

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:		February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7						R-1 ITEM NOMENCLATURE 0205604N Tactical Data Links					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	286.217	37.906	41.614	44.526	19.089	31.183	24.934	25.407	25.883	CONT	CONT
X1743 Link-16 Improvements	15.677	14.879	14.832	14.412	6.177	11.988	7.675	7.819	7.965	CONT	CONT
X2126 ATDLS Integration	270.540	23.027	26.782	30.114	12.912	19.195	17.259	17.588	17.918	CONT	CONT
Quantity of RDT&E Articles	13		9								22
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) This program element (PE) develops and improves the Navy's tactical data link systems. It includes the Link-16 Improvements and Advanced Tactical Data Link Systems (ATDLS) Integration Programs. (U) Link-16 Improvements extends Link-16 technological improvements to existing and developing U.S. Navy data link systems, including Link-11 and Link-22. Near term Link-11 improvements include: Mobile Universal Link Translator System (MULTS) upgrade, Common Shipboard Data Terminal Set (CSDTS), Link-11 Baseline Freeze message standard work, and the NATO Improved Link-11 (NILE) Project. Link-22 will pass TADIL-J data elements beyond the line of sight (HF) using a Time Division Multiple Access (TDMA) protocol and the improved Link-11 waveform. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (C2P) to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions. The Multi-TADIL Capability (MTC) is the initial phase of the Next Generation C2P architecture. Next Generation C2P will be based on open system hardware and software architecture, providing a system capable of supporting critical data link functions, including Link-22, Link-16 Joint Range Extension (JRE) and high throughput Link-16. These projects will allow more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer. (U) The ATDLS Integration Program will integrate the Multifunctional Information Distribution System – Low Volume Terminal (MIDS-LVT) Link-16 terminal into U.S. Navy platforms. This multinational (U.S., France, Germany, Italy, and Spain) cooperative development program was established to design, develop, and deliver low-volume lightweight tactical information system terminals for U.S. and foreign fighter aircraft, helicopters, ships and ground sites. The terminals are designed as a pre-planned product improvement of the Joint Tactical Information Distribution System (JTIDS) Time Division Multiple Access (TDMA) Class II terminal. The goal of the MIDS-LVT program is to produce a terminal that is smaller, lighter, fully compatible with, and as capable as the JTIDS TDMA Class 2 terminals, but suitable for use in platforms that cannot accommodate the bulkier, heavier JTIDS TDMA Class II equipment. This project includes the costs to integrate and test MIDS on the Navy's F/A-18 and selected ship platforms. ATDLS Integration of the MIDS-LVT will also provide selected U.S. Navy and U.S. Marine Corps tactical aircraft such as the F/A-18, P-3, EA-6B, AV-8B, and SH-60; U.S. Navy ships, and U.S. Marine Corps ground units with crypto-secure, jam resistant, low-probability-of-exploitation communication of tactical data and voice at a high data rate. It will have additional capabilities of common grid navigation and automatic relay inherent in the equipment that will enable long-range communication and provide jam resistance. The system will be interoperable among all services and NATO/Allied users equipped with MIDS-LVT or JTIDS Class II/IIA.											

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Exhibit R-2, RDTEN Budget Item Justification
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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	R-1 ITEM NOMENCLATURE 0205604N Tactical Data Links	
<p>(U) ATDLS Integration Program also develops new and improved capabilities for Navy TADIL-J users. The Command and Control Processor is a software development effort that provides an interface between the TADILs (Links 4A, 11, and 16) and major surface ship Command and Control Systems (Advanced Combat Direction System (ACDS) and AEGIS Command and Decision (C&D)). The Common Data Link Management System is a pre-planned product improvement of the Command and Control Processor. The CDLMS will provide translation between TADILs and isolate all tactical data link equipment, message standards and protocols from tactical information processors. This will provide a flexible capability for rapidly exchanging tactical information using a single database for translating various link formats while remaining completely independent of communications equipment and tactical data computing systems. Development of new capabilities in ATDLS includes Low Cost Integration, Dynamic Network Management and the Joint Interface Control Officer Support System (JSS). Low Cost Integration effort develops a Link-16 transmit capability that will be provided to Navy aircraft platforms as a positive Combat ID method of identifying friendly units in the battlespace. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. Joint Interface Control Officer Support System will be the standard joint service toolset to monitor and control Multi-TADIL network architectures.</p> <p>(U) This program element also funds: (1) the development required to accommodate expanded Link-16 operational capabilities for additional warfare areas, (2) development of automated network management aids, and (3) related systems engineering and contractor support efforts.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.</p> <p>(U) NOTE: Defense Emergency Response Fund (DERF) funding of \$7.8M will: (1) increase the scope of the Link-16 Improvement Program to develop new capabilities which are pivotal in support of the Joint and Navy requirement in developing a coherent tactical picture; and (2) crossdeck Dual Net Multi-Frequency Link-11 (DNMFL) Prototypes for data collection and analysis to design and develop DNMFL capability into the Common Data Link Management System (CDLMS).</p>		

