV and ASN (RD&amp;A), 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, OPNAV drafted the Navy Enhanced GPS User Equipment ORD to address operational requirements. These were validated and the ORD was approved on June 7, 2000. With this beginning, OSD directed the first phase of the Navy's overall GPS upgrade program with RDT&amp;E leading to initial procurements of GPS anti-jam (AJ) antennas beginning in 2001 for aircraft and 2002 for ships. RDT&amp;E continues to support platform integration requirements, Developmental Test/Operational Test (DT/OT), as well as the GPS Joint Program Office's (JPO) development of an Advanced Digital Antenna Production (ADAP) program, the Navy's development of a smaller Anti-Jam (AJ) antenna and a conformal low-observable AJ antenna for aircraft with unique requirements, new technology AJ solutions for submarines (Frequency Excision Filter (FEF)), and the integration of AJ protection into handheld receivers. Two similar but separate ACAT III programs (Air and Sea NAVWAR) have been established and have become the basis for the Navy's Naval Air and Sea Navigation Warfare (NAVWAR) program.</p> <p>The second phase (referred to as Air and Sea GPS Modernization) of the Navy's overall GPS User Equipment upgrade, will require RDT&amp;E to support the replacement of existing legacy GPS receivers with enhanced capability receivers and antennas based upon and coordinated with the GPS Joint Program Office Modernized User Equipment (JPO MUE) program. These new receivers and antennas will incorporate GPS Joint Program Office (JPO) and Navy directed and developed technology enhancements to support new signals in space, enhanced receiver security, aircraft operations within controlled airspace and future weapons, combat, and C4I systems requirements such as the development of a precision approach and landing system (PALS). All of these efforts will be directed, tasked, and funded through PMW/PMA-170.</p> <p>The primary Global Positioning System (GPS) shipboard receivers fielded on the majority of U.S. Navy ships today include the AN/WRN-6 and the GPS VME Receiver Card (GVRC). These military GPS receivers provide precise Position, Velocity, and Time (PVT) data required for many combat weapons and navigation systems, as well as providing the time synchronization critical to the network environments. The failure of the GPS receiver ultimately means the loss of GPS for the ship and those systems that depend upon it. However, as GPS devices have proliferated throughout the commercial community, it has become more readily available not only to civilians, but to adversaries as well. As a result, even the military GPS Precise Positioning System (PPS) is more vulnerable today to unintentional and intentional jamming. The new security architecture, known as Selective Availability Anti-Spoof Module (SAASM), addresses this vulnerability, and has been mandated for all military combat GPS receiver procurements beginning in FY07. Additionally, the GPS satellite constellation is being modernized to incorporate new GPS signals from space for both military and civilian users (e.g., M-code and L5). While SAASM-capable GPS receivers are available commercially today, they require modification to support the various combat system requirements and interfaces required by the Navy shipboard systems, and will require modification in the future to implement the new GPS modernized signals (expected to become available in FY11). The WRN-X system will be engineered for immediate implementation of SAASM, and will be an open architecture allowing for modification to implement modernized GPS signals when they become available; thus making it backwards and forwards compatible with all GPS systems (e.g., Y code, M code, (C/A) code (YMCA)).</p> <p>SAASM is also required in GPS receivers being installed in aircraft. Similar to shipboard use, airborne SAASM GPS receivers also require integration and test. PMW/A-170 is leading the SAASM integration effort by organizing integration, testing, and implementation working groups with multiple PMAs at NAVAIR. The guidance developed within these working groups governs SAASM integration in systems fielded across all PMAs as well as products procured and fielded by PMW/A-170 in conjunction with Air NAVWAR Antenna efforts; the Miniature Airborne GPS Receiver (MAGR) is one such receiver.</p>	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT
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**(U) B. Accomplishments/Planned Program**

<b>Air NAVWAR</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	10.347	12.428	7.737	13.767
RDT&E Articles Quantity	0	0	0	0

(U) FY06 ACCOMPLISHMENTS: (\$10.347) Air NAVWAR: Completed AV-8B NAVWAR testing. Continued integration testing on H-53 and complete environmental test on the H-60. Continued technology development for the F/A-18 E/F/G which included monitoring/early development efforts on conformal/LO arrays. Continued development, testing, and integration of the ADAP. Continued participation in joint NAVWAR Memorandum of Understanding (MOU) initiatives with Canada, United Kingdom and Australia.

