E-2D ADVANCED HAWKEYE AIRCRAFT (E-2D AHE)

December 2021 Selected Acquisition Report (SAR)

DECEMBER 31, 2021
DEPARTMENT OF THE NAVY

Contents

Common Acronyms and Abbreviations
Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Manager

Name: CAPT Peter Arrobio

Date Assigned: August 6, 2020

Address: Program Executive Officer Tactical Aircraft Programs Building 2272, Suite 455, Naval Air Systems Command, 47123 Buse Road, Unit IPT, Patuxent River, MD 20670-1547

Phone: 301-757-7363

Email: peter.a.arrobio.mil@us.navy.mil

Mission and Description

The E-2D Advanced Hawkeye Aircraft (E-2D AHE) is a carrier based all weather, multi-mission aircraft. The E-2D AHE mission is to provide premier airborne Battle Management Command and Control and Surveillance as part of the Naval and Joint Integrated Air and Missile Defense architecture including the Naval Integrated Fire Control-Counter Air capability. The centerpiece of the E-2D AHE is the APY-9 radar system. This radar system is designed specifically to provide significantly enhanced surveillance detection and tracking capability against advanced threat aircraft and cruise missile systems in the overland, littoral, and open ocean environments. Maritime surveillance is also maintained in the open ocean scenarios. The E-2D AHE provides early warning of hostile threats and provides the force with the right data to prosecute any engagement. Key capabilities along with the radar include the Identification Friend or Foe system and Electronic Support Measures for surveillance and combat identification, advanced mission processing capability to integrate all on-board sensor data and off-board information into a coherent tactical picture, and communications, data link, and sensor netting systems to share information across the battlespace. These capabilities allow the E-2D AHE to provide a significant contribution to execution of other mission areas such as Strike, Combat Search and Rescue, and Homeland Defense. As a part of the E-2D AHE radar modernization effort, the Navy also invested in integrating a full glass cockpit and full Communication Navigation Surveillance/Air Traffic Management capability. The glass cockpit will also provide the capability for the pilot or co-pilot to perform tactical mission functions. Additionally, aerial refueling capability is being installed to increase the duration of the maximum time on station.

Executive Summary

Program Highlights Since Last Report

The initial Program of Record (POR) on contract consists of 75 aircraft with nine operational squadrons. The July 1, 2019 POR Resources and Requirements Review Board (R3B) validated the requirement to procure 86 aircraft to support nine carrier wings or 92 aircraft to support 10 carrier wings. The final U.S. Navy (USN) aircraft under the FY 2014-FY 2018 E-2D AHE Multi-Year Procurement (MYP) contract was delivered on December 10, 2021 and was the 51st E-2D delivered for the USN. The second MYP (MYP-II) contract, which supports procurement of 24 aircraft during FY 2019-FY 2023, was awarded on April 10, 2019. The Government of Japan procured four E-2D AHE aircraft as a modification to the E-2D AHE MYP-I contract using the Variation in Quantity (VIQ) clause. Japan also funded an additional nine MYP aircraft across FY 2019 and FY 2022, setting the baseline quantity for the MYP-II contract to 33 aircraft. Enacted FY 2020/FY2021 appropriations added three more aircraft, which where procured utilizing the VIQ clause in the USN MYP-II contract; this clause also offered an opportunity for France to procure E-2D AHE aircraft. Currently, France has funded the contract for three E-2D AHE aircraft; this action was awarded in December 2021. VAW-124 was certified "safe for flight" in January 2022 and is the 6th of the 9 operational Hawkeye squadrons to fly the E-2D AHE.

The E-2D AHE program continues to incorporate capabilities into the Fleet via hardware and software modifications, referred to as Delta System/Software Configurations (DSSCs), that are released on two to three year intervals.

E-2D AHE DSSC Build 2 (DSSC-2), which incorporated prior test deficiency corrections and added Dual Transmission Satellite Communication capability, was introduced to the Fleet via new production aircraft, starting with the 26th aircraft (AA-26) and via retrofit to prior fielded aircraft. VAW-126 deployed with DSSC-2 in 3Q FY 2018. The program also fielded a modified version of DSSC-2 (DSSC-2.1) that incorporated Mode 5 Identification Friend or Foe interrogation capability to align with USN efforts to accelerate this to the Fleet.