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 23)

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EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-7	0205604N Tactical Data Links					X1743 Link-16 Improvements					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	15.677	14.879	14.832	14.412	6.177	11.988	7.675	7.819	7.965	Continuing	Continuing
RDT&E Articles Qty			9								9
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Link-16 Improvements extends Link-16 technological improvements to existing and developing U.S. Navy data link systems, including Link-11 and Link-22. Near term Link-11 improvements include: Mobile Universal Link Translator System (MULTS) upgrade, Common Shipboard Data Terminal Set (CSDTS), Link-11 Baseline Freeze message standard work, and the NATO Improved Link-11 (NILE) Project. Link-22 will pass TADIL-J data elements beyond the line of sight (HF) using a Time Division Multiple Access (TDMA) protocol and the improved Link-11 waveform. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (NGC2P) to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions. The Multi-TADIL Capability (MTC) is the initial phase of the Next Generation C2P architecture. Next Generation C2P will be based on open system hardware and software architecture, providing a system capable of supporting critical data link functions, including Link-22, Link-16 Joint Range Extension (JRE) and High Throughput Link-16. These projects will allow more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer.</p>											

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Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 3 of 23)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X1743 Link-16 Improvements																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">CDLMS / LINK-22 PROGRAM ENHANCEMENTS</td><td style="width: 15%;">FY 02</td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>8.160</td><td>6.994</td><td>1.110</td><td>0.500</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td>9</td><td></td><td></td></tr></table>					CDLMS / LINK-22 PROGRAM ENHANCEMENTS	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	8.160	6.994	1.110	0.500	RDT&E Articles Quantity		9		
CDLMS / LINK-22 PROGRAM ENHANCEMENTS	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	8.160	6.994	1.110	0.500															
RDT&E Articles Quantity		9																	
<div style="border: 1px solid black; padding: 10px; min-height: 150px;"><p>FY 02 Accomplishments: Continued development of CDLMS/Link-22 program enhancements, which include design and development of MTC and the integration of the System Network Controller (SNC). Commenced development of NGC2P design. Commenced development of the MTP Prototype including Link-16 Joint Range Extension, Link-16 Throughput enhancements and Dual Net Link-11 capabilities. Commenced building nine MTP prototype units.</p><p>FY 03 Plan: Complete MTP Prototype development. MTP Prototype will include Extremely High Frequency (EHF) Moderate Data Rate (MDR) Beyond Line of Sight (BLOS) Link-16 capability, Link-16 throughput enhancements and Model 5 Dual Net Link-11 capability. MTP Prototype will be installed on six ships in a battlegroup and tested at sea to obtain real world performance data and three MTP prototypes units will be used for laboratory testing.</p><p>FY 04 Plan: Incorporate enhanced capabilities into NGC2P design. Complete design assessment of MTP Prototype and incorporate results into CDR.</p><p>FY 05 Plan: Conduct Critical Design Review (CDR).</p></div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Multi-Link Test Tool (MLTT) S/W</td><td style="width: 15%;">FY 02</td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>0.797</td><td></td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Multi-Link Test Tool (MLTT) S/W	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.797				RDT&E Articles Quantity				
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<div style="border: 1px solid black; padding: 10px; min-height: 100px;"><p>Completed NILE design and development Subphase 2 software for the Multi-Link Test Tool (MLTT). Certified the Link-Level COMSEC (LLC) and MLTT software applications used in NILE architecture.</p></div>																			

