

PE NUMBER: 0207417F

UNCLASSIFIED

PE TITLE: Airborne Warning & Control System (AWACS)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1999		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0207417F Airborne Warning & Control System (AWACS)				PROJECT 411L		
COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
411L Airborne Warning & Control System (AWACS)	48,716	33,173	33,393	49,170	25,639	58,452	82,328	130,369	TBD	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description
 Develops and integrates system improvements to enable the E-3 AWACS to remain an effective, survivable airborne surveillance system for command and control of tactical forces and for strategic defense of the U.S.
 The Block 30/35 upgrade includes Electronic Support Measures (ESM), Central Computer Memory Upgrade, Joint Tactical Information Distribution System (JTIDS) Class 2H/TADIL J and NAVSTAR Global Positioning System (GPS) integrated navigation (GINS). The Block 30/35 upgrade is a production program.
 The Radar System Improvement Program (RSIP) will increase radar reliability and maintainability, improve E-3 surveillance capability against evolving threats posed by low radar cross section fighters and cruise missiles, improve electronic counter-countermeasures (ECCM), and enhance man-machine interface for the Airborne Radar Technicians (RSIP is a production program).
 The Mission Computing Upgrade (Step 1 Computers and Displays) is an Extend Sentry effort to improve the reliability of the data display and mission computing system while also correcting long-standing operational deficiencies (Step 1 C&D development will complete with the FY98 efforts). Extend Sentry is a collection of user prioritized projects targeting investment in three areas: to prevent grounding of aircraft; to buy back aircraft from maintenance downtime; and to correct long-standing deficiencies to meet operational requirements. The Computers & Displays project is the primary Extend Sentry near-term focus. Additional Extend Sentry activities will be included in out-year budget requests.
 The Offensive Counter-Air and System Architecture Improvements are concept exploration and program definition/risk reduction efforts that implement a spiral development process allowing continuous improvements such as Defense Information Infrastructure (DII)-Global Command and Control System (GCCS) compliance for real-time operating systems and "plug-and-play" software upgrades such as automated Air Tasking Orders and onboard common operational picture. These, and other new capabilities, are being developed to operate on the Step 1 Mission Computing hardware architecture as follow-on applications and were demonstrated at the Expeditionary Forces Exercise (EFX) in September 1998.
 The E-2/E-3 commonality effort focuses primarily on advanced receiver and processing technologies. This effort provides a forum to review all activities in the E-2 and E-3 AWACS programs and identify additional opportunities for technology and development exploitation. Test System 3 (TS-3)/AWACS Development and Production Test (ADAPT) support includes maintenance and operations of the government owned, contractor operated test aircraft and associated laboratory facilities located at Boeing in Seattle, Washington. Cooperative Engagement Capability (CEC) is a Navy-developed program designed to allow sensor fusion ("netting") of airborne targets for dissemination and display to multiple theater platforms. The CEC effort in this program element (PE 27417F) will integrate CEC hardware and software onto TS-3 to support a Single Integrated Air Picture (SIAP) flight demonstration in FY03.

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<p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$16,963 Extend Sentry (Step 1 Computers & Displays Upgrade) - (U) \$ 955 Offensive Counter Air Upgrades/System Architecture Improvements - (U) \$12,752 E-2/E-3 Commonality - (U) \$18,046 Test System-3/ADAPT support and program sustaining efforts - (U) \$48,716 Total <p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 7,410 Offensive Counter Air Upgrades/Systems Architecture Improvements - (U) \$ 7,500 E-2/E-3 Commonality - (U) \$ 3,934 JTIDS DLI - (U) \$13,287 ADAPT support and program sustaining efforts - (U) \$1,042 Identified as a source for SBIR - (U) \$33,173 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 9,797 Offensive Counter Air Upgrades/Systems Architecture Improvements - (U) \$ 7,796 Test System-3/ADAPT support and program sustaining efforts - (U) \$15,800 Cooperative Engagement Capability (CEC) on TS-3 - (U) \$33,393 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$20,159 Offensive Counter Air Upgrades/Systems Architecture Improvements - (U) \$15,311 Test System-3/ADAPT support and program sustaining efforts - (U) \$13,700 Cooperative Engagement Capability (CEC) on TS-3 - (U) \$49,170 Total <p>(U) B. Budget Activity Justification: Operational Systems Development, Budget Activity 7. AWACS is a fielded, operational system currently undergoing major modifications/block upgrades and continuing sustainment activities.</p>		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE February 1999				
BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT					
7 - Operational System Development	0207417F Airborne Warning & Control System (AWACS)				411L					
(U) C. <u>Program Change Summary (\$ in Thousands)</u>										
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>					
(U) Previous President's Budget (FY 1999 PB)	43,606	28,189	26,015	36,423	TBD					
(U) Appropriated Value	46,807	34,189								
(U) Adjustments to Appropriated Value										
a. Congressional General Reductions	-2,038	-1,016								
b. SBIR	-1,170									
c. Omnibus or Other Above Threshold Reprogram	-297									
d. Below Threshold Reprogramming	5,414									
(U) Adjustments to Budget Since FY99 PB			7,378	12,747						
(U) Current Budget Submit/FY00 PB	48,716	33,173	33,393	49,170	TBD					
 (U) Significant Program Changes:										
<p>FY98: \$5.414M BTR required to fund Step 1 Computers and Displays development, lab and flight test activities, and EFX 98 efforts. FY99: \$6M Plus-up in RDT&E for mission computing and sensor processing modernization. \$1.042M identified as a source for SBIR. FY00: \$7.8M of AWACS RDT&E was transferred to the E-3 Mods Aircraft Procurement account to fund a shortfall within the AWACS Block 30/35 upgrade. The FY00 RDT&E funds were originally programmed to operate and maintain the AWACS test aircraft (TS-3) at the Boeing facility in Seattle, WA. As a result, TS-3 will be shutdown for approximately 6-8 months during FY00 and will be unavailable to participate in technology demonstrations and experiments during that period. Subsequently, \$15.8M was transferred into the FY00 AWACS RDT&E budget to support integration of CEC onto TS-3. After reductions the result is a net change of \$7.4M. FY01: \$12.7M was transferred into the FY01 AWACS RDT&E budget to support integration of CEC onto TS-3.</p>										
(U) D. <u>Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
(U) Aircraft Procurement, AF, E-3 Mods	120,855	112,480	124,061	110,671	89,849	103,489	97,210	96,265	TBD	TBD
(U) E-3 Initial Spares, AF	6,515	3,331	40,717	33,340	14,531	2,497	18,005	7,952	TBD	TBD