(U) FY07 PLANS: (\$12.428) Air NAVWAR: Start integration of antenna mounting plate on the F/A-18 E/F/G. Start development of conformal array for F/A-18 E/F/G. Start integration study on E-2D and support platform and system level vulnerability assessments for other potential forward fit platforms. Complete integration and start testing of ADAP on H-53. Complete NAVWAR AJ & SAASM integration and test on AV-8B (Initial Operating Capability (IOC)). Monitor and impact development and testing of small antenna system (SAS) or miniature controlled reception pattern (M-CRPA) AJ antenna. Continue participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

(U) FY08 PLANS: (\$7.737) Air NAVWAR: Complete development of conformal array for F/A-18 E/F/G. Complete ADAP testing on H-53 (IOC). Continue integration efforts on E-2D. Complete integration/testing of antenna mounting plate on F/A-18 E/F/G. Continue vulnerability assessments for potential forward fit platforms and monitoring of potential SAS/M-CRPA solutions. Continue participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

(U) FY09 PLANS: (\$13.767) Air NAVWAR: Start integration of NAVWAR antenna electronics on F/A-18 E/F/G. Complete integration and testing on E-2D (IOC). Continue SAASM integration and testing. Continue vulnerability tests and monitoring of SAS (Small Antenna System)/M-CRPA (Miniaturized - Controlled Reception Pattern Antenna) development. Continue participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

<b>Sea NAVWAR</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	5.745	4.447	4.328	4.964
RDT&E Articles Quantity	0	0	0	0

(U) FY06 ACCOMPLISHMENTS: (\$5.745) Sea NAVWAR: Completed modeling/simulation, integration, DT efforts on selected Phase 1A and 1B sea platforms. Continued submarine AJ antenna pre-acquisition efforts as a result of AoA conclusions. Continued participation in Joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Continued development/integration testing on the ADAP.

(U) FY07 PLANS: (\$4.447) Sea NAVWAR: Complete modeling/simulation, integration, DT efforts on DDG and CG platforms. Conduct modeling/simulation, integration, DT/OA efforts for ADAP on MCM and DDG platforms. Continue participation in Joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Initiate integration of ADAP with LSD platforms.

(U) FY08 PLANS: (\$4.328) Sea NAVWAR: Conduct modeling/simulation, integration, DT efforts for ADAP on CG 47 and CVN 65 platforms. Continue participation in Joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

(U) FY09 PLANS: (\$4.964) Sea NAVWAR: Conduct modeling/simulation, integration, DT efforts for ADAP on CVN 68 and LPD 17 platforms. Continue participation in Joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT

**(U) B. Accomplishments/Planned Program**

GPS Modernization	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.470	1.500	2.188	4.641
RDT&E Articles Quantity	0	0	0	0

(U) FY06 ACCOMPLISHMENTS: (\$1.470) GPS Modernization: Supported the GPS JPO, Program Executive Office Command, Control, Communications, Computers, & Intelligence (PEO C4I), Space & Naval Warfare Systems Command (SPAWAR), Naval Air Systems Command (NAVAIR) and Naval Sea Systems Command (NAVSEA). Began the process of capturing the Navy's Air and Sea platform requirements for the integration of new GPS signals from space.

(U) FY07 PLANS: (\$1.500) GPS Modernization: Continue the above in support of the GPS JPO, PEO C4I, SPAWAR, NAVAIR and NAVSEA. Begin Air and Sea platform specification developments for hardware/software upgrades to support the integration of new capabilities and signals from space.

(U) FY08 PLANS: (\$2.188) GPS Modernization transitions to a full acquisition program which requires market research, acquisition strategies and plans. Perform major document development and pre-planned testing for the various entities of the modernization program.

