

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2002</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>						R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost			55.694	37.247	19.011	9.321	6.480	2.500	1.820	Continuing	Continuing
E0463 - (E-2C Improvements)			34.379	6.990	7.965	9.321	6.480	2.500	1.820	Continuing	Continuing
E2321 - (E-2 Radar Modernization)	79.106		12.315	13.411	11.046						115.878
R3007 - (UHF Electronically Scannable Antenna)			9.000	16.846							
Quantity of RDT&E Articles	14										14
<p>* The FY2001 budget reflects Congressional Adds for Eight Blade Composite Propeller (\$4.000 million), Middleware Technology and Advanced Processing Builds (\$5.000 million), Improved Composite Rotordome (\$2.000 million), and Network Centric Warfare (NCW) Development, Test and Evaluation in Support of Naval Fires Network Demo (\$6.000 million) executed under E2975, E2976, E2979, and E2977 respectively; which have been reduced by \$.120, \$.210, \$.084, and \$.153 million for Congressional Undistributed adjustments. FY2001 budget also reflects \$8.000 million to incorporate Specific Emitter Identification into ALQ-217.</p> <p>**\$9.000 million of the 15.000 million Congressional add for RMP Littoral Surveillance for the E-2C has been realigned under project R3007 to support UHF Electronically Scannable Antenna.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: E-2C Improvements provides pre-planned product improvements for the evolution of E-2C airborne warning system capabilities in support of naval warfare command and control requirements. It has previously funded developments for the modification/replacement of selected weapon replaceable assemblies of current installed subsystems. This has resulted in a new capability configuration referred to as Group II aircraft. The program has developed a Mission Computer Upgrade (MCU), applying on-going developments in data processing and target detection, which will relieve current bottlenecks in signal and processing. The MCU will permit incorporation of additional functional capabilities to satisfy evolving operational requirements, e.g., Cooperative Engagement Capability (CEC), Satellite Communications (SATCOM), and permits the evolutionary growth of a Combat Identification and Cruise Missile Defense (CMD) Capability.</p>											

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2002</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS	
<p>FY2001-2007: Funding provides for evaluation of technology for new emergent systems and subsystems. This initiative allows for data collection and the evaluation of new technologies in the context of emerging missions and requirements including Cruise Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification including specific emitter identification, multi-source integration, and Single Integrated Air Picture as well as parts and system obsolescence. Emphasis will be upon the following areas: participation in exercises to assess capabilities against emerging threats; identify deficiencies, identification of candidate solutions; and ground/airborne demonstrations of the identified technologies.</p> <p>The Radar Modernization Program (RMP) is a ground and flight prototype test demonstration and risk mitigation of multiple technologies. It initiates the application of new radar technologies to modernize the primary sensor of the E-2C Weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. Key technologies to be integrated are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, and high dynamic range digital receivers. The resulting detection system will provide a substantially improved overland performance, enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a single integrated air picture. These technologies and resultant equipment demonstrated in ground environment in FY1999 and will be flight tested in FY2001 through FY2003. The P.E. will be utilized for RMP pre-engineering and manufacturing development (Pre-E&amp;MD) FY2001 - FY2002 followed by a phased engineering and manufacturing development (E&amp;MD) for RMP, with phase I Littoral Surveillance beginning in FY2003 followed by phase II pre-planned product improvement (P3 I) which will meet the full Joint Theater Air Missile Defense (JTAMD) mission needs statement requirements.</p> <p>FY2001 - 2003: Funding provides for evaluation of technology for new emergent systems and subsystems. This initiative allows for data collection and the evaluation of new technologies in the context of emerging missions and requirements including Cruise Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification, multi-source integration, and Single Integrated Air Picture as well as parts and system obsolescence. Emphasis will be upon the following areas: participation in exercises to assess capabilities against emerging threats; identify deficiencies, identification of candidate solutions; and ground/airborne demonstrations of the identified technologies.</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>		

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**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 2 of 19)

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2002</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS					PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS					
COST (\$ in Millions)	Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program	
Project Cost		34.379*	6.990	7.965	9.321	6.480	2.500	1.820	Continuing	Continuing	
RDT&E Articles Qty	14									14	

\* The FY2001 budget reflects Congressional Adds for Eight Blade Composite Propeller (\$4.000 million), Middleware Technology and Advanced Processing Builds (\$5.000 million), Improved Composite Rotordome (\$2.000 million), and Network Centric Warfare (NCW) Development, Test and Evaluation in Support of Naval Fires Network Demo (\$6.000 million) executed under E2975, E2976, E2979, and E2977 respectively; which have been reduced by \$.120, \$.210, \$.084, and \$.153 million for Congressional Undistributed reduction. The FY2001 budget also reflects \$8.000 million to incorporate Specific Emitter Identification into ALQ-217.