DSSC-3, which incorporated Automatic Identification System, Embedded National Tactical Receiver, Accelerated Mid-Term Interoperability Improvement Project and improvements to the target tracking functionality completed Follow-On Operational Test and Evaluation (FOT&E) in October 2019. Production Cut-In (PCI) was accomplished via production aircraft AA-41. Aerial Refueling (AR) is an adjunct capability that also fielded with DSSC-3. PCI for AR was accomplished with production aircraft AA-46. All operational squadrons have completed their transition to DSSC-3. VAW-126 became the first AR operational squadron in December 2020.

Over half of the E-2D AHE aircraft have been modified with AR capability. AR Developmental Testing and Operational Testing events were completed for KC-130, KC-135, KC-10, Omega KC-707 and F/A-18F aircraft. Testing with F/A-18, KC-130 and other aircraft will continue as opportunities arise for aircraft envelope expansion.

The DSSC-3.1 update (which includes the Multifunctional Information Distribution System Joint Tactical Radio System (MIDS JTRS) Combined Multi-Net 4 terminal, Hybrid Beyond Line of Sight (H-BLOS) satellite communications, and Naval Integrated Fire Control updates) has been installed at all operational sites. DSSC-4 development and test is underway. Key capabilities included in DSSC-4 include Counter Electronic Attack, Integrated BLOS, baseline Tactical Targeting Network Technology (TTNT) and Sensor Netting updates to the From The Sea (FTS) mission known as FTS Improvements (FTS-I). Remaining production aircraft will deliver in the DSSC-4 configuration.

The initial sustainment concept for the E-2D AHE unique parts was Interim Contractor Support through the Material Support Date (MSD) (1Q FY 2016). From the MSD period through Navy Support Date (4Q FY 2028), conventional and performance-based Original Equipment Manufacturer (OEM) repair

contracts and OEM onsite Technical Representatives will sustain the E-2D AHE. Since E-2D AHE-unique systems are designated as Core Capabilities, organic repair capabilities will be established in accordance with United States Code Title 10 requirements. These 77 new organic capabilities are actively being established to complete in FY 2028. The airframe's Fleet Support Team (FST) is at Fleet Readiness Center (FRC) Southwest, North Island, California; the engines FST is located in Naval Air Station (NAS) Jacksonville and the propellers and power FST is at FRC East Cherry Point, North Carolina. With new Automated Logistics Environment (ALE) capabilities there will be increased reliability and maintainability engineering data analytics to support optimized user feedback and inform continual improvements for maintenance and future designs.

Significant Accomplishments: In FY 2019, the E-2D AHE Sustainment Program Baseline was developed to track and advise root causes of the Sustainment Infrastructure. In FY 2021, the Reliability Control Board Sprint Project was created to accelerate cost reductions from reliability projects that affected material costs. Today the program is migrating from Production into Sustainment, which will drive changes in infrastructure support requirements in the Government.

Mission Capability (MC) and Fully Mission Capable (FMC) rates have increased and met the FY 2021 targets for MC. The Program is making successful strides in strategies to obtain and sustain new goals in MC/FMC in the near term.

Significant Issues: There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	**Significant Development Description**
June 2003	The E-2D AHE program received Milestone B approval to enter the System Development and Demonstration acquisition phase.
October 2005	The Critical Design Review was completed one month prior to the original Milestone B schedule objective.
July 2007	A Pilot Production contract for three aircraft was awarded.
August 2007	First Test Flight occurred on the original Milestone B schedule objective.
September 2007	The CDD was approved by the JROC. Seven Key Performance Parameters (KPPs) were added post Milestone B.
December 2007	First Mission System (radar) Flight Test.
March 2009	The Cost Analysis Improvement Group (CAIG) conducted an ICE and reported a Significant cost breach to APUC and PAUC.
April 2009	USD(AT&L) issued an Acquisition Decision Memorandum (ADM) directing the program perform a review similar to the one for a Critical Nunn-McCurdy breach even though a Critical breach had not occurred.
May 2009	As part of the Nunn-McCurdy review, the CAIG updated their ICE and reported the program was in a Critical Nunn-McCurdy breach. The Overarching Integrated Product Team Lead directed the Navy to consider an accelerated production ramp to reduce cost to mitigate the critical breach. A Critical Nunn-McCurdy review out-brief/Milestone C DAB was held and a revised APB Deviation Report was submitted announcing a Significant breach to APUC and PAUC based on the CAIG estimate using a revised production ramp, which accelerated aircraft procurement by moving six aircraft to within the FYDP and ending production one year earlier.

