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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207417F / <i>Airborne Warning and Control System (AWACS)</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	108.779	167.014	239.658	0.000	239.658	599.899	415.325	293.956	160.266	Continuing	Continuing
67411L: <i>Airborne Warning &amp; Control System (AWACS)</i>	-	108.779	167.014	239.658	0.000	239.658	599.899	415.325	293.956	160.266	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
 This program, BA 7, PE 0207417F, project 67411L, E-3 Replacement, is a new start.

**A. Mission Description and Budget Item Justification**

Mission: E-3 Airborne Warning and Control System (AWACS) is the premier airborne platform providing Battle Management Command and Control (BMC2) for Commander In Chief and combatant commander tasking in joint, allied, and coalition operations, humanitarian relief, and homeland defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include: All-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

Major efforts for the AWACS program include:

1. E-3 Replacement: E-3 Replacement is the planned E-3G AWACS replacement. The E-3G AWACS has limited operational utility in contested conflicts coupled with its availability challenges create an operational imperative to replace it. The E-3 Replacement will provide improved kill-chain effectiveness, enhanced reliability/availability, and reduced operating costs by integrating a modern Electronically Scanned Array sensor on a manned platform. The electronically scanned array is capable of radar beam steering, sector staring and much faster target revisit rates that translate into better target detection and tracking of modern threats well as more robust Electronic Protection that isn't possible with the mechanically scanned radar used by E-3 AWACS.
  
2. E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON): DRAGON completes the Federal Aviation Administration (FAA), International Civil Aviation Organization (ICAO), and European Organization for the Safety of Air Navigation (EUROCONTROL) air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. DRAGON replaces the existing Diminishing Manufacturing Sources (DMS) Global Positioning System (GPS) Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode 5 Identification Friend or Foe (IFF) and Joint Mission Planning System (JMPS).
  
3. E-3 Electronic Protection (EP): EP will provide improved radar processing in a specific flight environment to meet a classified requirement. EP will replace the radar controller, exciter, receiver, and data processor in the current Radar System Improvement Program (RSIP) system. The EP-processed radar picture will appear on the battle manager's display and is intended to provide APY-2 radar quality to the entire U.S. AWACS fleet. EP also resolves DMS and obsolescence concerns with APY-1/ APY-2 radar.

UNCLASSIFIED

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<p>4. E-3 Training, Support, and Infrastructure (TSI): The TSI program provides continuing lab operations and maintenance support for AWACS modernization and enhancement across the enterprise, as well as the development and execution of an AWACS Integration and Test Support (AITS) lab transfer acquisition strategy. These activities include managing the AWACS Development Test and Evaluation (DT&amp;E) infrastructure and tracking and monitoring the AWACS support equipment and program Government Furnished Property, while managing the cost, schedule, and performance of the AITS lab transfer plan. The overall DT&amp;E test infrastructure supports development and production projects and maintains facilities to support AWACS aircraft during system and sub-system testing in Seattle, WA, Baltimore, MD, and Oklahoma City, OK, along with Third Party Integration support from The Boeing Company to AWACS customers in the System AITS labs. The TSI assets also support multiple Foreign Military Sales (FMS) projects on a maintenance fee basis, not limited to projects for France, Saudi Arabia and Japan efforts. Key programs include contractual management of the AWACS Avionics Integration Laboratory (AIL) integrated with the Block 40/45 Functional Group configured lab and the AWACS Radar Systems Integration Lab/Software Development Facility (SIL/SDF). These labs provide US, Foreign Military Sales (FMS), and Direct Commercial Sales customers with a configured development and qualification system and subsystem environment supporting all AWACS system and radar programs. TSI efforts allow new support equipment technologies and test strategies to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment.</p> <p>5. E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR): C2ISR system improvements investigate and develop future capabilities of the AWACS weapon system. These efforts also include but are not limited to investigation, analysis, and development to ensure that AWACS successfully integrates with joint and coalition forces in a net-centric environment. C2ISR primarily supports pre-systems acquisition in the areas of materiel solution analysis and technology development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter but also includes developing an E-3 Modernization &amp; Sustainment Roadmap that projects user capability needs, as well as materiel solutions for the user needs. C2ISR also supports an analytical comparison of the operational effectiveness, suitability, life-cycle cost and system capabilities of alternative materiel solutions beyond the current AWACS that satisfy an established capability need identified in an Initial Capabilities Document (ICD), Rapid Prototyping Requirements Document (RPRD), or Rapid Fielding Requirements Document (RFRD).</p> <p>6. E-3 Combat Identification (CID) DMS: AWACS' current CID capability is based upon 1960's era technology that has become unsustainable, and requires an update to retain a significant part of AWACS overall mission capability. AWACS will address C2 Combat ID shortfalls with a modern, persistent Airborne Moving Target Indicator (AMTI) BMC2 Combat ID. CID DMS supports the kill chain and decision superiority.</p> <p>7. E-3 Communication Network Upgrade (CNU): CNU will provide a Link 16 capability with high-jam-resistance, high-speed, crypto-secure computer-to-computer connectivity in support of every type of military platform from Air Force fighters to Navy submarines. The current 20 year-old Class 2 terminal has sustainability/DMS issues and does not support mandated Crypto Mod (CM) &amp; Freq. Remap (FR). CNU resolves DMS issues, provides CM &amp; FR, Link 16 enhancements &amp; growth for Next Gen Tactical Data Link (TDL). CNU capabilities will be delivered in two Phases, comprised of three Minimum Viable Product (MVP) efforts. Phase I: MVP1 (Crypto) will provide Enhanced Link 16 Crypto and Frequency Mapping, and MVP2 will provide High Powered Amplification of Communications (HPAs). Phase II: MVP3 (Link 16 Advanced Capabilities) will provide Link 16 Advanced Communications Throughput via Ethernet Connection.</p>		