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

E-2C Improvements provides pre-planned product improvements for the evolution of E-2C airborne weapon system capabilities in support of naval warfare command and control requirements. It has previously funded developments for the modification/replacement of selected weapon replaceable assemblies of current installed subsystems. This has resulted in a new baseline capability configuration referred to as Group II aircraft. The program has developed a Mission Computer Upgrade (MCU), applying on-going developments in data processing and target detection, which will relieve current bottlenecks in signal and data processing. The MCU will permit incorporation of additional functional capabilities to satisfy evolving operational requirements, e.g., Cooperative Engagement Capability (CEC), Satellite Communications (SATCOM), and permits the evolutionary growth of a Combat Identification and Cruise Missile Defense (CMD) Capability.

Funding provides for evaluation of technologies for new emergent systems and subsystems. This initiative allows for data collection and the evaluation of new technologies in the context of emerging missions and requirements including Cruise Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification including specific emitter identification, multi-source integration, and Single Integrated Air Picture as well as parts and system obsolescence. Emphasis will be upon the following areas: participation in exercises to assess capabilities against emerging threats; identify deficiencies, identification of candidate solutions; and ground/airborne demonstrations of the identified technologies.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>- (U) (\$6.133) - Collected Sensor Data. Performed Downselect Infra Red and Multi-source Integration Technologies (MSI). Performed Analysis and Requirements Generation for Future Engineering Change Proposals (ECPs) for E-2C.</li> <li>- (U) (\$4.790) - Contracted ADA to C++ software conversion of E-2C Functional Configuration Items (FCI) software.</li> <li>- (U) (\$1.916) - Improved Composite Rotordome (E2979). Analyzed composite radome options for the UHF Electronically Scannable Antennas (UESA) and supported composite UESA radome analysis.</li> <li>- (U) (\$5.847) - Network Centric Warfare (NCW) Development (E2977). Developed Tactical Dissemination Module, supported Prototype USS CORONADO, installed S-Band Phased Array Antenna, supported Program Development, and supported Limited Objective Experiments and Fleet Battle Experiment India.</li> <li>- (U) (\$3.880) - Eight Blade Composite Propeller (E2975). Provided Flight and Ground Test for C-2/E-2 aircraft and Integration Support.</li> <li>- (U) (\$3.813) - Advanced Support Aircraft (ASA) (E2805). Supported the Littoral E-2C aircraft by performing tasks related to the E-2C production and retrofitted to develop a new mission suite centered around RMP.</li> <li>- (U) (\$8.000) - Developed and evaluated Specific Emitter Identification capability into the ALQ-217 Electronic Support Measure System to improve E-2C combat identification capabilities.</li> </ul> <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> <li>- (U) (\$1.707) - Continue Analysis and Requirements Generation for Future ECPs for E-2C.</li> <li>- (U) (\$1.877) - Support MSI Phase I Flight Test Evaluation for E-2C.</li> <li>- (U) (\$1.000) - Develop Advanced Middleware Software for Operational Flight Program Portability for E-2C.</li> <li>- (U) (\$1.394) - Support Fleet Battle Group Interoperability Testing and Evaluation for E-2C.</li> <li>- (U) (\$0.400) - Develop E-2C Joint Mission Planning System (JMPS) software.</li> <li>- (U) (\$0.300) - Develop and evaluate ALQ-217 database.</li> <li>- (U) (\$0.100) - Provide Tactical Aircraft Mission Planning System (TAMPS) support.</li> <li>- (U) (\$0.212) - Portion of extramural program for Small Business Innovation Assessment in accordance with 15 USC 638.</li> </ul> <p>3. FY2003 PLANS:</p> <ul style="list-style-type: none"> <li>- (U) (\$2.500) - MSI Test and Evaluation in Conjunction with CEC Follow-on Test and Evaluation (FOT&amp;E) for E-2C.</li> <li>- (U) (\$1.296) - Support Fleet Battle Group Interoperability Testing and Evaluation for the E-2C.</li> <li>- (U) (\$1.000) - Integrated Processor Architecture Development.</li> <li>- (U) (\$0.850) - Requirements Analysis for Development of Integrated Communication System Architecture to Support Advanced Sensor Networking.</li> <li>- (U) (\$0.500) - Avionics System Trade Studies to support NCW Architectures.</li> <li>- (U) (\$1.036) - Support Organic Sensor/Resource Management.</li> <li>- (U) (\$0.783) - MSI Development to support Single Integrated Air Picture (SIAP).</li> </ul>		