June 2009	The Navy declared a Critical Nunn-McCurdy breach based on the updated CAIG ICE. USD(AT&L) issued an ADM acknowledging the breach and stated all required actions to resolve it were completed. The ADM rescinded the Milestone B and documented completion of a root cause analysis. Upon reviewing the program and business case analysis, USD(AT&L) made the certifications required by 10 U.S.C. 2366b(d) to allow the program to re-enter the acquisition process at Milestone C. The Navy was directed to use the accelerated production ramp briefed at the Defense Acquisition Board (DAB). Finally, the ADM approved the E-2D AHE program to enter into the Production and Deployment Phase, specifically to procure Low Rate Initial Procurement (LRIP) Lots 1 and 2. A contract was awarded for LRIP Lot 1 and Advanced Procurement for LRIP Lot 2. A quarterly exception SAR was submitted reporting the Nunn-McCurdy unit cost breach.
July 2009	The program received a new APB that rebaselined the program to a Production Baseline, replaced the original APB approved in June 2003, and reset the APUC and PAUC values.
January 2010	A contract was awarded for LRIP Lot 2.
July 2010	A contract for one LRIP Lot 2 Congressionally added aircraft was awarded.
March 2011	A DAB approved procurement of LRIP Lots 3 and 4 as well as Advanced Procurement for FRP Lot 1.
July 2011	A contract was awarded for LRIP Lot 3.
January 2012	A contract was awarded for LRIP Lot 4.
February 2012	The PEO for Tactical Aircraft Programs (PEOT) certified the E-2D AHE to enter Initial Operational Test and Evaluation (IOT&E).
October 2012	IOT&E was completed with the Commander, Operational Test and Evaluation Forces assessing the E-2D AHE as operationally effective; operationally suitable for shore based operations (based on limited shipboard testing).
March 2013	A USD(AT&L) ADM granted authority to commence Full Rate Production (FRP) procurement of 55 aircraft during FY 2013-FY2021.
April 2013	USD (AT&L) approved the FRP APB.
July 2013	A contract was awarded for the first FRP lot of five aircraft.
September 2013	The Aerial Refueling Engineering, Manufacturing and Design (EMD) contract was awarded.
October 2013	Test events for the verification of Correction of Deficiencies period for IOT&E were completed.
May 2014	A USD(AT&L) ADM granted authority to proceed with a MYP during FY 2014 through FY 2018. It also designated E-2D AHE as an ACAT IC MDAP and delegated Milestone Decision Authority (MDA) to the Secretary of the Navy.
June 2014	A MYP contract for 25 aircraft in FRP Lots 2-6 during FY2014-2018 was awarded saving the Navy approximately $369M.
July 2014	Delta System/Software Configuration Build 1 (DSSC-1), which is the Initial Operating Capability (IOC) hardware/software configuration, was released to the Fleet following a recommendation by the Commander, Operational Test Forces during FOT&E (OT-D1) execution.
October 2014	IOC was achieved on the APB schedule objective.

