

EXHIBIT R-2, RDT&E Budget Item Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						R-1 ITEM NOMENCLATURE 0604234N, E-2C RADAR MODERNIZATION PROGRAM		
BA 5								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	542.447	614.231	497.842	748.203	339.531	163.569	96.609	
3051 E-2C RMP	542.447	614.231	497.842	748.203	339.531	163.569	96.609	

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

The E-2 Advanced Hawkeye (AHE) program develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components that modernize the E-2C weapon system to maintain open ocean mission capability while providing the United States Navy (USN) with an effective littoral surveillance, battle management, and Theater Air and Missile Defense (TAMD) capability. Key radar technologies are Space-Time Adaptive Processing (STAP), Electronically Scanning Array (ESA), solid state transmitter, high dynamic range digital receivers and Identification Friend or Foe (IFF)/radar aperture integration. The resultant detection system will provide a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas, while simultaneously contributing to the emerging TAMD mission requirements.

This P.E. was utilized for AHE (Radar Modernization Program (RMP)) pre-System Development and Demonstration (Pre-SD&D) , followed by SD&D. The program supported a Weapon System Preliminary Design Review (PDR) and a Radar System Critical Design Review (CDR) in FY 2005. Major activities in FY 2006 are to support subsystem and weapon system Critical Design Reviews (CDR) and risk reduction efforts. FY 2006 efforts also include subsystem delivery for systems integration lab activities. The program begins E-2 AHE Pilot Production in FY 2007 (long lead on four aircraft), the production phase with a Low-Rate Initial Production (LRIP) Milestone C decision in FY 2009, and achieves Initial Operational Capability (IOC) in FY 2011.

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /							February 2006	
BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 3051, E-2C RMP		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
3051 E-2C RMP	542.447	614.231	497.842	748.203	339.531	163.569	96.609	
RDT&E Articles Qty			2*	4*				
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The E-2 Advanced Hawkeye (AHE) program develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components that modernize the E-2C weapon system to maintain open ocean mission capability while providing the United States Navy (USN) with an effective littoral surveillance, battle management, and Theater Air and Missile Defense (TAMD) capability. Key radar technologies are Space-Time Adaptive Processing (STAP), Electronically Scanning Array (ESA), solid state transmitter, high dynamic range digital receivers and Identification Friend or Foe (IFF)/radar aperture integration. The resultant detection system will provide a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas, while simultaneously contributing to the emerging TAMD mission requirements.</p> <p>The AHE program also upgrades or replaces aircraft system components that are either obsolete or becoming unsupportable, upgrades or replaces other aircraft systems as required to support the radar upgrade, and improves the operational availability and producibility of the weapons system. 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. The AHE is intended to meet battle management and TAMD needs as the United States Navy develops its "Sea Power 21" concepts in support of Joint Vision 2020.</p> <p>This P.E. was utilized for AHE (Radar Modernization Program (RMP)) pre-System Development and Demonstration (Pre-SD&D) , followed by SD&D. The program supported a Weapon System Preliminary Design Review (PDR) and a Radar System Critical Design Review (CDR) in FY 2005. Major activities in FY 2006 are to support subsystem and weapon system Critical Design Reviews (CDR) and risk reduction efforts. FY 2006 efforts also include subsystem delivery for systems integration lab activities. The program begins E-2 AHE Pilot Production in FY 2007 (long lead on four aircraft), the production phase with a Low-Rate Initial Production (LRIP) Milestone C decision in FY 2009, and achieves Initial Operational Capability (IOC) in FY 2011.</p> <p>*Two Multi-Year Procurement E-2C aircraft will be delivered and modified in FY07 to provide RDT&E assets for the AHE program. Quantities in FY08 are the pilot production aircraft.</p>								

APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM	PROJECT NUMBER AND NAME 3051, E-2C RMP
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		9.810	56.068
RDT&E Articles Qty			

Fund Weapons System Trainers (WST), Operational Flight Trainers (OFT) and Simulated Maintenance Trainers (SMT).