(U) FY09 PLANS: (\$4.641) GPS Modernization: Continue the above support including integrating on selected platforms, conducting DT/ OT events and reviewing design and logistics

WRN X	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.956	3.000	4.967	5.025
RDT&E Articles Quantity	0	0	0	0

(U) FY06 ACCOMPLISHMENTS: WRN X (\$1.956): Determined the appropriate acquisition strategy for the new WRN-X system or other shipboard receivers. Conducted GPS market investigations and research to scope the level of engineering effort that will be necessary to integrate available GPS engines in the WRN-X system. Worked with the GPS Joint Program Office (JPO), and utilizing the newly available GPS initial specifications and Interface Control Documents, defined the Navy shipboard GPS functional requirements. Worked with other program offices who maintain interfaces with the WRN-6 and GVRC, to determine which legacy interfaces are no longer required, and identified any new or future interfaces that might be required for the WRN X shipboard GPS receiver. Drafted the WRN-X technical specifications or Statement of Objectives (SOO), along with a draft Request for Proposal (RFP)

(U) FY07 PLANS: WRN X (\$3.000): Finalize mandatory acquisition documentation to obtain a Milestone B decision. Conduct appropriate milestone decision review. Finalize the WRN-X technical specifications or SOO. Finalize and issue the RFP. Evaluate responses through a source selection team. Award the WRN-X System Development and Demonstration contract. Begin design, functional allocation, and preparation for System Design Review (SDR).

(U) FY08 PLANS: (\$4.967) Initiate system development and demonstration tasking requirements. Begin preparations for a design readiness review. Finalize all documentation for system integration and system demonstration activities. Update the acquisition strategy and other documents as needed to support Milestone C activities. Intensify efforts to finalize the Performance Based Logistics Strategy and other documents as required.

(U) FY09 PLANS: (\$5.025) Continue preparing all pre-milestone C acquisition documentation requirements. Integrate M-Code User Equipment receiver card in preparation for testing.

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>					
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT						
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>								
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY2011</u>	<u>FY2012</u>	<u>FY2013</u>
(U) OPN Line #2657	14.098	13.168	7.619	10.965	11.195	15.410	16.988	17.488
(U) APN - Common Avionics Line # 0577	8.201	20.164	9.998	9.161	8.038	8.971	9.165	9.379
<b>(U) D. ACQUISITION STRATEGY:</b>								
<p>NAVWAR/GPS Modernization: Participate in GPS Joint Program Office and Warner Robbins ALC FY 01-FY 07 procurements for the GAS-1 anti-jam antenna. Initiate Navy contracting options for smaller array anti-jam antennas and conformal/low observable arrays for selected aircraft. Initiate Navy contracting for the shipboard ground plane and submarine array. Participate with the GPS JPO in their development of an Advanced Digital Antenna Program (ADAP) Line Replaceable Unit (LRU) and identify potential Navy candidate platforms. Participate in GPS JPO procurements wherever practicable for GPS Modernization Enhancements. Develop the Navy's specifications necessary to capture and implement future GPS enhancements. See attached Milestone chart.</p> <p>WRN-X: Investigate Navy contracting options for a WRN-6/GVRC Replacement (WRN-X Modernized Shipboard GPS system). Investigate commercial modernized GPS engines certified through the GPS JPO for application in the WRN-X system. Support the development of the Navy's Modernized GPS User Equipment efforts as they apply specifically to NAVSSI and non-NAVSSI shipboard applications. Work in concert with the WRN-6 sustainment efforts to ensure a coupled solution of obsolescence upgrades (occurring under WRN-6 Sustainment) and modernization tasks (for WRN-X development).</p>								
<b>(U) E. Major Performers:</b>								
SPAWAR Systems Center, San Diego CA	NAVWAR Engineering and Product Development		Award funding Oct of each year					
Naval Air Warfare Center, Pax River, MD	NAVWAR System Engineering and Test		Award funding Oct of each year					
<b>(U) F. Metrics:</b>								
Quarterly program reviews, monthly financial reviews to evaluate cost, schedule, performance, award fee inputs.								