March 2015	The first Fleet Squadron Deployment commenced with DSSC-1 incorporated.
May 2015	DSSC-1 OT-D1 was completed.
August 2015	The Japan Ministry of Defense signed a Letter of Offer and Acceptance (LOA) for one E-2D AHE.
October 2015	The MSD was achieved.
November 2015	The Japan E-2D AHE aircraft was placed on contract as a modification to the E-2D AHE MYP contract utilizing a variation in quantity clause. The first E-2D AHE Fleet Squadron Deployment completed.
July 2016	The Government of Japan procured a second E-2D AHE as a contract modification to the E-2D AHE MYP contract utilizing a variation in quantity clause.
October 2016	DSSC-2 completed FOT&E (OT-D2).
December 2016	The first E-2D AHE flight in the Aerial Refueling configuration was made.
March 2017	VAW-125 deployed with DSSC-2.
August 2018	FY 2019 National Defense Authorization Act (NDAA) included language for authorizing the second E-2D AHE five year MYP of 24 aircraft.
February 2019	The United States Government took possession of the first Japan E-2D AHE aircraft.
March 2019	DSSC-3 and AR FOT&E commenced. The first Japan E-2D AHE was delivered to the Japan Air Self Defense Force.
April 2019	The E-2D AHE MYP-II contract was awarded.
July 2019	US Navy held a R3B and affirmed the requirement for an inventory of 86 E-2Ds in order to support nine Carrier Air Wings.
September 2019	The modification to the E-2D AHE MYP-II contract added the procurement of nine Japan aircraft.
October 2019	DSSC-3 and AR FOT&E (OT-D3) completed.
February 2020	The Program revised the APB. Change 4 was approved in February 2020.
July 2020	First DSSC-3 AR capable aircraft was delivered to a deployable fleet squadron (VAW-126).
December 2021	Final MYP-I aircraft delivered.
December 2021	Three (3) French E-2D AHE Aircraft awarded on MYP-II contract.

Schedule

Schedule Events

Schedule Events					
Events	**Development APB Objective**	**Current APB Development Objective/Threshold**		**Current Estimate/Actual**	**Deviation**
Milestone B	May 2003	Jun 2003	Jun 2003	Jun 2003	Milestone B
Critical Design Review	Nov 2005	Oct 2005	Oct 2005	Oct 2005	Critical Design Review
First Flight	Aug 2007	Aug 2007	Aug 2007	Aug 2007	First Flight
Milestone C	Mar 2009	May 2009	May 2009	May 2009	Milestone C
Full Rate Production	Dec 2012	Mar 2013	Mar 2013	Mar 2013	Full Rate Production
IOC	Apr 2011	Oct 2014	Oct 2014	Oct 2014	Oct 2014

Significant Schedule Risks

Significant Schedule Risks
Current Estimate (December 2021)
1. **RISK:** If the Government Software Support Activity (SSA) facilities at Patuxent River and Pt. Mugu are not certified for all classification levels after DSSC-5 THEN the capacity of organic support performed may be limited resulting in increased costs to contract work to NGC. **DRIVER:** The Government SSA facilities have some physical space that can operate at required classification levels for DSSC-5 and beyond, but most of the space cannot currently. If not addressed, this will limit the amount of work/people due to facility size/staff therefore increasing life cycle sustainment cost for Mission Computer Display (MCD) software. **MITIGATION STEPS:** 1. Generate the Government SSA demand signal candidates to support the PMA's requirements for DSSC-6 and beyond. (Q3 FY 2022) 2. Complete an Initial Facilities Footprint Assessment to support tasking and schedule to meet demand signal. (Q3 FY2022) 3. Create a project plan to have all facilities at PAX and Pt. Mugu operating at the appropriate classification level, along with connectivity to the prime's integrated development environment (if required), in time to support the schedule and scope of DSSC-6 and beyond tasking outlined in the Demand Signal. (Q3 FY 2022) 4. PMA Level II's allocate funding/kits for the Project Plan for the current and future years. (Q4 FY 2022) 5. Staff the key positions identified in the Project Plan. (Q3 FY 2023) 6. Complete the required physical security modification at PAX and Pt. Mugu facilities to allow work at the designated classification level. (Q4 FY 2023) 7. Acquire/install work stations, servers, and secure comms equipment for each facility/lab at the appropriate classification level consistent with the Project Plan. (Q2 FY 2024) 8. Acquire/install integrated development environment and associated integration and test tools at the appropriate classification level consistent with the Project Plan. (Q1 FY 2024) 9. Acquire/install of the integration and test tools (e.g. AST/ASG, 3+1 bench, ESM Simulator) has occurred at each facility/lab at the appropriate classification level consistent with the Project Plan. (Q1 FY 2024) 10. Generate Interconnection Agreements between labs, create an RMF package, and acquire the ATO for each facility/lab consistent with the Project Plan. (Q3 FY 2023).