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(U) E. Acquisition Strategy:

Block 30/35: The Electronic Support Measures (ESM) component of Block 30/35 is joint development program with NATO. The production contract utilizes a Fixed Price Incentive Fee (FPIF) plan with options to Boeing for ESM and other Block 30/35 Group A hardware. The contract with Lockheed for the CC-2E memory upgrade is a fixed price contact with follow-on options. JTIDS and Global Positioning System hardware is acquired via their respective program office-awarded contracts. The Radar System Improvement Program (RSIP) is a cooperative development program with NATO and the United Kingdom. Boeing is the prime integrating contractor; Northrop-Grumman is the subcontractor for radar component items. The RSIP production contract is Firm Fixed Price (FFP) with priced options through FY99 and is a sole source to Boeing follow-on FY00 RSIP production contract. The Extend Sentry acquisition strategy utilizes an approved contract structure that includes multiple contracts with multiple organizations with overlapping and continuous performance periods. The Program Office has the flexibility to quickly add specific Extend Sentry tasks as funding is made available.

(U) F. Schedule Profile

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) RSIP Trial Install Start			*													
(U) RSIP Trial Install Complete				*												
(U) RSIP IOC 2QTR FY00										X						
(U) RSIP FOT&E Complete							X									
(U) RSIP KIT DELIVERY (#1)		*														
(U) RSIP KIT DELIVERY (#2)				*												
(U) RSIP KIT DELIVERY (#3)					X											
(U) RSIP KIT DELIVERY (#4)								X								
(U) RSIP KIT DELIVERY (#5)									X							
(U) RSIP KIT DELIVERY (#6)										X						
(U) RSIP KIT DELIVERY (#7)											X					
(U) RSIP KIT DELIVERIES (#8-9)												X				
(U) RSIP KIT DELIVERIES (#10-12)													X			
(U) RSIP KIT DELIVERY (#13)															X	
(U) BLK 30/35 RAA/IOC		*														
(U) LAST BLK 30/35 MOD INDUCTION																X
(U) BLK 30/35 FOC 1QTR FY02																

* Denotes completed events
X Denotes planned events

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 7 - Operational System Development						PE NUMBER AND TITLE 0207417F Airborne Warning & Control System (AWACS)				PROJECT 411L	

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Identified as a source for SBIR							1,042				
<u>Product Development Organizations</u>											
(U) Boeing(RSIP)	C/FPIF	9/89	88,500	93,517	93,517	0	0	0	0	0	93,517**
(U) WECO(RSIP)	C/FPIF	9/89	327,400	306,900	259,155	0	0	0	0	0	259,155**
(U) Boeing(Blk 30/35)	SS/FPIF	5/87	N/A	N/A	291,667	0	0	0	0	0	291,667**
(U) Extend Sentry / Offensive Counter Air Upgrades / Systems Architecture Imp.	Multiple	N/A*	N/A	N/A	45,102	17,733	13,879	9,233	26,065	TBD	TBD
(U) E-2/E-3 Commonality	Multiple	N/A	N/A	N/A	0	12,752	5,810	0	0	0	18,562
(U) CEC Integration	TBD***	TBD	42,000	42,000	0	0	0	15,800	13,700	4,600	34,100

* N/A based on Extend Sentry Acquisition Strategy which includes multiple contracts with multiple organizations with overlapping and continuing performance periods.
 ** Total Program does not include NATO funds.
 *** The AWACS Program Office has signed a Memorandum of Agreement with the CEC Program Office to outline organizational responsibilities for the CEC integration activity. A request for proposal has not been released and the contract structure is TBD at this time.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
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<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Support and Management Organizations</u>											
(U)Support/TEMS MITRE, travel, other	Multiple contracts	N/A	N/A	N/A	553,227	4,044	5,068	2,860	2,905	TBD	TBD
<u>Test and Evaluation Organizations</u>											
(U) Test System-3 ADAPT Contract / Other test activities	Multiple	N/A	N/A	N/A	33,800	14,187	7,374	5,500	6,500	TBD	TBD
Government Furnished Property:											
None											
Identified as a source for SBIR											
Subtotal Product Development					689,441	30,485	19,689	25,033	39,765	TBD	TBD
Subtotal Support and Management					553,227	4,044	5,068	2,860	2,905	TBD	TBD
Subtotal Test and Evaluation					33,800	14,187	7,374	5,500	6,500	TBD	TBD
Total Project					1,276,468	48,716	33,173	33,393	49,170	TBD	TBD

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