

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>FEBRUARY 2004</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-6</b>						R-1 ITEM NOMENCLATURE 0605866N Navy Space and Electronic Warfare (SEW) Support					
COST (\$ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost			3.082	3.140	2.941	2.975	3.150	3.124	3.198	Continuing	Continuing
0739 Navy C4I Top Level Requirements			1.474	1.336	1.083	1.071	1.204	1.139	1.172	Continuing	Continuing
0706 EMI Reduction and Radio Frequency Mgmt.			1.608	1.804	1.858	1.904	1.946	1.985	2.026	Continuing	Continuing
Quantity of RDT&E Articles											
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>Project 0739, Navy C4I Top Level Requirements - Provides analysis of both Fleet requirements and research and development technology, to develop top level plans for Navy Communications, Command, Control, Communication, Computer Intelligence (C4I), and space systems in the Space and Electronic Warfare mission area.</p> <p>Project 0706, Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management - Develops advanced technology to identify and reduce EMI sources from Navy systems and platforms.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b> This program is funded under RDT&amp;E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.</p>											

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Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 1 of 10)



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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>FEBRUARY 2004</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>		PROGRAM ELEMENT NUMBER AND NAME 0605866N Navy Space and Electronic Warfare (SEW) Support				PROJECT NUMBER AND NAME 0739 Navy C4I Top Level Requirements					
COST (\$ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost			1.474	1.336	1.083	1.071	1.204	1.139	1.172	Continuing	Continuing
RDT&E Articles Qty											0
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>  This project provides analysis of both Fleet requirements and research and development technology, to develop top level plans for Navy Command, Control, Communications (C3), Computers, Intelligence (C4I), and space systems in the Space and Electronic Warfare mission area.</p>											

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



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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>FEBRUARY 2004</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0605866N SEW Support	PROJECT NUMBER AND NAME 0739 Navy C4I Top Level Requirements																	
<b>(U) B. Accomplishments/Planned Program</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;"></th><th style="width: 15%;">FY 03</th><th style="width: 15%;">FY 04</th><th style="width: 15%;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">1.474</td><td></td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 100px;"><p>?Applied previously-developed models and analytic methods to identify areas of highest sensitivity in C3 performance.</p><p>?Extended previous architectural work on Naval operational functions and networks to detailed analyses of C3 and network requirements.</p><p>?Extended previous system engineering results to newly emerging implementation issues.</p></div>							FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		1.474			RDT&E Articles Quantity				
		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		1.474																	
RDT&E Articles Quantity																			
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		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost			1.336	1.083															
RDT&E Articles Quantity																			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2004</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0605866N SEW Support	PROJECT NUMBER AND NAME 0739 Navy C4I Top Level Requirements

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	1.549	1.361	1.411
Current BES/President's Budget	1.474	1.336	1.083
Total Adjustments	-0.075	-0.025	-0.328
Summary of Adjustments			
Economic Assumptions	-0.009		
Sec. 8094: Mgmt Improvement		-0.004	
Sec. 8126: Efficiencies/Revisions		-0.012	
Business Process Reform	-0.006		
IT Cost Growth	-0.003		
FFRDC Reduction	-0.013	-0.009	
SBIR Assessment	-0.026		
Inflation Savings	-0.018		
Inflation			-0.003
Non-purchase inflation			-0.001
Sea Enterprise (LOE II)			-0.200
Manpower			-0.124
Subtotal	-0.075	-0.025	-0.328

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable.



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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>		PROGRAM ELEMENT NUMBER AND NAME 0605866N SEW Support		PROJECT NUMBER AND NAME 0739 Navy C4I Top Level Requirements																							
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>FY 2008</u></th> <th style="text-align: center;"><u>FY 2009</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td colspan="10">Not Applicable.</td> </tr> </tbody> </table> <p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>Not Applicable.</p> <p><b>(U) F. MAJOR PERFORMERS: **</b></p> <p>Not Applicable.</p> <p><small>* Not required for Budget Activities 1,2,3, and 6. ** Required for DON and OSD submit only.</small></p>								<u>Line Item No. &amp; Name</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>	Not Applicable.									
<u>Line Item No. &amp; Name</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>																		
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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>FEBRUARY 2004</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>		PROGRAM ELEMENT NUMBER AND NAME 0605866N Navy Space and Electronic Warfare (SEW) Support				PROJECT NUMBER AND NAME 0706 EMI Reduction and Radio Frequency Management					
COST (\$ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>0.000</b>		<b>1.608</b>	<b>1.804</b>	<b>1.858</b>	<b>1.904</b>	<b>1.946</b>	<b>1.985</b>	<b>2.026</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty											<b>0</b>
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>            Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management. This project develops tools, processes, and algorithms to identify and reduce EMI sources for Navy systems and platforms. There are several efforts under development to identify and reduce EMI through proper use of the electromagnetic spectrum. Automated capabilities will be developed that reflect research into new operational fleet battle group frequency management processes. They reflect current fleet needs for a communications planning and frequency management tool used to plan communication links and analyze, allocate, and assign communication and radar frequencies for fleet operations. Research also includes EMI models for phased arrays, development of new analysis techniques and technologies to avoid EMI, and development of guidance to harmonize commercial EMI practices.</p>											