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Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development R-1 Program Element (Number/Name) PE 0207417F I Airborne Warning and Control System (AWACS)

8. E-3 Mode 5 Acceleration: Updates flight deck to address known Air Traffic Management restrictions; upgrades the current flight deck transponder to include the Mode 5 capability since DRAGON's Initial Operating Capability (IOC) of 2022/Full Operational Capability (FOC) of 2028 does not meet the Mode 5 mandate. This subset accelerates the Mode 5 transponder FOC independent of DRAGON.

9. E-3 AWACS Communications Integration Program (ACIP): ACIP will provide Mobile User Objective System (MUOS) and Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) capability by replacing the existing Have Quick II and Demand Assigned Multiple Access (DAMA) SATCOM radios with new radios capable of communicating via the existing and additional military waveforms as a combined integration program on AWACS. Provides continued compatibility with US and Allied forces using frequency hopping UHF in support of airborne AMTI & BMC2 to CCMDs for Joint, Allied & Coalition ops by maintaining compatibility with CAF/Sister service C2 nodes and theater assets.

The total cost of the E-3 ACIP Middle Tier of Acquisition Rapid Prototyping (RP) effort is 64.44M, including RDT&E and procurement of prototype units. The E-3 ACIP RP program is fully funded across the Future Years Defense Program.

10. E-3 AWACS Fifth to Fourth (5th to 4th): 5th to 4th provides the capability for E-3G AWACS to receive 5th generation data via Link 16 and other data feeds, as required. This capability includes the security domain required to integrate the 5th generation data into Mission Computing Software and generate an integrated operational air picture. 5th to 4th addresses gaps and inaccuracies in the Common Tactical Picture (CTP) and improves Situational Awareness (SA) and BMC2 decision making by shortening the kill chain for warfighters in a contested environment.

Note: A unique Program Element for the E-3 replacement has been requested and is awaiting approval. E-3 GPS Upgrade (M-Code) and E-3 AWACS Global Lightning (AGL) were canceled due to E-3 Divestment Strategy.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 2.600M was expended for civilian pay expenses in this program element, and in FY22 4.750M is forecasted for civilian pay expenses in this program elements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	123.925	171.014	0.000	0.000	0.000
Current President's Budget	108.779	167.014	239.658	0.000	239.658
Total Adjustments	-15.146	-4.000	239.658	0.000	239.658
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-4.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-11.000	0.000			
• SBIR/STTR Transfer	-4.146	0.000			
• Other Adjustments	0.000	0.000	239.658	0.000	239.658

**Change Summary Explanation**

The FY2022 President's Budget submittal did not reflect FY2023 through FY2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

FY2022 received a congressional mark of \$4M for "Reduce program growth".