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">23.218</td> <td style="text-align: center;">7.052</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: center;">11.161</td> <td style="text-align: center;">-0.062</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">34.379</td> <td style="text-align: center;">6.990</td> <td style="text-align: center;">7.965</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p style="margin-left: 40px;">(U) Funding: The FY 2001 net increase of \$11.161 million consists of a \$3.810 million increase for Advanced Support Aircraft and a \$8.000 million increase to incorporate Specific Emitter Identification capability into ALQ-217 offset by a \$0.136 million decrease for reprioritization of requirements within the Navy and a \$0.513 million decrease for a Small Business Innovation Research assessment. The FY 2002 net decrease of \$0.062 million consists of a \$0.062 million decrease for an undistributed congressional reduction.</p> <p style="margin-left: 40px;">(U) Schedule:</p> <p style="margin-left: 40px;">(U) Technical: Not Applicable.</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	23.218	7.052		(U) Adjustments from the FY2002 President's Budget:	11.161	-0.062		(U) FY 2003 President's Budget Submit:	34.379	6.990	7.965
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY 2002 President's Budget:	23.218	7.052																
(U) Adjustments from the FY2002 President's Budget:	11.161	-0.062																
(U) FY 2003 President's Budget Submit:	34.379	6.990	7.965															

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS			
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. &amp; Name</u>	<u>FY 2001</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>To Complete</u>
APN 1/E-2C (LI #12 &13)	312.375	275.216	295.451	252.860	324.871	421.542	398.906	6776.439
APN 5/E-2C (LI #37)	49.829	48.498	17.195	90.933	9.559	8.740	8.600	1331.900
APN 6/E-2C (LI #51)	21.733	26.733	4.082	13.040	7.313	2.071	5.750	216.927
<u>Related RDT&amp;E</u>								
(U) 0603658N (Ship Self Defense, CEC)								
(U) 0604234N (E-2C Radar Modernization Program)								
(U) D. ACQUISITION STRATEGY: Not Applicable								
(U) E. SCHEDULE PROFILE:								
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>				<u>TO COMPLETE</u>
(U) Program Milestones	3Q/01 MCU MSIII Infra Red Search & Track (IRST) Demo Lasar Radar (LADAR) Demo Multi Source/Multi Sensor Integration							HE2000 Fielding
(U) Engineering Milestones			2Q-3Q/02 JSCIET MSI Integration Data Collect					MSI Testing
(U) T&E Milestones	Ground Demo		4Q/02 MSI FQT		1Q/03 FOT&E Fielding			
(U) Contract Milestones	4Q/01 MCU FRP							