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Exhibit R-2a, RDTEN Project Justification  
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0605866N SEW Support	PROJECT NUMBER AND NAME 0706 EMI Reduction and Radio Frequency Management																	
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AESOP (Integrated CPM and EMCAP)		0.804	0.902	0.929															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 10px; min-height: 100px;"><p>· (U) Developed applications that reside on the afloat computer infrastructure used by the Navy. The software is used for frequency planning to ensure operational use of any electromagnetic emitting systems are not a source or victim of interference. AESOP is an integration of the CPM for communications planning and EMCAP for radar and weapon systems frequency planning. This integration was done per fleet requirement and to support the FORCEnet concept of dynamic management and use of C4ISR resources. Develop interfaces for AESOP, and other automated tools to interface with evolving network protocols and to ensure currency for web based applications. Develop new algorithms for automated tools for new Navy C4ISR systems for both government and commercial communication systems being used by the Navy.</p></div>																			
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		FY 03	FY 04	FY 05															
Automated Tools		0.129	0.144	0.148															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 10px; min-height: 100px;"><p>· (U) Developed algorithms and conceptual models to support EMI reduction. An engineering concept was developed and evaluated for current probe technology to replace legacy HF antennas and thereby reduce interference effects. Develop a multi band approach for current probe technology for multiple frequencies (HF, VHF, and UHF) that would eliminate many of those legacy antennas and has the potential to drastically reduce shipboard interference effects.</p></div>																			

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		FY 03	FY 04	FY 05															
C4I EMC		0.434	0.487	0.502															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; min-height: 100px; margin-top: 5px;"><p>· (U) Continue development of models to analyze antenna enhancements, and research the interference for below decks emitters such as wireless LANs to the topside and below decks environments. Research new technology efforts related to implementation of advanced capabilities that foster the implementation of cutting edge C4ISR transport capabilities. Due to congested topside environment, develop recommended enhancements to antennas to reduce incidences of interference.</p></div>																			
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		FY 03	FY 04	FY 05															
C4I EMC Criteria		0.241	0.271	0.279															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; min-height: 100px; margin-top: 5px;"><p>· (U) C4I EMC Criteria : Incorporated commercial systems practices and standards into EMC C4I criteria and incorporated into Navy practices. Assist battle group staffs and COCOMs in developing frequency management process improvements. Beginning in FY04, institutionalize frequency management process for operational fleet by developing procedures that can be utilized by all Navy battle groups.</p></div>																			

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0605866N SEW Support	PROJECT NUMBER AND NAME 0706 EMI Reduction and Radio Frequency Management		

**(U) C. PROGRAM CHANGE SUMMARY:**

	FY 2003	FY 2004	FY 2005
(U) Funding:			
President's Budget:	1.654	1.826	1.868
Current BES/President's Budget	1.608	1.804	1.858
Total Adjustments	-0.046	-0.022	-0.010
Summary of Adjustments			
FY2003 Update	-0.030		
FY03 SBIR 5 May 03	-0.016		
Section 8094: Management Improvements		-0.005	
Sec. 8126: Efficiencies/Revised Econ. Assumptions		-0.015	
WCF - R&D - SPAWAR			-0.001
Rates - SSC			0.001
Inflation			-0.005
Non Purchase Inflation			-0.001
NWCF Rates - SPAWAR SSC Rates			-0.002
SPAWAR Service Cost Center Adjustments		-0.002	-0.002
Subtotal	-0.046	-0.022	-0.010

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable.



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<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</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>	To <u>Complete</u>	Total <u>Cost</u>
Not Applicable.									
<b>(U) E. ACQUISITION STRATEGY: *</b>									
Not Applicable.									

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