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Title:</b> E-3 Replacement	0.000	0.000	226.776
<b>Description:</b> E-3 Replacement: E-3 Replacement is the planned E-3G AWACS replacement. The E-3G AWACS has limited operational utility in contested conflicts coupled with its availability challenges create an operational imperative to replace it. The E-3 Replacement will provide improved kill-chain effectiveness, enhanced reliability/availability, and reduced operating costs by integrating a modern Electronically Scanned Array sensor on a manned platform. The electronically scanned array is capable of radar beam steering, sector staring and much faster target revisit rates that translate into better target detection and tracking of modern threats well as more robust Electronic Protection that isn't possible with the mechanically scanned radar used by E-3 AWACS.			
<b>FY 2022 Plans:</b> N/A			
<b>FY 2023 Plans:</b> Award contract to begin work on the following tasks: acquire long lead items and/or complete end items and potential modification components for up to two aircraft to support test and evaluation; development efforts to ensure compliance with US cyber security and program protection standards; development efforts to ensure navigation and communication systems comply with GPS Mcode and Narrowband SATCOM mandates; design and build-out contractor and government System Integration Laboratories			

**UNCLASSIFIED**

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p>supporting development, integration, and test activities; and provide analysis and products supporting airworthiness certification. Program office will also support Operational Assessment (OA) of coalition systems providing basis for follow-on production/fielding decisions, undertake Depot Source of Repair (DSOR) analysis, and assemble FAA airworthiness certification package.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Funding increased due to New Start. Though incrementally funded at the program level, significant RDT&amp;E funding is required in FY23 to fully fund [in accordance with the FMR] individual hardware components for up to two aircraft systems and modification kits.</p>				
<p><b>Title:</b> E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON)</p> <p><b>Description:</b> DRAGON: Provides analog to digital cockpit addressing the Federal Aviation Administration (FAA), International Civil Aviation Organization (ICAO), and European Organization for the Safety of Air Navigation (EUROCONTROL) air traffic control mandated safety of flight capabilities. Provides the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace.</p> <p><b>FY 2022 Plans:</b> N/A</p> <p><b>FY 2023 Plans:</b> N/A</p>		1.601	0.000	0.000
<p><b>Title:</b> E-3 Electronic Protection (EP)</p> <p><b>Description:</b> EP: Provides improved radar processing in a specific flight environment to meet a classified requirement. Replaces the radar controller, exciter, receiver, and data processor in the current Radar System Improvement Program (RSIP) system.</p> <p><b>FY 2022 Plans:</b> N/A</p> <p><b>FY 2023 Plans:</b> N/A</p>		12.727	0.000	0.000
<p><b>Title:</b> E-3 Training, Support and Infrastructure (TSI)</p> <p><b>Description:</b> Training, Support, and Infrastructure (TSI): Provides continuing management support for AWACS modernization and enhancement to include managing the AWACS Development Test and Evaluation (DT&amp;E) and Production infrastructure and tracking and monitoring the AWACS vendor's core</p>		11.561	8.342	1.413

**UNCLASSIFIED**

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
mission and aircrew training, support equipment and program Government Furnished Property, as well as providing Third Party Integration support from The Boeing Company to the AWACS Enterprise.				
<b>FY 2022 Plans:</b> TSI will continue to maintain and provide DT&E labs to AWACS programs and support AWACS development and production programs lab integration & test efforts. Will provide system lab support, integration, and test to current AWACS programs and support Third Party Integration efforts in The Boeing Company labs in Oklahoma and Washington. Will continue to support AWACS and other OSD mandated interoperability testing and support mandatory E-3 Operational, Safety, and Suitability and Effectiveness program. Additionally, will continue to support the execution of the AITS lab transfer acquisition strategy.				
<b>FY 2023 Plans:</b> TSI will continue to maintain and provide DT&E labs to AWACS programs and supporting AWACS modernization development and production providing an environment for integration & verification efforts. TSI supports Third Party Integration efforts in The Boeing Company labs in Oklahoma and Washington. TSI supports AWACS and other OSD mandated interoperability testing and supports mandatory AWACS Operational, Safety, and Suitability and Effectiveness program.				
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Funding decreased to align with reduced E-3 development activities due to planned transition to an E-3 replacement platform.				
<b>Title:</b> E-3 Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR)		33.353	41.395	2.085
<b>Description:</b> Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR): Investigate and develops future capabilities of the AWACS weapon system to include but are not limited to investigation, analysis, and development to ensure that AWACS successfully integrates with joint and coalition forces in a net-centric environment. Primarily supports pre-systems acquisition in the areas of materiel solution analysis and technology development (i.e., risk reduction activities).				
<b>FY 2022 Plans:</b> Continue to conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support risk reduction activities for program planning. Continue to execute cooperative Independent Research and Development.				
<b>FY 2023 Plans:</b> Continue to conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support risk reduction activities for program planning.				