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X1743 Link-16 Improvements		
(U) B. Accomplishments/Planned Program				
CDLMS / LINK-22 Design and Test	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.922	4.306		
RDT&E Articles Quantity				
<p>FY 02 Accomplishments: Completed Link-22 design requirements supporting integration of Link-22 into NGC2P. FY 03 Plan: Continue CDLMS/Link-22 design. Conduct System Requirements Review (SRR) and Preliminary Design Review (PDR). Incorporate results from the MTP Prototype onto NGC2P system design requirements.</p>				
NGC2P INCREMENT 1 CAPABILITY	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.532	13.302	5.677
RDT&E Articles Quantity				
<p>FY 03 Plan: Commence development of NGC2P Increment 1 capability. Commence development of Increment 1 software. Commence development of CDLMS field change and technical manuals and training curricula updates. FY 04 Plan: Continue development of NGC2P Increment 1 capability. Continue development of EHF MDR BLOS capability, Link-16 throughput enhancements and Model 5 Dual Net Link-11 capability as well as continuing the rehosting of current C2P software from CMS-2 to Modern Higher Order Software language. Continue development of CDLMS field change and technical manual development. Continue development of training curricula update. FY 05 Plan: Continue development of NGC2P Increment 1 capability and development of training curricula. Commence shore based development, test and evaluation of NGC2P Increment 1 capability.</p>				

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<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>(U) Funding:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>President's Budget</td> <td style="text-align: right;">15.207</td> <td style="text-align: right;">15.207</td> <td></td> <td></td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">14.879</td> <td style="text-align: right;">14.832</td> <td style="text-align: right;">14.412</td> <td style="text-align: right;">6.177</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.328</td> <td style="text-align: right; border-top: 1px solid black;">-0.375</td> <td style="text-align: right; border-top: 1px solid black;">0</td> <td style="text-align: right; border-top: 1px solid black;">0</td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td>Section 8123: Management Reform Initiative</td> <td style="text-align: right;">-0.134</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SBIR</td> <td style="text-align: right;">-0.323</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Section 313, PL 107-206: Revised Economic Assumptior</td> <td style="text-align: right;">-0.032</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Section 8100 : Business Process Reform</td> <td></td> <td style="text-align: right;">-0.061</td> <td></td> <td></td> </tr> <tr> <td>Section 8135: Economic Assumptions</td> <td style="text-align: right;">-0.040</td> <td style="text-align: right;">-0.085</td> <td></td> <td></td> </tr> <tr> <td>Section 8109: IT Cost Growth</td> <td></td> <td style="text-align: right;">-0.028</td> <td></td> <td></td> </tr> <tr> <td>Section 8029: P.L. 107-248 FY 03 FFRDC Reduction</td> <td></td> <td style="text-align: right;">-0.009</td> <td></td> <td></td> </tr> <tr> <td>Miscellaneous Department Adjustments</td> <td style="text-align: right;">0.201</td> <td style="text-align: right;">-0.192</td> <td></td> <td></td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.328</td> <td style="text-align: right; border-top: 1px solid black;">-0.375</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Project X1743 no longer identifies RDT&E,N funding for the NATO Improved Link Eleven (NILE) In-Service Support Phase (ISSP). The ISSP commenced in FY 02 and the US contribution will be funded with O&M,N funding. The NILE funding that was budgeted in FY 03 has been reallocated to support the completion and assessment of the Multi-TADIL Processor (MTP) Prototype.</p> <p>(U) Schedule:</p> <p style="margin-left: 20px;">The design milestones have slipped from FY 02 to FY 03 and the NGC2P Increment 1 IOC slipped from 4th quarter FY 05 to 3rd quarter FY 07.</p> <p>(U) Technical:</p> <p style="margin-left: 20px;">The technical development approach for the Next Generation Command and Control Processor (C2P) (NGC2P) has been modified to include rapid prototyping of selected NGC2P capabilities referred to as Multi-TADIL Processor (MTP). Consequently, the formal design reviews have been moved to FY03 to take advantage of the results of MTP rapid prototype development that was initiated in FY02. This rapid prototype development approach will enable real world data to be used for the NGC2P development. The MTP set of capabilities will be fielded on seven Model 5 CDLMS configured ships and is referred to as Interim NGC2P. The objective NGC2P will be fielded in two functional increments. Increment 1 will achieve IOC in 3Q/07 and will include Link-16 Joint Range Extension capability and Link-16 high throughput enhancements. Increment 2 will achieve IOC in 1Q/09 and will include Link-22. Due to this change in technical approach and that the Navy has a higher priority to implement Link-16 Joint Range Extension and Link-16 throughput enhancements, the Link-22 IOC has moved to FY 09.</p>						FY 2002	FY 2003	FY 2004	FY 2005	(U) Funding:					President's Budget	15.207	15.207			Current BES/President's Budget	14.879	14.832	14.412	6.177	Total Adjustments	-0.328	-0.375	0	0	Summary of Adjustments					Section 8123: Management Reform Initiative	-0.134				SBIR	-0.323				Section 313, PL 107-206: Revised Economic Assumptior	-0.032				Section 8100 : Business Process Reform		-0.061			Section 8135: Economic Assumptions	-0.040	-0.085			Section 8109: IT Cost Growth		-0.028			Section 8029: P.L. 107-248 FY 03 FFRDC Reduction		-0.009			Miscellaneous Department Adjustments	0.201	-0.192			Total Adjustments	-0.328	-0.375	0.000	0.000
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Exhibit R-2a, RDTEEN Project Justification
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links			PROJECT NUMBER AND NAME X1743 Link-16 Improvements					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN Line 2614 ATDLS	8.584	7.448	16.197	2.402	13.274	11.588	11.801	12.017	Continuing	Continuing
DERF	12.500									
 (U) E. ACQUISITION STRATEGY:										
Next Generation Command and Control Processor and Multi TADIL Processor are utilizing existing cost plus contracts.										