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2002</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0204152N, E2 SQUADRONS			E0463, E-2C IMPROVEMENTS						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Dev. - MCU	SS/CPFI	NGC, NY/FL	157.460								157.460	157.460
Hardware/Software Dev. - CEC/MCU	SS/CPFF	NGC, NY/FL	12.194								12.194	12.194
Hardware/Software Dev. - MCU	SS/CPFF	NGC, NY/FL	13.998								13.998	13.998
Hardware/Software Dev. Misc. - MCU	SS/CPFF	NGC, NY/FL	1.021								1.021	1.021
Hardware/Software Dev. - Prior Yr Eft		NGC, NY/FL	254.800								254.800	254.800
Hardware/Software Dev	SS/CPFF	NGC, NY/FL				4.683	12/01	5.406	10/02		10.089	10.089
Hardware/Software Dev	SS/CPFF	NGC, NY		4.817	08/01						4.817	4.817
Hardware/Software Dev	PD	NCW, Arlington, VA		5.765	11/00						5.765	5.765
Hardware/Software Modification-ICR	SS/CPFF	NGC, NY		1.766	08/01						1.766	1.766
Hardware/Software - JMPS/TAMPS	C/CPFF	TBD				0.700	02/02				0.700	0.700
Hardware/Software - SEI	SS/CPFF	NGC, NY		7.675	11/00						7.675	7.675
Subtotal Product Development			439.473	20.023		5.383		5.406			470.285	470.285
Remarks:												
Government Eng. Spt	WX/RC	NAWCAD, PAX RIVER, MD	13.261								13.261	
Government Eng. Spt - Prior Yr Eft	WX/RC	NAWCAD, PAX RIVER, MD	58.800								58.800	
Government Eng. Spt (AIR 4.2) - MCU	WX/RC	NAWCAD, PAX RIVER, MD	0.397								0.397	
Government Eng. Spt - ASA/UESA	C/CPFF	Classified	5.520	0.141	06/01						5.661	5.661
Government Eng. Spt - ASA	MIPR	NRL, Wash, D.C.	0.600								0.600	
Government Eng. Spt - Improvements	WX/RC	NAWCAD, PAX RIVER, MD				0.904	10/01				0.904	
Government Eng. Spt-JMPS/TAMPS	WX/RC	NAWCAD, PAX RIVER, MD				0.100	10/01				0.100	
Government Eng. Spt	WX/RC	NAWCAD, PAX RIVER, MD		0.350	03/01						0.350	
Government Eng. Spt	WX/WR	NAWCAD, PAX RIVER, MD		0.694	03/01			0.500	10/02		1.194	
Government Eng. Spt	SS/CPFF	NGC, NY		2.301	05/01						2.301	2.301
Government Eng. Spt (RAND)	MIPR	PENTAGON, WASH, D.C.		0.300	08/01						0.300	
Government Eng. Spt	RX/RC	NAWCAD, PAX RIVER, MD		0.369	05/01						0.369	
Government Eng. Spt - SEI	WX/RX	NAWCAD, PAX RIVER, MD		0.325	11/00						0.325	
Subtotal Support			78.578	4.480		1.004		0.500			84.562	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							DATE: <b>February 2002</b>					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0204152N, E2 SQUADRONS			E0463, E-2C IMPROVEMENTS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation - MCU	WX/RC	NAWCAD, PAX RIVER, MD	38.578								38.578	
Test & Evaluation - Prior Yr Effort	WX	NAWCAD, PAX RIVER, MD	39.200								39.200	
ACIS (PMS-440)	PD	NAVSEA	2.483								2.483	
LEAR JET - MCU	PD	PMA-207	0.601								0.601	
Test & Evaluation - MCU	WX	PMRF, HAWAII	1.500								1.500	
Miscellaneous - MCU	MIPR	Various	0.666								0.666	
Test & Evaluation - IMPROV	WX/WR	NAWCAD, PAX RIVER, MD	2.639								2.639	
Test & Evaluation - Contract/Improv.	MIPR		0.325								0.325	
Test & Evaluation - Improvements	WR	NAWCAD, PAX RIVER, MD	0.800	1.351	10/00	0.376	10/01	1.649	10/02	Continuing	Continuing	
Test & Evaluation - EBC Fit Test	WX	NAWCAD, PAX RIVER, MD		1.380	12/00						1.380	
Test & Evaluation - EBC	TBD	Various		2.500	02/01						2.500	
Test & Evaluation	WX/RX	NAWCAD, PAX RIVER, MD		4.600	12/00						4.600	
Subtotal T&E			86.792	9.831		0.376		1.649		Continuing	Continuing	
Remarks:												
Management	WX/RX	NAWCAD, PAX RIVER, MD	0.091					0.330	10/02		0.421	
Travel	WX/WR	NAWCAD, PAX RIVER, MD	0.106	0.045	10/00	0.015	10/01	0.080	10/02	Continuing	Continuing	
SBIR Assessment						0.212					0.212	
Subtotal Management			0.197	0.045		0.227		0.410		Continuing	Continuing	
Remarks:												
Total Cost			605.040	34.379		6.990		7.965		Continuing	Continuing	
Remarks:												