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)							DATE: <b>February 2007</b>					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS				0921 NAVSTAR GPS EQUIPMENT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY08 Cost	FY08 Award Date	FY09 Cost	FY09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	Various	Product Vendors	274.111	3.133	Various	3.032	Various	5.561	Various	Continuing	Continuing	
Product Development (SSC-SD)	WX	SSC-SD	67.059	0.850	10/06	0.850	10/07	0.850	10/08	Continuing	Continuing	
Product Dev (other in house)	WX	Various Field Activities	439.397									
Systems Engineering	Various	Various Govt/Contractor	8.210	3.423	Various	2.825	Various	2.923	Various	Continuing	Continuing	
Subtotal Product Development			788.777	7.406		6.707		9.334		Continuing	Continuing	
Remarks:												
Development Support	Various	Various	12.710									
Software Development	Various	SSC-SD/Platform Primes	7.600	1.000	10/06	0.500	10/07	1.000	10/08	Continuing	Continuing	
Integrated Logistics Support	Various	SSC-SD/NAWC/Various Contractors	3.357	0.900	10/06	0.600	10/07	0.900	10/08	Continuing	Continuing	
Training Development	WX	SSC-SD/NAWC	2.325	0.600	10/06	0.600	10/07	0.600	10/08	Continuing	Continuing	
Technical Data	Various	Platform PMO's	1.900	0.600	10/06	0.600	10/07	0.600	10/08	Continuing	Continuing	
Subtotal Support			27.892	3.100		2.300		3.100		Continuing	Continuing	
Remarks:												

<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS					PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation (NAWC PAX)	WX	NAWC PAX	17.929	3.000	10/06	2.500	10/07	2.500	10/08	Continuing	Continuing	
Test & Evaluation (DCS)	CPAF	DCS CORP PAX	2.926	0.450	10/06	0.450	10/07	0.450	10/08	Continuing	Continuing	
Test & Evaluation (SSC-SD)	WX	SSC-SD	4.031	0.900	10/06	0.900	10/07	0.900	10/08	Continuing	Continuing	
Test & Evaluation Platform Testing	Various	VARIOUS CONTRACTORS	13.297	3.040	Various	3.040	Various	6.266	Various	Continuing	Continuing	
Subtotal T&E			38.183	7.390		6.890		10.116		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	DCS, SAIC, ARINC	8.037	1.217	10/06	1.153	10/07	1.800	10/08	Continuing	Continuing	
Government Engineering Support	WX	SSC, NAWC, WR	6.149	1.600	10/06	1.300	10/07	2.200	10/08	Continuing	Continuing	
Program Management Support	CPAF	DCS, Price Systems	13.521	0.662	10/06	0.870	10/07	1.847	10/08	Continuing	Continuing	
Subtotal Management			27.707	3.479		3.323		5.847		Continuing	Continuing	
Remarks:												
Total Cost			882.559	21.375		19.220		28.397		Continuing	Continuing	
Remarks:												



CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																	DATE: February 2007															
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																	
RDT&E, N / BA-5					0604777N NAVIGATION/ID SYSTEMS										0921 NAVSTAR GPS EQUIPMENT																	
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Sea NAVWAR Acq M/S</b>																																
Sea Phase 1A (GAS-1)																																
Sea Phase 1B (GAS-1)																																
Sea Phase 2 (FEF)																																
Phase 1A & 1B ADAP																																
<div style="display: flex; justify-content: space-between;"> <span>FRP</span> <span>△</span> <span>△</span> <span>IOC</span> </div>																																
<div style="display: flex; justify-content: space-between;"> <span>M/S C FRP</span> <span>△</span> <span>IOC</span> <span>△</span> </div>																																
<div style="display: flex; justify-content: space-between;"> <span>M/S B</span> <span>△</span> <span>M/S C LRIP</span> <span>△</span> <span>FRP</span> <span>△</span> <span>IOC</span> <span>△</span> </div>																																
<b>FEF Development</b>																FEF Development																
<b>Platform T&amp;E M/S</b>																																
Phase 1B GAS-1 DT & OT																																
Phase 2 DT & OT (FEF)																																
Phase 1A & 1B ADAP DT & OT																																
<div style="display: flex; justify-content: space-between;"> <span>Phase 1B CG NRE, DT</span> <span>Sub DT/OT SSN/SSGN</span> <span>Sub DT/OT SSN 774</span> </div>																																
<div style="display: flex; justify-content: space-between;"> <span>1A DT/OT (MCM)</span> <span>1B DT/OT (DDG/LSD)</span> <span>DT (CG47/CVN65)</span> <span>DT (CVN68/LPD17)</span> <span>DT (LHA/LHD)</span> </div>																																
<b>Platform Installation</b>																																
Phase 1A																																
Phase 1B GAS-1																																
Phase 2 (FEF)																																
ADAP																																
<div style="display: flex; justify-content: space-between;"> <span>GAS-1: LCAC, MCM, MHC, FFG</span> <span>GAS-1: DDG, CG</span> <span>ADAP: DDG, CG</span> </div>																																
<div style="display: flex; justify-content: space-between;"> <span>Phase 1A ADAP: LCAC, MCM, MHC, LSD</span> <span>Phase 1B ADAP: DDG, CG, CV(N), LCS, LHA, LHD</span> </div>																																
<b>System Deliveries **</b>																																
<div style="display: flex; justify-content: space-between;"> <span>25</span> <span>39</span> <span>18</span> <span>21</span> <span>51</span> <span>44</span> <span>41</span> <span>56</span> </div>																																

