#### **CLASSIFICATION:**

## **UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE:	
						Februa	ry 2004
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMEN	CLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				0204152N, E-2 Sq	uadrons		
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	18.878	19.331	6.055	2.155	1.579	1.586	1.605
0463 - (E-2C Improvements)	8.502	8.749	6.055	2.155	1.579	1.586	1.605
2321 - (E-2 Radar Modernization)	10.376						
9417 - (E-2C Program Support Activity)*		0.989					
9418 - (E-2C Program Support Actvity)*		3.461					
9419 - (Non-Cooperative Combat Identification)*		1.682					
9420 - (PMRF Net-Centric Test Bed/Adv. Haw.)*		4.450					

<sup>\*</sup> The FY 2004 budget reflects the following Congressional adds: \$1.0M for E-2C Program Support Activity (PSA) which has been revised by \$.011 for Congressional Undistributed Adjustments; \$3.5M for E-2C PSA (SBIR Phase III) which has been revised by \$.039 for Congressional Undistributed Adjustments; \$1.7M for Non-Cooperative Combat Identification Capability which has been revised by \$.018 for Congressional Undistributed Adjustments; and \$4.5M for PMRF Net-Centric Test Bed/AHE Testing which has been revised by \$.050 for Congressional Undistributed Adjustments.

#### 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 data processing. The MCU will permit incorporation of additional functional capabilities to satisfy evolving operational requirements, e.g., Cooperative Engagement Capability (CEC), Satellite Communications (SATCOMS), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

FY2003-2009: 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 Theater Air and Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification including specific emitter identification, multi-source integration, Airborne Battlefield Command and Control (ABC2), and Single Integrated Air Picture (SIAP) 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.

R-1 SHOPPING LIST - Item No. 167

**UNCLASSIFIED** 

Exhibit R-2, RDTEN Budget Item Justification (Exhibit R-2, page 1 of 13)

#### CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
							Februa	ry 2004
APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT NUMBER AND NAME PROJECT NUMBER AND NAME								
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS				0463, E-2C IMPRO	OVEMENTS		
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		8.502	19.331 *	6.055	2.155	1.579	1.586	1.605
RDT&E Articles Qty						_		

<sup>\*</sup> The FY 2004 budget reflects the following Congressional adds: \$1.0M for E-2C Program Support Activity (PSA) which has been revised by \$.011 for Congressional Undistributed Adjustments; \$3.5M for E-2C PSA (SBIR Phase III) which has been revised by \$.039 for Congressional Undistributed Adjustments; \$1.7M for Non-Cooperative Combat Identification Capability which has been revised by \$.018 for Congressional Undistributed Adjustments; and \$4.5M for PMRF Net-Centric Test Bed/AHE Testing which has been revised by \$.050 for Congressional Undistributed Adjustments.

#### 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 data processing. The MCU will permit incorporation of additional functional capabilities to satisfy evolving operational requirements, e.g., Cooperative Engagement Capability (CEC), Satellite Communications (SATCOMS), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

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 Theater Air and Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification including specific emitter identification, multi-source integration, Airborne Battlefield Command and Control (ABC2), and Single Integrated Air Picture (SIAP) 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.

### **CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justifica	DATE: February 2004	1		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NA	ME PROJECT NUMBE		<u> </u>
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPRO	/EMENTS	
B. Accomplishments/Planned Program		,		
2. Accomplication of terminal Frequency				
	F	′ 03 FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				
	F	′ 03 FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	2.	380 2.300		
RDT&E Articles Quantity				
Multi Occurs Internation (MOI) Discos I				
Multi-Source Integration (MSI) Phase I	ction with CEC follow-on Test and Evaluation (FC	T9 E) for E 2C		
Fund MSI Phase I productionization and final		1&E) 101 E-2C.		
Fund MSI Fhase i productionization and imai	test and evaluation for heiding in the E-2C.			
	F	′ 03 FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	2.	326		
RDT&E Articles Quantity				
Theater Air and Missile Defense (TAMD) Req	uiromonte			
	pport new architectures. Supported organic senso	or/resource management		
Conducted aviornes system trade study to su	pport new architectures. Supported organic serior	management.		

#### CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
				February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	IAME	
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENT	ΓS	

#### B. Accomplishments/Planned Program (Cont.)

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.501	1.100	0.950
RDT&E Articles Quantity			

#### Multi-Source Integration (MSI) Phase II

Developed software applications to facilitate incorporation of new technologies such as MSI in existing E-2C operational Flight Program (OFP). Performed data collection to support MSI efforts and participated in Fleet Battle Experiment Juiliet. Fund requirements analysis for development of integrated communication system architecture to support advanced sensor networking. Fund Fleet Battle Group interoperability testing and evaluation for the E-2C. Perform all source data fusion in the E-2 including radar, Identification Friend or Foe (IFF), Electronic Surveillance Measures (ESM), Link 16, Link 11, and Cooperative Engagement Capability (CEC).

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.000	1.200	
RDT&E Articles Quantity			

### Integrated Processor Architecture Development

Perform integrated processor architecture development to support programs computer resources roadmap to improve computer performance and incorporate new technologies.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.295	2.100	0.200
RDT&E Articles Quantity			

#### Single Integrated Air Picture (SIAP) Block 0

Fund Multi-Source Integration (MSI) development to support SIAP and add correlation/decorrelation to support MSI.

### **CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification				
PROGRAM ELEMENT NUMBER AND	NAME	PROJECT NUMBER AND NA		February 2004
0204132N, E-2 3QUADRONS		0403, E-20 IIVIPROVEIVIENT	3	
	FY 03	FY 04	FY 05	
		2.049	3.676	
(ABC2). Develop ABC2 Software and Auto	mated Decision A	ides.		
	FY 03	FY 04	FY 05	
			1.229	
and evaluation for fielding in the E-2C.				
	FY 03	FY 04 0.989	FY 05	
	0204152N, E-2 SQUADRONS  I (ABC2). Develop ABC2 Software and Auto  and evaluation for fielding in the E-2C.	FY 03  I (ABC2). Develop ABC2 Software and Automated Decision A  FY 03	FY 03 FY 04 2.049  I (ABC2). Develop ABC2 Software and Automated Decision Aides.  FY 03 FY 04	FY 03 FY 04 FY 05 2.049 3.676  I (ABC2). Develop ABC2 Software and Automated Decision Aides.  FY 03 FY 04 FY 05 1.229

#### **CLASSIFICATION:**

	1		DATE: February 2004
PROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAM	
T&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS	
Accomplishments/Planned Program (Cont.)			
, ,			
11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.461	
RDT&E Articles Quantity			
Support integration of the Multi-purpose Trans	sportable Middleware capability into the E-2C Hawkeye 2000	) mission computer.	
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	FY 03	FY 04 1.682	FY 05
RDT&E Articles Quantity			FY 05
RDT&E Articles Quantity  Congressional Add for Non-Cooperative Com	bat Identification Capability (9419). neering, and system prototyping for an advanced non-coope	1.682 erative identification system capability.	
RDT&E Articles Quantity  Congressional Add for Non-Cooperative Com	bat Identification Capability (9419).	1.682	FY 05

### CLASSIFICATION:

HIBIT R-2a, RDT&E Project Justification					February 2004
PROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER A	AND NAME		PROJECT NUMBER AND N	
DT&E, N / BA-7	0204152N, E-2 SQUADRONS			0463, E-2C IMPROVEMENT	-s
C. PROGRAM CHANGE SUMMARY:			•		
Funding:	FY 2003	FY 2004	FY 2005		
Previous President's Budget:	7.773	9.083	6.229		
Current BES/President's Budget:	8.502	19.331	6.055		
Total Adjustments	0.729	10.248	-0.174		
Summary of Adjustments  Congressional program reductions					
Congressional program reductions  Congressional undistributed reduction  Congressional rescissions	ns	-0.232			
SBIR/STTR Transfer	-0.153				
Reprioritization		-0.220	-0.167		
Economic Assumtions			-0.007		
Reprogrammings	0.882				
Congressional increases		10.700			
Subtotal	0.729	10.248	-0.174		
	FY03 from the first quarter to the third or MSI to slide according. No impact to the	•		erformance in control signals	in Multi-Mission Advanced Tactical Terminal (MATT) rac
гесппсаг. пот дрисане.					

