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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: FEBRUARY 2005	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604574N / NAVY TACTICAL COMPUTER RESOURCES				
COST (\$ in Millions)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		12.235	8.298	2.220	2.701	2.774	2.830	2.897	2.965
1353 Standard Hardware		12.235	6.320	2.220	2.701	2.774	2.830	2.897	2.965
9579 Compact Ultra Fast Laser System Development			1.978						

A. Mission Description and Budget Item Justification: The AN/UYQ-70(V) program must incorporate state-of-the-art Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technological improvements continuously and rapidly, in order to meet rapidly evolving future customer requirements. The AN/UYQ-70(V) program provides the de facto standard for state-of-the-art commercial-off-the-shelf (COTS) processors and displays for all mission-essential/mission-critical combat systems, weapons systems, self-defense systems, command and control systems, and communications systems utilized in all USN combatants. The Q-70 product baseline continues to require increased capability in order to satisfy the needs of future FORCENET network-centric Open Architecture combat system designs. This funding also supports the continuing spiral development of Q-70 and Future Combat System Display (FCDS), which will be the standard display system for all new combat systems on all new ship designs. This FCDS development will incorporate vastly improved HSI (human systems interface) characteristics, and migration to full Open Architecture Computing Environment (OACE) requirements. Execution of FCDS is entirely dependent upon this RDT&E funding.

*FY04 includes three Congressional Adds totaling \$10.4M
Q-70 Secure Voice System - 2.550 million
Ultra Thin Client Network Solution - 1.500 million
Q-70 technology - 6.350 million

**FY05 includes two Congressional Adds totaling \$5.978M
Q-70 technology - 4.000 million
Compact Ultra Fast Laser System Development - 1.978 million

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EXHIBIT R-2a, RDT&E Project Justification							DATE: FEBRUARY 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES			PROJECT NUMBER AND NAME; 1353/Standard Hardware 1353 Standard Hardware			
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	12.235	6.320	2.220	2.701	2.774	2.830	2.897	2.965
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>A. Mission Description and Budget Item Justification: The AN/UYQ-70(V) program must incorporate state-of-the-art Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technological improvements continuously and rapidly, in order to meet rapidly evolving future customer requirements. The AN/UYQ-70(V) program provides the de facto standard for state-of-the-art commercial-off-the-shelf (COTS) processors and displays for all mission-essential/mission-critical combat systems, weapons systems, self-defense systems, command and control systems, and communications systems utilized in all USN combatants. The Q-70 product baseline continues to require increased capability in order to satisfy the needs of future FORCENET network-centric Open Architecture combat system designs. This funding also supports the continuing spiral development of Q-70 and Future Combat System Display (FCDS), which will be the standard display system for all new combat systems on all new ship designs. This FCDS development will incorporate vastly improved HSI (human systems interface) characteristics, and migration to full Open Architecture Computing Environment (OACE) requirements. Execution of FCDS is entirely dependent upon this RDT&E funding.</p>								

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Exhibit R-2, RDTEN Budget Item Justification
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES	PROJECT NUMBER AND NAME; 1353/Standard Hardware 1353 Standard Hardware		

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	8.185	6.320	2.220	2.774
RDT&E Articles Quantity				

FY2004 Accomplishments: Continued development of Q-70 technical insertion initiatives including a replacement for the legacy SPA-25G radar, a modification to the present CND variant to meet SLQ-32 and NSSMS requirements, development of LAN security features, and development of several new operating system baselines. Requirements gathering and analysis for FCDS effort. FY04 funding includes Congressional Add of \$6.350.

FY2005 Plan: Preparation for FCDS development contract competition. Continue technology insertion efforts for production Q-70 contract. FY05 funding includes Congressional Add of \$4.0M.

FY2006 Plan: Contract award for FCDS development, and begin development of FCDS. Continue technology insertion efforts for production Q-70 contract.

FY2007 Plan: Continue development of FCDS. Continue technology insertion efforts for production Q-70 contract.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.550	0.000	0.000	0.000
RDT&E Articles Quantity				

FY 2004 Accomplishments: Development of modifications of the Q-70 Secure Voice System (SVS) to meet carrier class communications and environmental requirements . Funding is Congressional Add.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.500	0.000	0.000	0.000
RDT&E Articles Quantity				

FY 2004 Accomplishments: Continued development of a stateless, ultra thin client network solution that provides data separation and privacy over the network via NSA certified solution that supports secure voice, video, and data requirements of the war fighter. Funding is Congressional Add.