Performance

Performance Characteristics	

Development APB Objective	Current APB Development Objective/Threshold		Demonstrated Performance (include Date of Demonstration)	Current Estimate/Actual	Deviation
Radar Ao					
=>0.98	=>0.98	=>0.85	0.62	>=0.88	None
Survivability - Safe Egress In Crash					
The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertiaload factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertiaload factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	(T=O) The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied at the equipment center of gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E- D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied atthe equipment centerof gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40g crash inertial load.	The E-2D AHE shall retain all equipment mounted inside the fuselage in its installed position in inhabited spaces for crash landing inertia load factors applied atthe equipment centerof gravity of 20g forward, parallel and downward in the cockpit along a single axis. The E-2D AHE escape hatches and doors shall allow egress subsequent to a 40gcrash inertial load.	None
Manpower (Full Operational Capability - FY 2020)					
Aircrew Os =< 323 Maintenance Os/Es =<34/1303 Support Os/Es =<12/683 Training Os/Es =<76/60	Aircrew Os =< 323 Maintenance Os/Es =< 34/1303 Support Os/Es =<12/683 Training Os/Es =< 76/60	(T=O) Aircrew Os =< 323 Maintenance Os/Es =<34/1303 Support Os/Es =<12/683 Training Os/Es =<76/60	Aircrew Os =< 323 Maintenance Os/Es =< 34/1303 Support Os/Es =<12/683 Training Os/Es =<76/60	Aircrew Os =<323 Maintenance Os/Es =<34/1303 Support Os/Es = <12/683Training Os/Es =<76/60	None

Performance Characteristics					Deviation
Development APB Objective	**Current APB Development Objective/Threshold**		**Demonstrated Performance (include Date of Demonstration)**	**Current Estimate/Actual**	
Unrefueled Time On Station					
=>2.0 hours at a station distance of 200nm	=>2.0 hours at a station distance of 200nm	(T=O) =>2.0 hours at a station distance of 200nm	2.10 hours at a stationdistance of 200nm	2.10 hours at a stationdistance of 200nm	None
Flat Turn Service Ceiling					
=>25,000 feet above MSL at mission profile	=>25,000 feet above MSL at mission profile	(T=O) =>25,000 feet above MSL atmission profile	25,600 feet above MSL at mission profile	25,600 feet above MSL at mission profile	None
Level Flight Airspeed					
=>300 knots true airspeed below 18,000 feet MSL	=>300 knots true airspeed below 18,000 feet MSL	(T=O) =>300 knots true airspeed below 18,000 feet MSL	303.5 knots true airspeed below 18,000 feet MSL	303.5 knots true airspeed below 18,000 feet MSL	None
Network-Centric Military Operations (Network Readiness)					
The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR mandated GIG	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR mandated GIG KIPs identified	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net- Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR mandated GIG	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: (1) The DISR mandated GIG IT standards and profiles identified in the TV-1, (2) DISR mandated GIG KIPs identified in the KIP declaration table declaration table (3) NCOW RM Enterprise	None

Performance Characteristics					
Development APB Objective	**Current APB Development Objective/Threshold**		**Demonstrated Performance (include Date of Demonstration)**	**Current Estimate/Actual**	**Deviation**
KIPs identified in the KIP declaration table, (3) NCOW RM Enterprise Services (4) IA requirements including availability, integrity, authentication, confidentiality, non-repudiation, and issuance of, an ATO by the DAA (5) Operationally effective information exchanges; and MC-performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	in the KIP declaration table, (3)NCOW RM Enterprise Services (4) IA requirements including availability, integrity, authentication, confidentiality, non-repudiation, and issuance of an ATO by the DAA (5) Operationally effective information exchanges; and MC-performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	mandated GIG KIPs identified in the KIP declaration table (3)NCOW RM Enterprise Services (4) IA requirements including availability, integrity, authentication, confidentiality, non-repudiation, and issuance of an IATO by the DAA (5) Operationally effective information exchanges and MC-performance and IA attributes, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	KIPs identified in the KIP declaration table (3) NCOW RM Enterprise Services (4) IA requirements including availability integrity, authentication, confidentiality, nonrepudiation, and issuance of an IATO by the DAA (5) Operationally effective information exchanges; and MC-performance and IA attributes, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	Services (4) IA requirements including availability integrity, authentication, confidentiality, nonrepudiation, and issuance of an IATO by the DAA (5) Operationally effective information exchanges; and MC-performance and IA attributes, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views	

Performance Notes:
Classified Performance information is provided in the classified annex to this submission.