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Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								February 2003				
RDT&E, N / BA-7			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0205604N Tactical Data Links			X1743 Link-16 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
NILE Subphase 2	CPIF	Logicon, San Diego, CA	3.171								3.171	3.171
NILE LLC Dev	CPIF	VIASAT, San Diego, CA	0.500								0.500	0.500
Link-22 Engineering/Integration	WX	SPAWARSSYSCEN, San Diego, CA	3.547								3.547	3.547
Link-22 Integration	CPFF	Logicon, San Diego, CA	0.116								0.116	0.116
Link-22 Network Design	WX	NCTSI, San Diego, CA	0.690								0.690	0.690
Command and Control Processor (C2P)	Various	Various	2.377								2.377	2.377
Multi-TADIL Capability MTC	Various	Various	1.696								1.696	1.696
Next Generation C2P Engineering/Integration	WX	SPAWARSSYSCEN, San Diego, CA	2.000	3.600	11/02	2.700	11/03				8.300	8.300
Next Generation C2P Engineering/Integration	Various	Various		0.734	Various	0.889	Various	0.861	Various			
Next Generation C2P GFE	Various	Various	0.560	1.000	Various	1.091	Various				2.651	2.651
Next Generation C2P Design/Dev	CPFF	APC, Austin, TX	6.313	6.570	Various	6.011	Various	2.151	Various	Continuing	Continuing	Continuing
Next Generation C2P Design/Dev TDA	CPFF	APL/JHU, Laurel, MD	7.585	1.574	Various	1.521	Various	0.656	11/05	Continuing	Continuing	Continuing

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Exhibit R-3 Cost Analysis (page 2)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								February 2003				
RDT&E, N / BA-7			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0205604N Tactical Data Links			X1743 Link-16 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support												
Remarks:												

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Exhibit R-3 Cost Analysis (page 3)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205604N Tactical Data Links			X1743 Link-16 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WX	SPAWARSYSCEN, San Diego, CA	0.731	0.800	Various	1.629	Various	2.019	Various	Continuing	Continuing	Continuing
Subtotal T&E			0.731	0.800		1.629		2.019				
Remarks:												
Engineering Support and Travel	Various	Various	1.270	0.554	Various	0.571	Various	0.490	Various	Continuing	Continuing	Continuing
Subtotal Management			1.270	0.554		0.571		0.490				
Remarks:												
Total Cost			30.556	14.832		14.412		6.177				
Remarks:												