**UNCLASSIFIED**

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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0207417F / <i>Airborne Warning and Control System (AWACS)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
Continue to execute cooperative Independent Research and Development.				
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Decrease in risk reduction requirements in alignment with transition from E-3 to an E-3 replacement platform prioritizing rapid delivery of mature capability.				
<b>Title:</b> E-3 Combat Identification (CID) Diminishing Manufacturing Sources (DMS)		0.313	20.610	0.000
<b>Description:</b> Combat Identification (CID) Diminishing Manufacturing Sources (DMS): Addresses C2 CID shortfalls with a modern, persistent Airborne Moving Target Indication (AMTI) BMC2 combat ID. Supports the kill chain and decision superiority.				
<b>FY 2022 Plans:</b> Complete software and sub-system level development; prepare for Alpha Phase II RFP release.				
<b>FY 2023 Plans:</b> N/A				
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Funding discontinued to align with reduced E-3 development activities due to planned transition to an E-3 replacement platform.				
<b>Title:</b> E-3 Communication Network Upgrade (CNU)		37.228	48.052	2.000
<b>Description:</b> Communication Network Upgrade (CNU): Provides a Link 16 capability with high-jam-resistance, high-speed, crypto-secure computer-to-computer connectivity in support of every type of military platform from Air Force fighters to Navy submarines.				
<b>FY 2022 Plans:</b> Begin rapid prototyping and development contract.				
<b>FY 2023 Plans:</b> Continue rapid prototyping and development contract.				
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Funding decreased to align with reduced E-3 development activities due to planned transition to an E-3 replacement platform.				
<b>Title:</b> E-3 Mode 5 Acceleration		4.146	0.000	0.000
<b>Description:</b> Mode 5 Acceleration:				

**UNCLASSIFIED**

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
Updates flight deck to address known Air Traffic Management restrictions; upgrades the current flight deck transponder to include the Mode 5 capability. Accelerates the Mode 5 transponder FOC independent of DRAGON.  <b>FY 2022 Plans:</b> N/A <b>FY 2023 Plans:</b> N/A				
<b>Title:</b> E-3 AWACS Communications Integration Program (ACIP) <b>Description:</b> AWACS Communications Integration Program (ACIP) Development: Provides Mobile User Objective System (MUOS) and Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) capability by replacing the existing Have Quick II and DAMA SATCOM radios with new radios capable of communicating via the existing and additional military waveforms as a combined integration program on AWACS.  <b>FY 2022 Plans:</b> Rapid Prototyping and development contract award. <b>FY 2023 Plans:</b> Continue Rapid Prototyping and development. <b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Funding decreased to align with reduced E-3 development activities due to planned transition to an E-3 replacement platform.		3.993	48.615	7.384
<b>Title:</b> E-3 AWACS Fifth to Fourth (5th to 4th) <b>Description:</b> E-3 AWACS Fifth to Fourth (5th to 4th): 5th to 4th provides the capability for E-3G AWACS to receive 5th generation data via Link 16 and other data feeds as necessary. This capability includes the security domain required to integrate the 5th generation data into Mission Computing Software and generate an integrated operational air picture. 5th to 4th addresses gaps and inaccuracies in the Common Tactical Picture (CTP) and improves Situational Awareness (SA) and BMC2 decision making by shortening the kill chain for warfighters in a contested environment.  <b>FY 2022 Plans:</b> N/A <b>FY 2023 Plans:</b> N/A		3.857	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>		108.779	167.014	239.658

**UNCLASSIFIED**

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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 Line Item E00300: <i>E-3</i>	135.740	162.960	165.973	-	165.973	220.273	240.339	245.259	-	Continuing	Continuing
• APAF 05 0207417F: <i>Airborne Warning and Control System (AWACS)</i>	42.276	30.327	-	-	-	-	-	-	-	0.000	72.603
• APAF 06 Line Item 000999: <i>Initial Spares/Repair Parts</i>	7.018	21.274	-	-	-	-	-	-	-	Continuing	Continuing