Requirements Source: CDD, approved by JROC, dated March 3, 2009

Acronyms and Abbreviations
Ao - Operational Availability

ATO - Authorization to Operate
DAA - Designated Approval Authority
DISR - DoD Information Technology Standards and Profile Registry
DSSC-2 - Delta System/Software Configuration Build 2
Es - Enlisted
g - gravity
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Authorization to Operate
IT - Information Technology
KIPs - Key Intelligence Profiles
MC - Mission Critical
MSL - Mean Sea Level
NCOW RM - Net-Centric Operations and Warfare Reference Model
nm - nautical mile
Os - Officers
TV-1 - Technical View 1

Acquisition Budget Estimate

Total Acquisition Cost

Category	Base Year	Development APB 2009 Objective (BY$)	APB Change 4 (Production) 02/10/2020 Objective (BY$)	APB Change 4 (Production) 02/10/2020 Threshold (BY$)	Budget Estimate PB 2023 BY$	Budget Estimate PB 2023 TY$	Deviation
RDT&E	2009	4140.0	6707.0	7377.7	7507.3	8311.6	Yes
Procurement	2009	13281.9	14832.9	16316.2	14669.3	17569.5	
MILCON	2009	46.7	88.7	97.6	90.0	103.9	
Acq. O&M	2009	0.0	0.0	0.0	0.0	0.0	
Total		17468.6	21628.6	23791.5	22266.6	25985.1	
PAUC	2009	232.915	251.495	276.645	258.914	302.152	
APUC	2009	189.741	183.122	201.434	181.102	216.908	

Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	5	5
Procurement	81	81

Budget Notes:

- RDT&E extended budget from 2027 to 2030 to address obsolescence and modernization efforts including DSSC-6 Hawkeye Cockpit Technical Refresh (HECTR) and Theater Combat Identification (TCID) (+$704.4M)
- RDT&E increase in funds for E-2D Communications as a Service (CaaS) (+60.5M)
- RDT&E increase in funds for Aviation Live Virtual Construct (LVC) Live Aircraft Integration Phase 1 (+93.0M)
- RDT&E adjustments for inflation, rate changes (+$47.4M)
- RDT&E Congressional Adds for radar development (+$46.0M)
- RDT&E Congressional Reductions (-$105.6M)
- RDT&E various reductions for SBIR, Cancelled Accounts and Total Force Management (-$14.0M)
- Procurement acceleration of procurement buy profile from FY 2028 to FY 2021 (-$45.0M)
- Procurement MYP-II VIQ impact from FY 2021 aircraft quantity increase (-$54.0M)
- Procurement FY 2021 adjustment to align budget with MYP-II negotiated contract for Advanced Procurement (-$10.0M)
- Procurement revised Production Line Shutdown estimate to include Contractor SEPM previously captured within aircraft pricing (+$56.5M)
- Procurement revised Prior Year estimate to align with actual cost (+18.1M)

History of Acquisition Cost and Unit Cost since December 2001

- February 2020 APB update increased the program of record quantity from 75 to 86 aircraft.

Quantity Notes:

The requirement has been validated at 86 aircraft to support nine fleet squadrons. Through the FY 2021 PB FYDP, the program is funded for 77 aircraft.

Cost Deviations Explanations:
The RDT&E Budget Estimate for PB 2023 exceeds the current APB by $129.6M (BY 2009$) due to extending the RDT&E budget from 2025 to 2030 to address obsolescence and modernization efforts including DSSC-6, HECTR, and TCID.

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Procurement Cost (February 2020)	
1.	The Current Baseline Estimate aligns with PB 2021.
Original Baseline Estimate (June 2003)	
1.	After review of the programmatic and technical baseline at Milestone B, the MDA directed E-2D AHE to use the Navy POE of February 2015 as the funding requirement. The estimates were within six percent of each other.
2.	The Navy POE and the CAIG estimates both showed FYDP funding shortfalls in FY 2005 - FY 2009 for SD&D and procurement that the Navy needed to address prior to proceeding with the program.
Revised Original Estimate (July 2009)	
1.	After review of the programmatic and technical baseline at Milestone C, the MDA directed E-2D AHE to use the CAIG ICE as the funding requirement. The Navy SCP was seven percent lower than the CAIG ICE.
2.	Both the CAIG ICE and the Navy SCP showed a shortfall in FY 2010–FY 2015 resources for procurement in the FYDP
Admin Baseline Estimate (March 2022)	
1.	The current Procurement Cost aligns with PB 2023.