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EXHIBIT R4, Schedule Profile																								DATE:								
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										0205604N Tactical Data Links										X1743 Link-16 Improvements												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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				
Program Milestones																																
NGC2P INC 1																																
NGC2P INC 2																																
Engineering Milestones																																
NGC2P INC 1																																
NGC2P INC 2																																
Test & Evaluation Milestones																																
MLTT																																
LLC																																
MTP Prototype																																
NGC2P INC 1																																
NGC2P INC 2																																
Contract Milestones																																
LLC																																
NGC2P																																

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Exhibit R-4, Schedule Profile
(Exhibit R-4, page 11 of 23)

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 12 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-7	0205604N Tactical Data Links					X2126 ATDLS Integration					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	270.540	23.027	26.782	30.114	12.912	19.195	17.259	17.588	17.918	Continuing	Continuing
RDT&E Articles Qty	13										13
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) The ATDLS Integration program will integrate the Multifunctional Information Distribution System – Low Volume Terminal (MIDS-LVT) Link-16 terminal into U.S. Navy platforms. This multinational (U.S., France, Germany, Italy, and Spain) cooperative development program was established to design, develop, and deliver low-volume lightweight tactical information system terminals for U.S. and foreign fighter aircraft, helicopters, ships and ground sites. The terminals are designed as a Pre-Planned Product Improvement (P3I) of the Joint Tactical Information Distribution System (JTIDS) Time Division Multiple Access (TDMA) Class II terminal. The goal of the MIDS-LVT program is to produce a terminal that is smaller, lighter, fully compatible with, and as capable as the JTIDS TDMA Class II terminals, but suitable for use in platforms that cannot accommodate the bulkier, heavier JTIDS TDMA Class II equipment. This project includes the costs to integrate and test MIDS on the Navy's F/A-18 and selected ship platforms. ATDLS Integration of the MIDS-LVT will also provide selected U.S. Navy and U.S. Marine Corps tactical aircraft such as the F/A-18, P-3, EA-6B, AV-8B and SH-60; U.S. Navy ships, and U.S. Marine Corps ground units with crypto-secure, jam resistant, low-probability-of-exploitation communication of tactical data and voice at a high data rate. It will have additional capabilities of common grid navigation and automatic relay inherent in the equipment that will enable long-range communication and provide jam resistance. The system will be interoperable among all services and NATO/Allied users equipped with MIDS-LVT or JTIDS Class II/IIA.</p> <p>(U) ATDLS Improvement program also develops new and improved capabilities for Navy TADIL-J users. The Command and Control Processor (C2P) is a software development effort that provides an interface between the TADILs (Link 4A, 11, and 16) and major surface ship Command and Control Systems (Advanced Combat Direction System (ACDS) and AEGIS C&D). Common Data Link Management System (CDLMS) is a Pre-planned Product Improvement (P3I) of the C2P. The CDLMS will provide translation between TADILs and isolate all tactical data link equipment, message standards and protocols from tactical information processors. This will provide a flexible capability for rapidly exchanging tactical information using a single database for translating various link formats while remaining completely independent of communications equipment and tactical data computing systems. Development of new capabilities in ATDLS includes Low Cost Integration, Dynamic Network Management and Joint Interface Control Officer Support System (JSS). Low Cost Integration effort develops a Link-16 transmit capability that will be provided to Navy aircraft platforms as a positive Combat ID method of identifying friendly units in the battlespace. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. The Joint Interface Control Officer Support System will be the standard service toolset to monitor and control Multi-TADIL network architectures. Engineering changes to the tactical data links will support the objective of achieving a Single Integrated Air Picture (SIAP) across the Joint Forces in projected operational environments.</p> <p>(U) This project also funds: (1) the development required to accommodate expanded Link-16 operational capabilities for additional warfare areas, (2) development of automated network management aids, and (3) related systems engineering and contractor support efforts.</p> <p>(U) Additional terminal development costs are funded in program element 0604771D.</p>											