R-1 SHOPPING LIST - Item No. 131

\* ADAP is the Advanced Digital Antenna Production program, the Navy's development of a smaller Anti-Jam (AJ) antenna.

\*\* Quantities are approximate year-end total number of NAVWAR system deliveries including those projected for new construction ships. Quantities do not include RDT&E units or Spares.

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT

WRN-X Development Schedule

ACTIVITY	FY06				FY07				FY08				FY09				FY10				FY11				FY12				FY13			
	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J
MILESTONE*							▲ MS B												▲ MS C LRIP	▲ OTRR	FRP Prep & FRP											
DEVELOPMENT						▲ K Awd (Pre-M/S B efforts)		▲ SDR			▲ PDR				▲ CDR																	
							System Design Development (SDD) w/o M-code						Add M-code (Tech Insert)																			
TESTING									Integr. Testing						DT										FOT&E							
																	Integr. Testing/DT															
																					IOT&E											

\* Change in M/S B to correct error reported at FMB08 budget submit

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT	

GPS Modernization Development Schedule

ACTIVITY	FY06				FY07				FY08				FY09				FY10				FY11				FY12				FY13					
	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J	O	J	A	J		
MILESTONE									Pre Milestone Activities																									
DEVELOPMENT	Program Start																																	
TESTING																																		
					Preferred System Concept																													

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA 5</b>	0604777N NAVIGATION/ID SYSTEMS				0921 NAVSTAR GPS EQUIPMENT			
<b>NAVWAR Air Profile</b>	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Conformal Array Development		2-4Q	1-4Q					
MH-60 R/S DT/OT	1-4Q							
H-53 DT/OT	3Q-4Q	1-4Q	2Q					
AV-8B DT/OT	1-4Q	1Q						
F/A 18 E/F/G DT/OT		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1Q	
E-2D DT/OT		1-4Q	1-4Q	2Q				
<b>NAVWAR Sea Profile</b>								
Phase 1A IOC								
Phase 1B DT/OT	4Q (CG)							
Phase 1B M/S C FRP	4Q							
Phase 1B IOC		3Q						
Phase 2 M/S B (FEF)					2Q			
Phase 2 DT/OT						1-4Q	1-4Q	
Phase 2 M/S C LRIP							2Q	
Phase 2 FRP								2Q
Phase 2 IOC								4Q
Phase 1A & 1B ADAP DT/OT	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q			
Phase 1A & 1B ADAP M/S C FRP		3Q-4Q						
Phase 1A & 1B IOC			3Q					
<b>WRN X</b>								
Milestone B*		3Q						
Milestone C					4Q			
<b>MODERNIZATION</b>								
Milestone B				4Q				