Unit Cost

Current Baseline Compared with Current Estimate

Category ($M)	Current APB (Feb 2020)	Current Estimate (Dec 2021 SAR)	% Change	NMC Breach
PAUC				
Cost	21628.6	22266.6	-	-
Quantity	86	86	-	-
Unit Cost	251.495	258.914	2.9%	No
APUC				
Cost	14832.9	14669.3	-	-
Quantity	81	81	-	-
Unit Cost	183.122	181.102	-1.1%	No

Original Baseline Compared with Current Estimate

Category ($M)	Revised Original UCR Baseline (Jul 2009 APB)	Current Estimate (Dec 2021 SAR)	% Change	NMC Breach
PAUC				
Cost	17468.6	22266.6	-	-
Quantity	75	86	-	-
Unit Cost	232.915	258.914	11.2%	No
APUC				
Cost	13281.9	14669.3	-	-
Quantity	70	81	-	-
Unit Cost	189.741	181.102	-4.6%	No

Contracts

Contract Data ($TYM)		
Contract Number	N00019-13-C-9999	
Effort Number	N/A	
Modification Number	P00088	
Award Date	6/30/2014	
Definitization Date	6/30/2014	
Order Number	N/A	
CAGE Code/CAGE Legal Name	70974/Northrop Grumman Systems Corporation	
Contract Title	E-2D AHE Multi-Year Procurement (FRP Lots 2-6)	
Contract Address	2000 West NASA Boulevard, Melbourne, FL 32904	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
113.72	5199.23	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contract's EAC 5199.23	PM's EAC 5199.23	
Initial Quantity	Current Quantity	Delivered Quantity
30	30	30
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes:

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this contract being awarded on May 17, 2013 as an advanced acquisition contract for the FRP Lot 2 valued at $113.7M. On July 31, 2013 an additional $9.3M contract modification was awarded. This contract was definitized on June 30, 2014 and transitioned to Fixed Price Incentive Firm Target Contract for the procurement of 25 aircraft valued at $3906.7M. The Government of Japan is procuring four E-2D AHE aircraft to include nonrecurring engineering for a Japan-unique Wet Outer Wing Panel totaling $963.3M under four FMS Letters of Offer and Acceptance all of which have been added to this contract to date. Other modifications to the contract which have increased the value by $189.6M include the addition of the Advanced Radar Processor, Fiber Optic Improvement, Aerial Refueling capabilities, Engineering Change Orders, Economic Order Quantity Funding, and Nose Gear Catapult System Engineering Change Proposal. Other contract modifications, valued at $16.7M, include Japan E-2D AHE Difference Training and Japan Non-Recurring Engineering. In March 2020, a contract modification was awarded to fund CLIN 0415 in the amount of $208,157.00. A contract modification was awarded August 4, 2020 to address a cost overrun related to CLIN 0115 (Japan Non-Recurring Engineering (NRE) efforts) and incorporate CLINs 0121, 0122, 0123 and 0124 for Japan Air Self Defense Force (JASDF) NRE incentives. In addition, the Period of Performance (PoP) for CLIN 0115 was extended to June 30, 2024 and CLIN 0405 was extended to September 30, 2020; Exhibits K, L and M were also updated with this modification. In September 2020, a contract modification was awarded to update Attachments (7) (Statement of Work (SOW)) and Attachment (13) (Scheduled Government Furnished Property (GFP)), update CDRL D001, extend the PoP for CLIN 0405 as well as de-obligate funds under CLIN 0001. Additionally, clauses 52.251-1 and 252.251-7000 were added and clauses 52.204-25 and 52.244-6 were updated to the latest versions. A contract modification was executed in February 2021 to update the following documents: Exhibit L (CDRLs L003 and L050), Exhibits J, K-M, Supplement 2 (Electronic Data Submission Instructions), Exhibit Q (Spares and Support Equipment under CLIN 0117), and Attachment (19) (JASDF GFP List). This modification also extended the PoP for CLIN 0116 as well as added DFARS