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 13 of 23)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration		
(U) B. Accomplishments/Planned Program				
F/A-18 MIDS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	16.627	15.481	2.937	
RDT&E Articles Quantity				
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">FY 02 Accomplishments: Completed F/A-18 MIDS integration software, flight testing and TECHEVAL. FY 03 Plan: Complete F/A-18 MIDS OPEVAL. Conduct F/A-18 system interoperability certification testing. FY 04 Plan: Conduct F/A-18 MIDS EMC features regression testing. Correction and testing of deficiencies identified during OPEVAL.</div>				
MIDS on Ship (MOS)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.951	2.491		
RDT&E Articles Quantity				
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">FY 02 Accomplishments: Integrated MIDS on Ship with Model 5 Combat System and conducted testing. FY 03 Plan: Complete MIDS on Ship development and operational testing.</div>				
TADIL-J System Engineering	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.655	2.341		
RDT&E Articles Quantity				
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">FY 02 Accomplishments: Continued TADIL-J System Engineering which included investigating future capabilities and enhancements and ensured Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension, dynamic network management and time critical strike applications. FY 03 Plan: Continue TADIL-J System Engineering which included investigating future capabilities and enhancements and ensured Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension, dynamic network management, time critical strike, and support integration concepts for additional aircraft.</div>				

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 14 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration		
(U) B. Accomplishments/Planned Program				
C2P Performance Upgrades	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.794	1.173		
RDT&E Articles Quantity				
<div style="border: 1px solid black; padding: 5px;"> <p>FY 02 Accomplishments: Continue Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.</p> <p>FY 03 Plan: Completed Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.</p> </div>				
Low Cost Integration	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.110	3.867	
RDT&E Articles Quantity				
<div style="border: 1px solid black; padding: 5px;"> <p>FY 03 Plan: Conduct Low Cost Integration preliminary and critical design reviews and develop prototype for initial testing and certification.</p> <p>FY 04 Plan: Conduct Low Cost Integration service and joint interoperability certification while performing lab integration testing and demonstration.</p> </div>				
Dynamic Network Management	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.186	15.866	12.912
RDT&E Articles Quantity				
<div style="border: 1px solid black; padding: 5px;"> <p>FY 03 Plan: Commence Dynamic Network Management (DNM) development to provide automatic reconfiguration of Link-16 networks and dynamic reallocation of network capacity to meet emergent warfighter requirements in the field as operations evolve. Supports the development of dynamic reconfiguration protocols and algorithms, preliminary DNM design, laboratory and simulation testing and Fleet Battle Experiment. Conduct Preliminary Design Review (PDR).</p> <p>FY 04 Plan: Continue Dynamic Network Management development to provide automatic reconfiguration of Link-16 networks and dynamic reallocation of network capacity to meet emergent warfighter requirements in the field as operations evolve. Supports the development of Link-16 terminal and test bed hardware and software modifications to implement DNM capability. Develop improved Link-16 capabilities including enhanced throughput and organic navigation.</p> <p>FY 05 Plan: Continue Dynamic Network Management development to provide automatic reconfiguration of Link-16 networks and dynamic reallocation of network capacity to meet emergent warfighter requirements in the field as operations evolve. Complete Link-16 terminal and test bed modifications. Perform software formal qualification tests (SFQT), link certification and participate in Fleet exercise to evaluate DNM maturity. Commence designing and development of platform integration of DNM into ship and aircraft. Develop Dynamic Network Management integrated logistics support products including system-operating procedures.</p> </div>				