\* Change in M/S B to correct error reported at FMB08 budget submit

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>September 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/ BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 0676 IMPROV IDENTIFICATION DEV		
COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0676 IMPROV IDENTIFICATION			3.058	3.804	3.387	2.911	2.916	2.704
RDT&E Articles Qty								
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> Reliable and secure Navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. 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). The Improved ID Development project unit (0676) addresses the Navy Lead of a Mk XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable.</p> <p>The funds provide for integration of Mode 5 into the AN/UPX-29 (V) IFF system which interfaces with the AEGIS (US Navy phased array radar-based combat system) baseline weapon system and for other AN/UPX-29 (V) improvements e.g. Antenna Modifications.</p> <p>The RDT&amp;E article started in FY 2005 has been used to test the integration of Mode 5 into the AN/UPX-24 (V) Processor, the major component of the AN/UPX-29 System, and for use in Combat System Certification of Mode 5 in AEGIS.</p> <p>FY 2008 and out RDT&amp;E funding is for AN/UPX-29 (V) improvements to include, Fast Ethernet, open architecture UPX-24 improvements and OE-120 replacement.</p>								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/ BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 1253 COMBAT IDENTIFICATION SYSTEMS				
COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1253 Combat Identification Systems			9.278	13.690	11.843	9.651	15.328	14.979	15.232	15.512
RDT&E Articles Qty			18	7	5	5	18			
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> In 1995, the Under Secretary of Defense (Acquisition and Technology)/Vice Chairman, Joint Chiefs of Staff {USD(A7T)/VCJCS} tasked the Services to develop a high-level plan and long-range strategy for migrating to new Mark XII equipment. The services were also tasked to work with participating NATO Allies to develop a new MK XII waveform and document it in NATO Standard Agreement (STANAG). The Navy took the lead in a waveform development effort conducted in coordination with a five nation Technical Working Group (TWG), supported by Joint Services and Industry. The Navy, in conjunction with the TWG, designed, developed, modeled, and tested a new waveform - MK XIIA Mode 5. A separate five nation Communications Security (COMSEC) group, led by the National Security Administration (NSA), developed a new cryptographic algorithm and associated cryptographic equipment interoperability requirements specification. STANAG 4193, Part V has been ratified and promulgated to all NATO nations, and Part VI was approved for promulgation in January 2002.</p> <p>In August 2003 the Navy MK XIIA Mode 5 program was approved for entry in Systems Development and Demonstration (SDD) phase with approval to develop prototypes.</p> <p>Since the Previous President's Budget, it has been determined that the number of articles being procured can be reduced due to the fact that articles are no longer being procured for the EA-6B or for the Fleet Training Center (FTC). In FY 2010, the procurement increased because of a decision to defer procurement of some of these articles until a higher percentage of the fleet is MODE 5 capable.</p>										

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, N/ BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 1253 COMBAT IDENTIFICATION SYSTEMS			
<b>(U) B. Accomplishments/Planned Program</b>					
Mode 5 prototype hardware, cryptographic module	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	6.271	5.051	4.372	3.685	
RDT&E Articles Quantity	18	7	5	5	
Perform development of kits for installation into existing fleet assets includes AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Digital Transponder, AN/APX-111 Interrogator/Transponder, and RT-1832/1918 APX Transponder. Repair and correct deficiencies identified during testing in support of Milestone C decision and procure 18 Low Rate Initial Procurement (LRIP) units in FY 06 to support OPEVAL. LRIP units include Mode 5 cryptographic modules install kits for AN/APX-118/123, AN/UPX-37/41C, R/T-1832/1918 and AN/UPX-24 with associated hardware and software changes to the host boxes.					
Mode 5 systems engineering and ILS	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	0.630	5.082	4.051	3.706	
RDT&E Articles Quantity					
Perform systems engineering and analysis in support of Mode 5 hardware/software development and platform integration efforts on AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Digital Transponder, AN/APX-111 Interrogator/Transponder, RT-1832/1918 APX Transponders, Cryptographic Module, Mode 5 Engineering Test Equipment, and Mode 5 support equipment. The Cryptographic Module includes, but is not limited to, activities such as Integrated Logistics Support, Design and Engineering Studies and Analysis, and Configuration Management performed as the Lead Service.					
Mode 5 Upgrade DT & OT	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	2.377	3.557	3.420	2.260	
RDT&E Articles Quantity					
Perform Mode 5 developmental and operational test phases for AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Transponder, and RT-1832/1918 APX Transponder.					

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, NAVY/BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 1253 COMBAT IDENTIFICATION SYSTEMS				
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
285100: Identification Systems - OPN	23.587	28.567	32.451	36.721	35.259	23.976	33.597	34.269	Continuing	Continuing
058200: Identification Systems - APN-5	8.230	11.148	9.112	6.754	24.086	20.315	31.452	25.992	Continuing	Continuing
<b>D. ACQUISITION STRATEGY:</b>										
The Acquisition Strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.										