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Exhibit R-2, RD TEN Budget Item Justification  
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EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2002</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS					PROJECT NUMBER AND NAME E2321, RADAR MODERNIZATION PROGRAM					
COST (\$ in Millions)	Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program	
Project Cost	<b>79.106</b>	<b>12.315</b> *	<b>13.411</b>	<b>11.046</b>						<b>115.878</b>	
RDT&E Articles Qty	Not Applicable										
<p>* \$9.000 million of the \$15.000 million Congressional add for RMP Littoral Surveillance for the E-2C was realigned to R3007 for UHF Electronically Scannable Antenna.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Radar Modernization Program (RMP) is a ground and flight prototype test demonstration and risk mitigation of multiple technologies. It initiates the application of new radar technologies to modernize the primary sensor of the E-2C weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. Key technologies to be integrated are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, and high dynamic range digital receivers. The resulting detection system will provide a substantially improved overland performance, enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a single integrated air picture. These technologies and resultant equipment demonstrated in ground environment in FY1999, will be tested in FY2001 through FY2003. The P.E. will be utilized for RMP pre-engineering and manufacturing development (Pre-E&amp;MD) FY2001 - FY2002 followed by a phased E&amp;MD for RMP, with phase I Littoral Surveillance beginning in FY2003 followed by phase II pre-planned product improvement (P3 I) which will meet the full Joint Theater Air Missile Defense (JTAMD) mission needs statement requirements.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:            1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>- (U) (\$6.855) - Completed the integration and check out (IACO) of NC-130H Test Bed, installed Flight Test Instrumentation, conducted Subsystem Flight Test, performed Elemental Data Analysis/Generate Quicklook Report, and initiated Preliminary Design of NC-130H Littoral Configuration Processing Suite.</li> <li>- (U) (\$5.460) - Radar Modernization Program Plus-Up (E2804). Performed weapon system performance requirements analysis for the E-2C RMP Littoral Surveillance aircraft. Performed engineering effort necessary to build a 21 channel antenna rotary coupler equipment cooling system, fabricated Identify Friend or Foe (IFF) antenna beam forming device, provided analysis, designed, and modified an existing IFF system, conducted IACO and demonstrated an existing IFF system, and conducted co-aligned IFF antenna feasibility analysis.</li> </ul>											

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-7</b>	0204152N, E-2 SQUADRONS	E2321, RADAR MODERNIZATION PROGRAM
<p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"><li>- (U) (\$1.710) - Complete Subsystem Flight Test.</li><li>- (U) (\$0.675) - Complete Elemental Data Analysis/Generate Final Rep.</li><li>- (U) (\$2.853) - Complete Design of NC-130H Littoral Configuration Processing Suite.</li><li>- (U) (\$6.774) - Complete Parts/Fabrication of NC-130H Littoral Configuration Processing Suite.</li><li>- (U) (\$0.993) - Initiate NC-130H integration and check out (IACO) of Processing Suite.</li><li>- (U) (\$0.406) - Portion of extramural for Small Business Innovation Assessment in accordance with 15 USC 638.</li></ul> <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"><li>- (U) (\$7.165) - Complete NC-130H IACO of Processing Suite.</li><li>- (U) (\$1.646) - Conduct Processing Subsystem Flight Test.</li><li>- (U) (\$2.235) - Perform Tracking Analysis/Generate Final Report.</li></ul>		

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2002</b>																																					
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E2321, RADAR MODERNIZATION PROGRAM																																						
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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2002</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0204152N, E2 SQUADRONS			E2321, RADAR MODERNIZATION PROGRAM						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Dev.	SS/CPFF	Classified	53.752	5.065	11/00	6.814	10/01	5.492	10/02		71.123	71.123
Hardware/Software Dev.	SS/CPFF	NGC, NY	15.167	4.800	06/01	4.351	10/01	3.541	10/02		27.859	27.859
Hardware/Software Dev.	MIPR	Hanscomb AFB, MA	0.748								0.748	
Hardware/Software Dev.	BAAs	BAAs	0.406								0.406	0.406
Hardware/Software Dev.	SS/CPFF	Kirkland AFB, TX	0.476								0.476	0.476
Subtotal Product Development			70.549	9.865		11.165		9.033			100.612	
Remarks:												
Government Eng. Support	WR/WX	NAWCAD, PAX RIVER, MD	1.837	0.945	12/00	0.881	10/01	0.683	10/02		4.346	
Government Eng. Support	CPFF	Classified	0.865			0.180	10/01	0.180	10/02		1.225	1.225
Government Eng. Support	MIPR	Pentagon, Washington, D.C.		0.400	04/01						0.400	
Government Eng. Support	WX	NSWC		0.025	08/01						0.025	
Subtotal Support			2.702	1.370		1.061		0.863			5.996	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2002</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0204152N, E2 SQUADRONS			E2321, RADAR MODERNIZATION PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WX/WR	NAWCAD, PAX RIVER, MD	3.840	1.080	10/00	0.339	10/01	0.710	10/02		5.969	
Test & Evaluation	C/CPFF	Classified	0.895			0.360	10/01	0.360	10/02		1.615	1.615
Lear Jet - RMP	PD	PMA-207	0.380								0.380	
Gear Boxes	PD	AIR-5.0	0.550								0.550	
Test & Evaluation	PD	PMS-465										
Subtotal T&E			5.665	1.080		0.699		1.070			8.514	
Remarks:												
Management	C/CPFF	Classified	0.105			0.060	10/01	0.060	10/02		0.225	0.225
Travel	WX	NAWCAD, PAX RIVER, MD	0.085			0.020	10/01	0.020	10/02		0.125	
SBIR Assessment						0.406					0.406	
Subtotal Management			0.190			0.486		0.080			0.756	
Remarks:												
Total Cost			79.106	12.315		13.411		11.046			115.878	
Remarks:												