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C. PROGRAM CHANGE SUMMARY:

	FY 2004	FY 2005	FY 2006	FY 2007
Funding:				
FY2005 President' Budget	12.521	2.381	2.472	2.984
FY2006 President's Budget	12.235	8.298	2.220	2.701
Total Adjustments	-0.286	5.917	-0.252	-0.283
Summary of Adjustments				
Non-pay Inflation Savings	-0.010			
Cancelled Accounts	-0.006			
Management Improvements	-0.270			
AN/UYQ-70 Congressional Add		4.000		
Miscellaneous Adjustments		-0.083	-0.252	-0.283
Subtotal	-0.286	3.917	-0.252	-0.283

Technical:

N/A

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES				PROJECT NUMBER AND NAME 1353 Standard Hardware			
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</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>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
Other Program Funding Summary Related RDT&E										
PE 0603382N (ADV COMBAT SYS TECHNOLOGY)	14.993	66.951	30.166	30.753	31.923	32.631	33.396	34.047		
PE 0603502N (SHALLOW WATER MCM)	126.231	108.016	122.122	140.480	161.880	245.151	233.104	240.239		
PE 0604307N (AEGIS WEAPON SYS MODS)	215.584	157.159	216.313	227.951	254.972	235.232	255.320	273.179		
PE 0604366N (STD MSL IMP)	73.654	110.775	145.634	188.623	223.877	240.847	163.322	71.380		
PE 0604755N (SHIP SELF DEFENSE)	51.774	66.059	45.931	7.136	6.308	5.495	0.780	0.227		
PE 0604503N SSN-688/TRIDENT MOD	63.130	62.235	55.738	75.033	75.136	71.721	68.186	80.618		
PE 0604561N SSN-21 DEVELOPMENT	23.596	2.972	2.928	3.462	2.745	2.796	2.978	3.039		
PE 0604562N SUB TACT WARFARE SYS	31.456	48.456	40.690	55.089	57.068	58.199	59.467	60.715		
F. MAJOR PERFORMERS:										
N/A										

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Exhibit R-3 Cost Analysis (page 1)											DATE: FEBRUARY 2005			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME; 1353/Standard Hardware								
RDT&E, N / BA-5			0604574N / NAVY TACTICAL COMPUTER RESOURCES			1353 Standard Hardware								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	195.500										195.500	
Ancillary Hardware Development	Various	Various	0.650										0.650	
Component Development													0.000	
Ship Integration													0.000	
Ship Suitability													0.000	
Systems Engineering	Various	Various	77.222	5.000	05/04	3.547	10/04	1.247	10/05	1.682	10/06	Continuing	Continuing	
Training Development			1.000										1.000	
Licenses			1.000										1.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Product Development			275.372	5.000		3.547		1.247		1.682		Continuing	Continuing	
Remarks:														
Development Support	Various	Various		1.000		2.000						Continuing	Continuing	
Software Development	Various	Various	39.109	0.900								Continuing	Continuing	
Training Development	Various	Various	1.375	0.200								Continuing	Continuing	
Integrated Logistics Support	Various	Various	2.172	0.300								Continuing	Continuing	
Configuration Management	Various	Various	0.700	1.920								Continuing	Continuing	
Technical Data	Various	Various	1.138	0.200								Continuing	Continuing	
GFE													0.000	
Award Fees													0.000	
Subtotal Support			44.494	4.520		2.000		0.000		0.000		Continuing	Continuing	
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)											DATE: FEBRUARY 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604574N / NAVY TACTICAL COMPUTER RESOURCES			PROJECT NUMBER AND NAME; 1353/Standard Hardware 1353 Standard Hardware								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	25.485	0.815		0.343		0.311		0.432		Continuing	Continuing	Continuing
Operational Test & Evaluation	Various	Various	17.528	0.900		0.430		0.430		0.482		Continuing	Continuing	Continuing
Live Fire Test & Evaluation														
Test Assets														
Tooling														
GFE														
Award Fees														
Subtotal T&E			43.013	1.715		0.773		0.741		0.914		Continuing	Continuing	
Remarks:														
Government Engineering Services														
Program Management Support				1.000		0.000		0.000		0.000		Continuing	Continuing	
Subtotal Management			0.000	1.000		0.000		0.000		0.000		Continuing	Continuing	
Total Cost			362.879	12.235		6.320		1.988		2.596		Continuing	Continuing	
Remarks:														