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)				DATE: February 2007								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT									
RESEARCH DEVELOPMENT TEST & EVALUATION, N/BA-5			0604777N NAVIGATION / ID SYSTEMS									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Primary Hardware Development	WX	NAWCAD, CHINA LAKE CA		2.551	Dec-07	1.072	Dec-07	0.180	Dec-08	Continuing	Continuing	
Primary Hardware Development	VAR	BAE, GREENLAWN NY	25.783	0.500	Nov-06						26.283	26.283
Primary Hardware Development	TBD	LMSI, OWEGO, NY		2.000	Mar-07	1.100	Dec-07	1.105	Dec-08			
Primary Hardware Development	TBD	NORTHROP GRUMMAN, BETH PAGE, NY				2.200	Dec-07	2.400	Dec-08			
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD		2.104	Oct-07	1.996	Oct-07	1.929	Oct-07			
Systems Engineering	WX	NAWCAD, ST INIGOES MD	5.428	2.500	Oct-07	1.500	Oct-07	1.400	Oct-07			
Subtotal Product Development			31.211	9.655		7.868		7.014		Continuing	Continuing	
Remarks:												
<b>SUPPORT</b>												
Support (ILS)	VAR	VAR	0.317	0.478	Nov-06	0.555	Nov-07	0.377	Nov-08	Continuing	Continuing	
Software Development	VAR	VAR	2.708							Continuing	Continuing	
Technical Data	VAR	VAR	0.053							Continuing	Continuing	
Subtotal Support			3.078	0.478		0.555		0.377		Continuing	Continuing	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
DT	WX	NAWCAD, PATUXENT RIVER MD	6.721	2.892	Nov-06	2.272	Nov-07	1.928	Nov-08	Continuing	Continuing	
OT	WX	NAWCAD, PATUXENT RIVER MD	0.935			0.936	Nov-07	0.186	Nov-08	Continuing	Continuing	
Test Assets	VAR	VAR	0.761	0.665	Nov-06	0.212	Nov-07	0.146	Nov-08			
Subtotal TEST & EVALUATION			8.417	3.557		3.420		2.260		Continuing	Continuing	
Remarks:												
<b>MANAGEMENT</b>												
Contractor Engineering Support	VAR	VAR	0.450								0.450	
Government Engineering Support	VAR	VAR	1.811								1.811	
Program Management Support	VAR	VAR	1.961								1.961	
Travel	WX	NAWCAD, PATUXENT RIVER MD	0.174								0.174	
Subtotal MANAGEMENT			4.396								4.396	
Remarks:												
Total TEST & EVALUATION			47.102	13.690		11.843		9.651		Continuing	Continuing	
Remarks:												

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EXHIBIT R4, Schedule Profile																									DATE: February 2007							
APPROPRIATION/BUDGET ACTIVITY RDT&E.N / BA-5										PROGRAM ELEMENT NUMBER AND NAME 0604777N, NAVIGATION/ID SYSTEM										PROJECT NUMBER AND NAME 1253, COMBAT IDENTIFICATION SYSTEMS												
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>	Interim NSA Cert			▲ MSC	Final NSA Cert			FRPDR & IOG				★																				
<b>Contracts &amp; Deliverables</b>	▲ Long Lead Procure			▲ LRIP Contract Award/Options	▲ LRIP Deliveries (DI, CXP)				▲ Production Line Insertion				▲ KS-950S/I Intg				▲ APX-119 Intg				▲ FRP Deliveries				▲ Mode 5 Spiral Dev							
<b>Development &amp; Engineering</b>	██████████				SCSC				Prepare & Evaluate ECPs/SCDs				Host Platform Integrations (Air)																			
<b>Test &amp; Evaluation Milestones</b>	██████████ DT-B1			▲ OTRR OA	██████████			OT-B1 OA	DT-C1				▲ OTRR OPEVAL	OPEVAL Out Brief				▲ FOT&E Events														
<b>Production Milestones</b>																																
<b>Deliveries</b>																																

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\* Not required for Budget Activities 1, 2, 3, and 6



CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, NAVY/ BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 9999 Congressional Increases			
<b>(U) B. Accomplishments/Planned Program</b>					
9857N, SureTrak	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost	1.341				
RDT&E Articles Quantity					
This project will upgrade the Sure Trak data management software and communication infrastructure and add additional surveillance sensors in order to demonstrate enhanced range safety and force protection information.					
9857C, Sure Trak	FY 06	FY 07	FY 08	FY 09	
Accomplishments/Effort/Subtotal Cost		0.996			
RDT&E Articles Quantity					
Congressional Add for Sure Trak					