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	5.526	1.250	.240
RDT&E Articles Qty			

NC-130H/E-2 Classified Programs
 Provided support for the NC-130H engineering risk reduction efforts. Fund E-2 Classified Development efforts. Funded NC-130H AHE Advanced Development Model (ADM) system flight test and test analysis.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	23.275	24.555	44.549
RDT&E Articles Qty			

NAWCAD Support
 Fund Government Engineering, Contractor Engineering, and Classified Engineering Support. Perform Government oversight. Perform engineering and loads analysis, design, preparation, installation and ground test calibration of instrumentation and for A-123 Loads Test. Execute test program risk reduction efforts. Increase in FY07 is to fund Qualification/Reliability Developmental Testing (QUAL/RDT), preparation for first flight activities at St. Augustine, FL, development and creation of the wind tunnel test model, preparation for the wind tunnel testing to include the rehost of the simulation data, and design and develop a digital engine control system for obsolescence, weight reduction, and performance improvements.

APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM	PROJECT NUMBER AND NAME 3051, E-2C RMP
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	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	6.686	1.186	20.278
RDT&E Articles Qty			

Government Furnished Equipment (GFE)
Fund GFE for the SDD aircraft in FY05 and FY06. Initial funding for pilot production aircraft GFE in FY07.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	506.961	577.430	376.707
RDT&E Articles Qty			2

System Development and Demonstration (SD&D)
Awarded SD&D Contract with Northrop Grumman Corporation. Entered into SD&D for E-2 AHE program; conducted engineering and development efforts in preparation for Preliminary Design Review for the AHE weapons system, and Radar Critical Design Review (CDR). Conducted engineering and development efforts in preparation for Weapon System CDR and SDD pilot production. Continue SD&D effort.

Totals may not add due to rounding.

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	BA 5	0604234N, E-2C RADAR MODERNIZATION PROGRAM
		3051, E-2C RMP

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	590.592	629.682	558.415
Current BES / President's Budget:	542.447	614.231	497.842
Total Adjustments	-48.145	-15.451	-60.573

Summary of Adjustments

Congressional Reductions		-6.000	
Congressional Rescissions			
Congressional Undistributed Reductions	-15.129	-6.584	
Congressional Increases			
Economic Assumptions		-2.867	3.370
Miscellaneous Adjustments	-33.016		-63.943
Subtotal	-48.145	-15.451	-60.573

Schedule:

Development Test DT/DT Assist - schedule has been adjusted to correspond with SDD deliveries.
 Production Milestones schedule has been changed to reflect pilot production contract award.

Technical:

Not Applicable.

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RDT&E, N /		0604234N, E-2C RADAR MODERNIZATION PROGRAM					3051, E-2C RMP		
D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-1/E-2C (LI# 14 & 15)				76.089	709.377	797.224	785.947	9,749.892	12,118.529
APN-6/E-2C (LI #55)					15.997	11.478	9.179	175.425	212.079
APN Funding prior to FY08 is related to P.E. 0204152N, P.U. 0463, E-2C Improvements.									
<u>Related RDT&E</u>									
(U) 0603658N (Ship Self Defense, CEC)									
E. ACQUISITION STRATEGY: Acquisition Strategy was signed by the MDA, USD (AT&L) on 13 May 2003. Milestone B approval to proceed with System Development and Demonstration was given 6 June 2003 by the Defense Acquisition Board (DAB).									