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**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 13 of 19)

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EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2002</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS					PROJECT NUMBER AND NAME R3007, UHF ELECTRONICALLY SCANNABLE ANTENNA					
COST (\$ in Millions)	Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program	
Project Cost		9.000*	16.846							25.846	
RDT&E Articles Qty											
<p>* FY 2001 budget reflects a \$9.000 million realignment from the \$15.000 million Congressional add for RMP Littoral Surveillance for the E-2C program to support the UHF Electronically Scannable Antenna.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:                      UHF Electronically Scannable Antenna: Develop, demonstrate, and analyze UESA radar testbed concept on the Mountaintop on Kauai.                      FY01 effort includes integrating UESA Antenna developed by Randtron, SiC Transmitter developed by Northrop Grumman, ESSS, Direct Digital Synthesis Exciter by EWA, Console and External Communications by Solipsys, and T/R Switch by University of Hawaii and Research Corporation of University of Hawaii, Phaseshifter by Trex Industries. NGC ESSS is the system integrator for the MT Testbed. This effort initially will demonstrate a non-real time Surveillance radar operation, and a real time system by Jan 04.</p> <p>FY02 effort will include an integrated IFF system as well as advanced digital receivers and supercombiner circuits. Additional contractors are TBD based on a competitive procurement. Comprehensive real time demonstration is planned for integrated Surveillance and IFF capability by March of FY04. Extensive work will be done with PMRF for the use of their range, and targets to conduct the full UESA RTB capability demonstration to assess UESA's ability to meet the Littoral Surveillance needs.</p>											

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-7</b>	0204152N, E-2 SQUADRONS	R3007, UHF ELECTRONICALLY SCANNABLE ANTENNA
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>- (U) (\$6.000) - Supported NGC ESSS System Integration Contract</li><li>- (U) (\$1.000) - Supported Oceanit Power Monitoring System</li><li>- (U) (\$1.000) - Supported University of Hawaii T/R Switch</li><li>- (U) (\$1.000) - Supported NAVAIR/PMRF Systems Engineering and Demonstration Plans</li></ul> <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"><li>- (U) (\$2.000M) - NGC ESSS Complete Systems Integration for Real Time system</li><li>- (U) (\$6.000M) - NGC ESSS Complete System integration with IFF system</li><li>- (U) (\$2.000M) - NAVAIR/PMRF Range Costs and Systems Engineering</li><li>- (U) (\$4.000M) - RCUH/University of Hawaii Continuation of Phaseshifter, advanced transmitter, Digital Receivers, Systems Engineering</li><li>- (U) (\$2.846) - UESA RTB System Support. Various contractors and teams - IDPC system for moving clutter, chiller, antenna install with system, Radar install</li></ul> <p>3. FY2003 PLANS: Not Applicable</p>		

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Hardware/Software Dev.	C/CPFF	NGC, MD		6.000	03/02	2.000	03/02				8.000	8.000
Hardware/Software Dev.	SS/CPFF	NGC, MD				5.000	05/02				5.000	5.000
Hardware/Software Dev.	SS/FFP	BAE, NY				1.000	05/02				1.000	1.000
Hardware/Software Dev. Misc.	C/CPFF	RCUH, HI		1.000	02/02	4.000	02/02				5.000	5.000
Hardware/Software Dev. - Misc	C/CPFF	TBD				2.846	06/02				2.846	2.846
Hardware/Software Dev - PMS	C/CPFF	Oceanit, HI		1.000	01/02						1.000	1.000
Subtotal Product Development				8.000		14.846					22.846	22.846
Remarks:												
Government Eng. Spt	WX/RC	NAWCAD, PAX RIVER, MD		0.500	02/02	1.000	09/02				1.500	
Government Eng. Spt - Range Support	WX/RC	PMRF, HI		0.500	02/02	1.000	09/02				1.500	
Subtotal Support				1.000		2.000					3.000	3.000
Remarks:												