#### **CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:	
		February 2004	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-7	0204152N, E-2 SQUADRONS	0463, E-2C IMPROVEMENTS	

#### D. OTHER PROGRAM FUNDING SUMMARY:

								To	Total
Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	Cost
APN-1/E-2C (LI# 12 & 13)	286.594	226.811	247.950	249.059	208.579	175.895	733.639	10283.83	14917.757
APN-5/E-2C (LI# 36)	25.001	50.274	15.124	13.785	9.444	9.338	8.561	349.280	923.011
APN-6/E-2C (LI# 53)	20.970	2.947	1.148	0.000	0.000	0.000	11.925	287.622	430.515

### Related RDT&E

- (U) 0204152N E-2 Squadrons PU E2321
- (U) 0603658N (Ship Self Defense, CEC)
- (U) 0604234N Advanced Hawkeye

#### E. ACQUISITION STRATEGY:

Not Applicable

#### CLASSIFICATION:

									DATE:								
Exhibit R-3 Cost Analysis (pag	je 1)								February 2	004							
APPROPRIATION/BUDGET ACTIVI			PROGRAM E	LEMENT			PROJECT NU	JMBER AND	NAME								
RDT&E, N / BA-7			0204152N, E-	2 SQUADRON			0463, E-2C IMPROVEMENTS										
Cost Categories		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		Target Value of Contract				
Primary Hardware Dev MCU	SS/CPIF	NGC, NY/FL		157.460								157.460	157.460				
Primary Hardware Dev CEC	SS/CPFF	NGC, NY/FL		291.513								291.513	291.513				
Primary Hardware Dev.	Various	Various		5.765	0.882	09/03						6.647					
Primary Hardware Mod ICR	SS/CPFF	NGC, NY		1.766								1.766	1.766				
Primary Hardware - JMPS/TAMPS	WX	PT. Mugu, CA		0.255								0.255					
Primary Hardware - SEI	SS/CPFF	NGC, NY		7.638								7.638	7.638				
Primary Hardware - MSI	C/CPFF	Various			2.925	02/03	0.700	10/03				3.625	3.625				
Primary Hardware - IPAD	SS/CPFF	NGC					1.000	10/03				1.000	1.000				
Primary Hardware - ABC2	Various	Various					2.049	01/04	1.800	10/04		3.849					
Primary Hardware - SIAP	Various	Various			1.093	01/03	2.100	01/04				3.193					
Primary Hardware - SIAP																	
E-2C Prog Spt Act	TBD	Various					0.989	02/04				0.989					
E-2C Prog Spt Act-SBIR Phase III	TBD	Various					3.461	02/04				3.461					
Non-Coop Combat ID Capability	TBD	Various					1.682	02/04				1.682					
PMRF Net-Centric Test Bed	TBD	Various					4.450	02/04				4.450					
Training Development																	
Licenses																	
Tooling																	
GFE																	
Primary Hardware - AODS	TBD	Various							0.600	10/04		0.600					
Subtotal Product Development				464.397	4.900		16.431		2.400	)		488.128					

Remarks:

#### CLASSIFICATION:

Remarks:

Exhibit R-3 Cost Analysis (page 1)   February 2004	Target Value of Contract 519 661 5.661
Cost Categories Contract Method Activity & PY's FY 03 Award FY 04 FY 05 Award Cost to Total & Type Location Cost Cost Date Cost Date Cost Date Cost Date Cost Date Cost Date Cost Cost Cost Cost Cost Cost Cost Cost	of Contract 519 661 5.661
	519 661 5.661
Government Eng. Spt -ASA/UESA C/CPFF Classified 5.661 5.661 5.661	300
Government Eng. Spt - ASA MIPR NRL, Wash., D.C. 0.600	
	301 2.301
Government Eng. Spt (RAND) MIPR Pentagon, Wash., D.C. 0.300	300
Government Eng. Spt (SIAP) Various Various 0.202 05/03 0.200 10/04 0	402
Development Support WX/RL NAWCAD, PAX RIVER, MD 0.000 0.600 10/03 (	600
Software Development Software Development	
Integrated Logistics Support	
Configuration Management	
Technical Data	
Studies & Analyses	
GFE GFE	
Subtotal Support         84.090         0.320         1.700         1.273         87	383