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 5		0604234N, E-2C RADAR MODERNIZATION PROGRAM				3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Award Fees	SS-CPAF	NORTHROP GRUMMAN SYS, NY	8.589	8.607	10/04	24.482	10/05	18.845	10/06	70.879	131.400	131.400
GFE	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.063	10/04						1.063	
GFE	VARIOUS	ROCKWELL COLLINS, INC., CEDAR RAPIDS		1.382	10/04						1.382	
GFE	VARIOUS	SPAWARSYSCOM, SAN DIEGO CA		1.733	10/04						1.733	
GFE	VARIOUS	VARIOUS		2.508	VARIOUS	1.186	10/05	20.278	10/06	47.026	70.999	
Primary Hardware Development - SDD	SS-CPAF	NORTHROP GRUMMAN SYS, NY	305.780	492.753	10/04	547.211	10/05	347.333	10/06	933.498	2,626.576	2,626.576
Systems Engineering	RX	NAVY SYST MGT ACT, ARLINGTON VA		.500	06/05						.500	
Training Development	TBD	TBD				9.810	02/06	56.068	02/07	80.523	146.401	
All Product Dev cost from program implementation thru FY04			139.948								139.948	
SUBTOTAL PRODUCT DEVELOPMENT			454.317	508.546		582.689		442.524		1,131.926	3,120.001	
Remarks: Totals may not add due to rounding.												
SUPPORT												
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	NAVY SYST MGT ACT, ARLINGTON VA		.805	11/04			1.516	11/06	4.483	6.804	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	NAWCAD, PATUXENT RIVER MD		.357	12/04			2.121	12/06	8.638	11.115	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	VARIOUS		.623		2.224	12/05				2.847	
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD		13.844	11/04	14.189	11/05	27.319	11/06	102.612	157.964	
Government Eng Sup	VARIOUS	VARIOUS		.584	VARIOUS			1.100	VARIOUS	6.178	7.862	
Studies & Analyses (Non- FFRDC)	RX	NAVY SYST MGT ACT, ARLINGTON VA		2.518	06/05	1.250	06/06				3.768	
All Support cost from program implementation thru FY04			14.300								14.300	
SUBTOTAL SUPPORT			14.300	18.731		17.663		32.056		121.910	204.660	
Remarks: Totals may not add due to rounding.												
TEST & EVALUATION												
Developmental Test & Evaluation	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.700	11/04	5.737	11/05	10.529	11/06	85.914	103.880	
Developmental Test & Evaluation	VARIOUS	TBD								6.616	6.616	
Test Assets	SS/CPAF	NORTHROP GRUMMAN SYS, NY		3.900	12/04						3.900	3.900
All T&E cost from program implementation thru FY04			9.223								9.223	
SUBTOTAL TEST & EVALUATION			9.223	5.600		5.737		10.529		92.530	123.620	
Remarks: Totals may not add due to rounding.												

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APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 5		0604234N, E-2C RADAR MODERNIZATION PROGRAM				3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MANAGEMENT												
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	ADVANCED INFORMATION ENGINEERING S		4.166	11/04						4.166	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	NAVY SYST MGT ACT, ARLINGTON VA		1.703	11/04			2.479	11/06	8.669	12.851	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	VARIOUS		.457	VARIOUS	5.710	11/05	4.330	11/06	20.489	30.987	
Government Eng Spt - CEC P3I	TBD	TBD						.673	11/06	4.849	5.522	
Government Eng Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD		2.536	11/04					8.981	11.517	
Government Eng Sup	VARIOUS	VARIOUS						3.922	11/06	7.692	11.614	
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD				2.106	11/05	.829	11/06	3.469	6.403	
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD		.008	VARIOUS					2.772	2.780	
Travel	VARIOUS	NAWCAD, PATUXENT RIVER MD	.350	.700	11/04	.326	11/05	.500	11/06	2.113	3.989	
All Mgmt cost from program implementation thru FY04			28.578								28.578	
SUBTOTAL MANAGEMENT			28.928	9.570		8.142		12.733		59.034	118.407	
Remarks: Totals may not add due to rounding.												
Total Cost			506.769	542.447		614.231		497.842		1,405.400	3,566.687	
Remarks: Totals may not add due to rounding.												

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EXHIBIT R4, Schedule Profile																									DATE: February 2006							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5										PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM										PROJECT NUMBER AND NAME 3051, E-2C RMP												
Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 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				
Acquisition Milestones																																
AHE System Development	▲ PDR				▲ CDR																											
SDD AHE Systems Installation																																
Test & Evaluation Milestones																																
Development Test	DT/DT Assist								DT/DT Assist								DT/DT Assist - Pilot Production															
Operational Test																																
Production Milestones																																
Deliveries																																

* DT/DT Assist in FY05/FY06 and 1Q-2Q of FY07 includes NC-130/A-123/lab integration dedicated for weapon system development and air vehicle testing.

* DT/DT Assist in FY07-FY09 includes efforts for weapon system development and air vehicle testing on SD&D #1 and SD&D #2 aircraft.

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