**Remarks**

Other Program Funding  
Appn: APAF, BA: 05, PE/ Line Item: Line Item E00700, Title: E-3 AMTI Replacement, FY2025: \$809.044M, FY2026: \$1319.106M, FY2027: \$1512.659M, Cost to Complete: Continuing

**E. Acquisition Strategy**

The modernization of the AWACS weapon system consists of multiple capability upgrades that are developed and fielded on competitive and sole source contracts. Full and open competition is explored for all new efforts where market research indicates opportunities exist.

Air Force Program Executive Officer (PEO) for PEO Digital is the Milestone Decision Authority (MDA) for AWACS Programs, with the exception of the E-3 Block 40/45 Upgrade. The E-3 Block 40/45 Upgrade MDA is the Secretary of the Air Force, with authority delegated to the Assistant Secretary of the Air Force (Acquisition) [SAF/AQ]. Of note, E-3 Block 40/45 Upgrade has completed development activities, so it has no 3600 funding and thus not otherwise referenced in this document. The Decision Authority for current AWACS Middle Tier of Acquisition (MTA) programs is delegated to the E-3 Material Leaders. Air Force Life Cycle Management Center (AFLCMC) is the Contracting Authority for the AWACS portfolio and provides Contracts, Legal, and Comptroller Support

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207417F / Airborne Warning and Control System (AWACS)	<b>Project (Number/Name)</b> 67411L / Airborne Warning & Control System (AWACS)
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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON)	SS/FPIF	L3 : Arlington, TX	-	1.601	Jan 2021	-		-		-		-	Continuing	Continuing	-
E-3 Electronic Protection (EP)	SS/CPFF	GTRI : Atlanta, GA	-	1.670	Nov 2020	-		-		-		-	Continuing	Continuing	-
E-3 Electronic Protection (EP) Rapid Prototyping Alpha Phase 1A	C/FFP	AFLCMC/ACI OTA to SOSSEC : Salem, NH	-	8.997	Feb 2021	-		-		-		-	Continuing	Continuing	-
E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR)	SS/ Various	BAH & Various : Washington, DC	-	7.037	Jan 2021	21.124	Jul 2022	1.435	Jan 2023	-		1.435	Continuing	Continuing	-
E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) GTRI Study	SS/CPFF	Georgia Tech Research Ins : Atlanta, GA	-	-		3.106	Feb 2022	-		-		-	Continuing	Continuing	-
E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) Follow on Studies and Analysis	SS/CPFF	Boeing : Oklahoma City, OK	-	9.950		7.838	Apr 2022	-		-		-	Continuing	Continuing	-
E-3 Combat Identification (CID) Diminishing Manufacturing Sources (DMS) Prototype Development	MIPR	DMEA : McClellan, CA	-	-		2.176	Mar 2022	-		-		-	Continuing	Continuing	-
E-3 Combat Identification (CID) Diminishing Manufacturing Sources (DMS) Software and Sub-System Level Development	SS/CPFF	Raytheon : Fort Wayne, IN	-	-		12.519	Jan 2022	-		-		-	Continuing	Continuing	-