#### CLASSIFICATION:

								DATE:									
Exhibit R-3 Cost Analysis (pag	e 2)							February 20	004								
APPROPRIATION/BUDGET ACTIVI	TY	PROGRAM EI				PROJECT NUMBER AND NAME											
RDT&E, N / BA-7		0204152N, E-2		S		0463, E-2C IM											
Cost Categories	Contract		Total		FY 03		FY 04		FY 05								
	Method			FY 03	Award	FY 04	Award		Award	Cost to	Total	Target Value					
	& Type	Location	Cost	Cost	Date	Cost	Date		Date	Complete	Cost	of Contract					
Dev. Test & Eval MCU/Various	WX/RC	NAWCAD, PAX RIVER, MD	88.905	2.152	12/02	0.700	10/03	1.639	10/04	Continuing	Continuing						
` ,	PD	NAVSEA	2.483								2.483						
Dev. Test & Eval. LEAR Jet - MCU	PD	PMA-207	0.601								0.601						
Dev. Test & Eval MCU	WX	PMRF, HAWAII	1.500								1.500						
Dev. Test & Eval. Misc MCU	MIPR	VARIOUS	0.666								0.666						
Dev. Test & Eval Contract/Improv	MIPR	TBD	0.325								0.325						
Dev. Test & Eval EBC	TBD	VARIOUS	2.500								2.500						
Subtotal T&E			96.980	2.152		0.700		1.639		Continuing	Continuing						
Contractor Engineering Support											0.000						
Government Engineering Support											0.000						
Program Management Support	WX/RX	NAWCAD, PAX RIVER, MD	0.091	1.016	01/03	0.470	10/03	0.683	10/04		2.260						
Travel	WX/WR	NAWCAD, PAX RIVER, MD	0.166	0.114	12/02	0.030	10/03	0.060	10/04	Continuing	Continuing						
Transportation											0.000						
											0.000						
Subtotal Management			0.257	1.130		0.500		0.743		Continuing	Continuing						
Remarks:																	
Total Cost			645.724	8.502		19.331		6.055		Continuing	Continuing						
Remarks:																	

#### CLASSIFICATION:

EXHIBIT R4, Schedule																									DATE <b>Feb</b> r	uary	2004	ı				
APPROPRIATION/BUDGET									PROC	3RAM	ELEM	ENT N	UMBE	R AND	MAM C	E					PROJ	IECT N	IUMBE	R ANI	D NAM	1E						
RDT&E, N /	BA-7	7							02041	152N, I	E-2 SC	UADR	RONS								0463,	E-2C	IMPRO	VEME	ENTS							
Fiscal Year		20	002	_		20	03	_		20	04			20	05			20	006			20	07			20	08	_		200	09	
	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
Acquisition/T&E Milestones																																
MSI			Deve	elopme	ent		S&T D	emo			FQ	T I	Deplo	ľ																		
AODS										5	&T <sub>/</sub> De		OT				√De	oloy		Interin	n S/W t	o AHE										
								<u> </u>		5	∠_\ &T <sub>/</sub> D€		QT Tr ΛΔι	ansititio	on to																	
IPAD							E K	evelop	ment	ı	$\overline{}$		ΓΖ,	L/   L2																$\vdash$		
ABC2						FE						\ 0.4	De	evelopr	nent			101	I								Т	ransitit to AH	ion F			
MSI PH II										JCI	ET/JTF	X 04						JCIE	T_06							FG	)T	١٣/ ١		i l		
																										10	× 1	J/ 				
SIAP Blk 0																																
																														$\vdash \vdash$		
Production Milestones																																
LRIP I																																
LRIPII																																
FRP																																
Deliveries																																

<sup>\*</sup> Not required for Budget Activities 1, 2, 3, and 6

### **CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE:	ebruary 20	04				
APPROPRIATION/BUDGET ACTIVITY	MBER AND NA	AME										
RDT&BA-7	0204152N, E-:	2 SQUADRON	S		0463, E-2C IM	C IMPROVEMENTS						
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009				
MSI PH I Development	2Q - 4Q	1Q - 2Q	112004	1 1 2000	1 1 2000	1 1 2007	1 1 2000	1 1 2003				
MSI PH I S&T Demo	20 10	3Q										
MSI PH I FQT		JQ.	2-4Q									
MSI PH I Deploy				1Q								
AODS S&T			3Q	. ~								
AODS FQT			4Q	1Q - 4Q								
AODS Deploy					1Q							
AODS Interim S/W to AHE					4Q							
IPAD Development		1Q - 4Q	1Q - 4Q									
IPAD Demo			3Q									
IPAD Transition to AHE/HE2K				1Q								
ABC2 FBE K		3Q										
ABC2 Development			1Q - 4Q	1Q - 4Q	1Q - 4Q							
MSI PH II FQT		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 3Q					
MSI PH II JCIET			3Q		3Q							
MSI PH II Transition to AHE							4Q					
SIAP Blk 0		1Q - 4Q	1Q - 4Q	1Q - 4Q								