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 15 of 23)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration		
(U) B. Accomplishments/Planned Program				
JT Interface Cont. Off. Supt System (JSS)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			7.444	
RDT&E Articles Quantity				
<div>FY 04 Plan: Conduct software development and integration of JICO Support System into Navy platforms.</div>				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																																																												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration																																																																													
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">(U) Funding:</th> <th style="text-align: right; width: 15%;">FY 2002</th> <th style="text-align: right; width: 15%;">FY 2003</th> <th style="text-align: right; width: 15%;">FY 2004</th> <th style="text-align: right; width: 15%;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>President's Budget</td> <td style="text-align: right;">24.155</td> <td style="text-align: right;">27.460</td> <td></td> <td></td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">23.027</td> <td style="text-align: right;">26.782</td> <td style="text-align: right;">30.114</td> <td style="text-align: right;">12.912</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-1.128</td> <td style="text-align: right; border-top: 1px solid black;">-0.678</td> <td style="text-align: right; border-top: 1px solid black;">0</td> <td style="text-align: right; border-top: 1px solid black;">0</td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td>Section 8123: Management Reform Initiative</td> <td style="text-align: right;">-0.213</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FFRDC</td> <td style="text-align: right;">-0.002</td> <td style="text-align: right;">-0.016</td> <td></td> <td></td> </tr> <tr> <td>SBIR</td> <td style="text-align: right;">-0.338</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sec. 313, PL 107-206: Revised Economic Assumptions</td> <td style="text-align: right;">-0.051</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Section 8135: Economic Assumptions</td> <td style="text-align: right;">-0.065</td> <td style="text-align: right;">-0.154</td> <td></td> <td></td> </tr> <tr> <td>Federal Technology Transfer</td> <td style="text-align: right;">-0.011</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Miscellaneous Adjustments</td> <td style="text-align: right;">-0.448</td> <td style="text-align: right;">-0.348</td> <td></td> <td></td> </tr> <tr> <td>Section 8135: Business Process Reform</td> <td></td> <td style="text-align: right;">-0.110</td> <td></td> <td></td> </tr> <tr> <td>Section 8109: IT Cost Growth</td> <td></td> <td style="text-align: right;">-0.050</td> <td></td> <td></td> </tr> <tr> <td style="padding-top: 20px;">Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black; border-bottom: 3px double black;">-1.128</td> <td style="text-align: right; border-top: 1px solid black; border-bottom: 3px double black;">-0.678</td> <td style="text-align: right; border-top: 1px solid black; border-bottom: 3px double black;">0.000</td> <td style="text-align: right; border-top: 1px solid black; border-bottom: 3px double black;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Commencing in FY 04, Project X2126 no longer separately identifies TADIL-J systems engineering in the program plans. TADIL-J systems engineering is included in the applicable product line.</p> <p>(U) Schedule:</p> <p>Completion of Performance Upgrades development efforts slipped from FY 02 to FY 03. The operational test for CDLMS software version 2.0 slipped from FY 02 to FY 03 due to the slip in the AEGIS Baseline 6.1 certification test.</p> <p>(U) Technical: Not applicable.</p>					(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005	President's Budget	24.155	27.460			Current BES/President's Budget	23.027	26.782	30.114	12.912	Total Adjustments	-1.128	-0.678	0	0	Summary of Adjustments					Section 8123: Management Reform Initiative	-0.213				FFRDC	-0.002	-0.016			SBIR	-0.338				Sec. 313, PL 107-206: Revised Economic Assumptions	-0.051				Section 8135: Economic Assumptions	-0.065	-0.154			Federal Technology Transfer	-0.011				Miscellaneous Adjustments	-0.448	-0.348			Section 8135: Business Process Reform		-0.110			Section 8109: IT Cost Growth		-0.050			Total Adjustments	-1.128	-0.678	0.000	0.000
(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																																																											
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EXHIBIT R-2a, RDT&E Project Justification								DATE:		February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links			PROJECT NUMBER AND NAME X2126 ATDLS Integration					

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN LINE LI 052500 F/A-18	37.624	48.206	48.207	50.573	42.974	48.965	49.926	50.879	Continuing	Continuing
RDT&E,DA	16.328	10.797	10.863	18.859	19.205	19.566	19.955	20.375	Continuing	Continuing
OPN LI 2614 ATDLS	8.584	7.536	16.197	2.402	13.274	11.588	11.801	12.017	Continuing	Continuing
DERF	12.500									

SCN - Funding for ATDLS hardware is not separately identified in the SCN budget exhibits.
 RELATED RDT&E:
 PE 0604771D/P771 - Link-16: Link-16 systems engineering support.
 PE 0604771D/P773 - MIDS: MIDS-LVT terminal development.