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EXHIBIT R4, Schedule Profile																								DATE:				FEBRUARY 2005					
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME; 1353/Standard Hardware											
RDT&E, N / BA-5										0604574N / NAVY TACTICAL COMPUTER RESOURCES												1353 Standard Hardware											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011				
	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					
Not Applicable																																	

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

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Exhibit R-2, RDTEN Budget Item Justification
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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 10 of 16)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0604574N Navy Tactical Computer Resources	PROJECT NUMBER AND NAME S9579 Compact Ultra Fast Laser System Development																
B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="padding: 5px;">Spectral Beam Comb. Fiber Lasers</th> <th style="padding: 5px;">FY 04</th> <th style="padding: 5px;">FY 05</th> <th style="padding: 5px;">FY 06</th> <th style="padding: 5px;">FY 07</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;">0.000</td> <td style="padding: 5px;">1.978</td> <td style="padding: 5px;">0.000</td> <td style="padding: 5px;">0.000</td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;">N/A</td> <td style="padding: 5px;">N/A</td> <td style="padding: 5px;">N/A</td> <td style="padding: 5px;">N/A</td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 150px;"> <p>FY 05 - Ultra-fast laser systems (systems generating pulses of light with a duration of less than 100 fs) have been employed in a wide variety of areas from material processing, medical procedures, and various diagnostics procedures. The use of ultra-fast systems in the soft kill of missile systems shows great potential, specifically in the short-range surface-to-air missile defense system role, for both military and civilian aircraft and ships. The primary issue with the available ultra-fast laser systems is that typical users have not been concerned with size, but with serviceability. A typical ultra-fast laser system is comprised of many complicated components or sub-systems that are separated to make the system adaptable to the specific requirements of the user. To date, this has made the system too large to mount on aircraft; additionally, these systems have not been rugged enough to place onboard ships. This effort would design and develop the military specifications for a compact, rugged, maritime-environment-capable, ultra-fast laser that satisfies U. S. Navy requirements.</p> </div>				Spectral Beam Comb. Fiber Lasers	FY 04	FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	0.000	1.978	0.000	0.000	RDT&E Articles Quantity	N/A	N/A	N/A	N/A
Spectral Beam Comb. Fiber Lasers	FY 04	FY 05	FY 06	FY 07														
Accomplishments/Effort/Subtotal Cost	0.000	1.978	0.000	0.000														
RDT&E Articles Quantity	N/A	N/A	N/A	N/A														

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0604574N Navy Tactical Computer Resources	PROJECT NUMBER AND NAME 9579 Compact Ultra Fast Laser System Development		

C. PROGRAM CHANGE SUMMARY:

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Funding:				
FY2005 President's Budget	0.000	0.000	0.000	0.000
FY2006 President's Budget	0.000	1.978	0.000	0.000
Total Adjustments	0.000	1.978	0.000	0.000
Summary of Adjustments				
Congressional Increases	0.000	2.000	0.000	0.000
Congressional Rescissions	0.000	-0.022	0.000	0.000
Subtotal	0.000	1.978	0.000	0.000

Schedule:

Not Applicable.

Technical:

Not Applicable.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4			PROGRAM ELEMENT NUMBER AND NAME 0604574N Navy Tactical Computer Resources			PROJECT NUMBER AND NAME S9579 Compact Ultra Fast Laser System Development				

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0604755N										
Directed Energy User Scrutiny Equip.		2.476								2.476
0603582N										
Multiple Items	11.994	24.204								
0205601N										
Spectral Beam Combining Fiber Lasers Development		0.988								

E. ACQUISITION STRATEGY:

Not Applicable (R&D effort only)

F. MAJOR PERFORMERS:

Government Field Activities: AFRL; NAVAIR; NRL; NSWC CD; NSWC Crane; NSWC DD; NSWC PHD; PMRF; SPAWAR.
 Academia: Argonne Laboratory; Brooks Institute; Center for Naval Analysis; Institute of Advanced Technology; Los Alamos National Laboratory; MIT; Naval Postgraduate School; Penn State University; Thomas Jefferson Laboratory; University of Texas at Austin.
 Contractors: Acculight; AES; Decade Optical Systems; Ionatron; Raytheon; Analytical Research; Schafer; Envisioneering; SPA; Textron; Brashear; TRW; Whitney, Bradley & Brown; General Atomics;
 Titan; QinetiQ; Noesis; SYS, Perot; EWA.

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EXHIBIT R4, Schedule Profile																								DATE:				February 2005				
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
RDT&E, N / BA-4									0604574N Navy Tactical Computer Resources												S9579 Compact Ultra Fast Laser System Development											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
Not applicable																																

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

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