**UNCLASSIFIED**

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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-3 Combat Identification (CID) Diminishing Manufacturing Sources (SMS) Software Development	Various	76 SWES : Tinker AFB, OK	-	-		0.279	Jan 2022	-		-		-	Continuing	Continuing	-
E-3 Communication Network Upgrade (CNU)	Various	Space & Naval Warfare Sys : San Diego, CA	-	0.725	Jan 2021	3.500	Jan 2022	-		-		-	Continuing	Continuing	-
E-3 Communication Network Upgrade (CNU) GTRI	Various	Georgia Tech Research Ins : Atlanta, GA	-	22.195	Feb 2021	39.664	May 2022	1.250	Feb 2023	-		1.250	Continuing	Continuing	-
ACIP Rapid Prototyping Gov't Furnished Equipment (GFE)	MIPR	TBD : TBD	-	-		1.563	Apr 2022	-		-		-	Continuing	Continuing	-
E-3 Communication Network Upgrade (CNU) Boeing	Various	Boeing : Oklahoma City, OK	-	2.526	Feb 2021	0.000	Feb 2022	-		-		-	Continuing	Continuing	-
E-3 Communication Network Upgrade (CNU) Software Development	Various	76th SWES : Tinker AFB, OK	-	3.841	Jan 2021	2.250	Jan 2022	0.750	Jan 2023	-		0.750	Continuing	Continuing	-
Mode 5 Acceleration	MIPR	DMEA : McClellan, CA	-	3.158	Feb 2021	-		-		-		-	Continuing	Continuing	-
ACIP Rapid Prototyping Alpha Phase	TBD	TBD : TBD	-	-		43.049	Apr 2022	-		-		-	Continuing	Continuing	-
Fifth to Fourth (5th to 4th) Risk Reduction	Various	Various : Various	-	2.095	Feb 2021	-		-		-		-	Continuing	Continuing	-
Fifth to Fourth (5th to 4th) Rapid Prototyping GFE	MIPR	Various : TBD	-	0.893	Nov 2021	-		-		-		-	Continuing	Continuing	-
Fifth to Fourth (5th to 4th) Rapid Prototyping Alpha Phase	C/TBD	TBD : TBD	-	2.370	Dec 2021	-		-		-		-	Continuing	Continuing	-
E-3 Replacement	TBD	TBD : TBD	-	-		-		222.890	Apr 2023	-		222.890	Continuing	Continuing	-
<b>Subtotal</b>			-	67.058		137.068		226.325		-		226.325	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207417F / Airborne Warning and Control System (AWACS)	<b>Project (Number/Name)</b> 67411L / Airborne Warning & Control System (AWACS)
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-3 Training, Support & Infrastructure (TSI) Systems AITS II	C/Various	Boeing : Oklahoma City, OK	-	4.709	Jan 2021	3.481	Apr 2022	0.636	Jan 2023	-		0.636	Continuing	Continuing	-
E-3 Training, Support & Infrastructure (TSI) Radar AITS II	C/Various	Northrop Grumman : Linthicum, MD	-	5.421	Jan 2021	3.169	Apr 2022	0.777	Jan 2023	-		0.777	Continuing	Continuing	-
<b>Subtotal</b>			-	10.130		6.650		1.413		-		1.413	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(U) Program Management Administration (PMA)	Various	AWACS Program Office : Hanscom AFB, MA	-	31.591	Jan 2021	23.296	Jan 2022	11.920	Jan 2023	-		11.920	Continuing	Continuing	-
<b>Subtotal</b>			-	31.591		23.296		11.920		-		11.920	Continuing	Continuing	N/A

			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	108.779	167.014	239.658	-	239.658	Continuing	Continuing	N/A

**Remarks**  
 The E-3 replacement effort is expected to involve significant amounts of hardware purchases early in development which create a larger than normal amount of termination and liability costs that must be funded.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2023 Air Force</b>		<b>Date: April 2022</b>
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207417F / Airborne Warning and Control System (AWACS)	<b>Project (Number/Name)</b> 67411L / Airborne Warning & Control System (AWACS)

FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
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

<b>AWACS PE 0207417F</b>	
TSI	[Redacted]
C2ISR	[Redacted]
CID DMS Alpha Phase	[Redacted]
CNU Beta Decision (August 2021)	[Redacted]
CNU Development	[Redacted]
ACIP Risk Reduction	[Redacted]
ACIP Prototyping	[Redacted]
Fifth to Fourth (5th to 4th) Risk Reduction	[Redacted]
Fifth to Fourth (5th to 4th) Rapid Prototyping	[Redacted]
E-3 Replacement Prototyping	[Redacted]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207417F / Airborne Warning and Control System (AWACS)	<b>Project (Number/Name)</b> 67411L / Airborne Warning & Control System (AWACS)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AWACS PE 0207417F</b>				
TSI	1	2021	4	2023
C2ISR	1	2021	4	2023
CID DMS Alpha Phase	1	2021	2	2022
CNU Beta Decision (August 2021)	4	2021	4	2021
CNU Development	1	2021	4	2024
ACIP Risk Reduction	1	2021	2	2022
ACIP Prototyping	3	2022	3	2025
Fifth to Fourth (5th to 4th) Risk Reduction	1	2021	1	2022
Fifth to Fourth (5th to 4th) Rapid Prototyping	1	2022	4	2022
E-3 Replacement Prototyping	3	2023	4	2025