(U) E. ACQUISITION STRATEGY:

F/A-18 MIDS aircraft integration is utilizing cost plus fixed fee contracts on an R&D Basic Ordering Agreement with Boeing. MIDS integration and testing, TADIL-J systems engineering, and performance upgrades development are utilizing existing cost plus contracts.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205604N Tactical Data Links			X2126 ATDLS Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
F/A-18 Integration	PD	NAVAIRSYSCOM, PAX River, MD	142.970	6.999	Various	1.217	Various				151.186	151.186
TADIL-J System Engineering	WX	SPAWARSYSCEN, San Diego, CA	27.009	1.224	Various						28.233	28.233
TADIL-J System Engineering	Various	Various	3.726	0.928	Various						4.654	4.654
MIDS on Ship	CPIF	BAE Systems, Wayne, NJ (DLS)	13.944	0.500	12/02						14.444	14.444
MIDS on Ship	Various	Various	44.240	0.900	Various						45.140	45.140
Performance Upgrades	WX	SPAWARSYSCEN, San Diego, CA	13.143	1.070							14.213	14.213
Performance Upgrades	Various	Various	5.236								5.236	5.236
Air Defense System Integrator	CPFF	APC, Austin, TX	2.059								2.059	2.059
Dual Net Link-11	WX	Various	1.866								1.866	1.866
Korean Air Defense Sys Impr	CPFF	JHU/APL, MD	0.900								0.900	0.900
DNMFL Prototypes	Various	Various	2.127								2.127	2.127
Low Cost Integration	Various	Various		1.946	Various	2.528	11/03			Continuing	Continuing	Continuing
DNM Sys Engineering	WX	SPAWARSYSCEN, San Diego, CA		0.500	11/02	2.750	11/03	1.900	11/04	Continuing	Continuing	Continuing
DNM Development	CPFF	Northrup Grumman		1.840	03/03	7.781	11/03	2.100	11/04	Continuing	Continuing	Continuing
DNM Development	MIPR	Warner Robbins AFB		0.600								
DNM Integration	WX	Various				1.100	11/03	3.218	11/04	Continuing	Continuing	Continuing
JSS Software Dev and Integration	MP	ESC Hanscom AFB, MA				6.471	03/04				6.471	6.471
JSS Software Dev and Integration	WX	SPAWARSYSCEN, San Diego, CA				0.973	11/03				0.973	0.973
Subtotal Product Development			257.220	16.507		22.820		7.218				
Remarks:												

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Exhibit R-3 Cost Analysis (page 3)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205604N Tactical Data Links			X2126 ATDLS Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various	4.025								4.025	4.025
MIDS F/A-18 T&E	WX	SPAWARSYSCEN San Diego, CA	9.088	2.720	Various	0.496	Various				12.304	12.304
MIDS F/A-18 T&E	Various	Various	7.863	4.533	Various	1.197	Various				13.593	13.593
MIDS on SHIP T&E	PD	OPTEVFOR Norfolk, VA	0.092	0.500	Various						0.592	0.592
MIDS on SHIP T&E	WX	SPAWARSYSCEN San Diego, CA	0.940	0.400	11/02						1.340	1.340
MIDS Test Assets	SS/CPAF/IF	MIDSCO Fairfield, NJ	6.594								6.594	6.594
Low Cost Integration T&E	Various	Various				0.749	Various			Continuing	Continuing	Continuing
Dynamic Network Management	WX	SPAWARSYSCEN San Diego, CA				2.933	12/03	3.855	Various	Continuing	Continuing	Continuing
Subtotal T&E			28.602	8.153		5.375		3.855				Continuing
Remarks:												
Engineering Support and Travel	Various	Various	7.745	2.122	Various	1.919	Various	1.839	Various	Continuing	Continuing	Continuing
Subtotal Management			7.745	2.122		1.919		1.839		0.000		
Remarks:												
Total Cost			293.567	26.782		30.114		12.912				
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R4, Schedule Profile																								DATE:								
																								February 2003								
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME									PROJECT NUMBER AND NAME														
RDT&E, N / BA-7									0205604N Tactical Data Links									X2126 ATDLS Integration														
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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				
Program Milestones																																
MIDS			LRIP 3 △		DAB MS III △		IOC △																									
DNM																				IOC △												
Engineering Milestones																																
DNM										CDR △																						
LCI																Platform Integration △																
Test & Evaluation Milestones																																
F/A-18		DT-IIA-7 △		TECHEVAL △		Interoperability Cert △																										
Ship		DT-IIB-3 △		DT-II-4 △			TECHEVAL △																									
LCI										Platform Lab Testing △																						
										Interop Cert △											Platform Integ Testing △											
DNM																																

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Exhibit R-4a, Schedule Detail
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