clauses 252.225-7043 and 252.225-7976. In May 2021, a contract modification was executed to update Attachment (7) (SOW), Attachment (13) (Scheduled GFP) and Exhibits A-D, Supplement (1) (Electronic Data Submission Instructions). This modification also reduces fee on CLIN 0409 to $18,337.00 in accordance with H-12 Level of Effort Engineering Investigations NAVAIR Clause 5252.211-9503 Level of Effort (Cost Reimbursement). Additionally, the PoP under CLIN 0413 has been extended from December 30, 2020 to December 31, 2021. A contract modification was awarded October 2021 to add $17,615,418.00 in incremental funding to CLIN 0115 (Japan NRE) and create SLINs 011540 through 011545. In December 2021, a contract modification was executed to update Attachment (7) (SOW) and extend the PoP for CLINs 0302 and 0401. Additionally, this modification reconciled the $318,000.00 consideration balance.

Cost and schedule variances are not reported for this contract. An EVM waiver was granted by the Deputy Assistant Secretary of the Navy (Acquisition & Procurement) (DASN AP) on May 12, 2014 as delegated by the Assistant Secretary of the Navy (Research, Development, & Acquisition). This waiver was approved because the E-2D AHE airframe is being produced in a mature FRP environment with a prime contractor displaying a long-term history of consistently meeting delivery schedules at or below contract targets.

Cost Variance:
Cost reporting is not required on this FPIF contract.

Schedule Variance:
Schedule reporting is not required on this FPIF contract.

Contract Data ($TYM)		
Contract Number	N00019-14-C-0036	
Effort Number	N/A	
Modification Number	P00039	
Award Date	07/07/2014	
Definitization Date	07/07/2014	
Order Number	N/A	
CAGE Code/CAGE Legal Name	70974/Northrop Grumman Systems Corporation	
Contract Title	Full Scale Fatigue Test	
Contract Address	2000 West NASA Boulevard, Melbourne, FL 32904	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
52.4	84.76	
Initial Ceiling Price	Current Ceiling Price	
N/A	84.76	
Contract's EAC 63.95	PM's EAC 79.81	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
84.28	58.12	57.11
BCWS	Cost Variance	Schedule Variance
58.2	1.1 (1.8%)	-0.0 (-0.1%)

Contract Notes:
The difference between the initial value of $52.44M and the current value of $84.76 is the addition of Wing Center Section (WCS) Fatigue Testing, exercising a repair option of 370 days, exercising CLINs 0001 and 0202, which provide incremental funding to complete Full Scale Testing, and extending the PoP on CLINs 0001, 0004, and 0303 to May 31, 2022. The contract price decreased by $623,889.36 due to anticipated WCS repairs not being required. In addition, a contract modification was awarded in February 2020 in the amount of $2,000,000.00 for incremental funding for CLIN 0001. A contract modification was awarded in May 2020 to change clause FAR 52.222-2, as well as update NAVAIR clause 5252.232-9524, Allotment of Funds. Additionally, this modification incrementally funded CLIN 0001 in the amount of $3,493,000, CLIN 0002 was de-obligated by $141,646.56, CLIN 0102 was de-obligated by $320,410.32 and CLIN 0302 was de-obligated $187,699.66. A contract modification was awarded in June 2020 to de-obligate $1,122,194.88 from CLIN 0202 as well as update NAVAIR clause 5252.232-9524. A contract modification was executed in August 2020, which added $200,000 of additional funding to CLIN 0001 and de-obligated a total of $96,033.70 from SLINs 000201 ($15,782.88) and 000501 ($80,250.82). In addition, this modification included an update to clause 5252.232-9524. In September 2020, another contract modification was awarded to incrementally fund CLIN 0001 in the amount of $392,128.91 and update clause 5252.232-9524. To date, a total of $1,867,985.12 has been de-obligated from this contract, which was used to offset funding for CLIN 0001. In October 2020, a contract modification was executed to incrementally fund CLIN 0001 in the amount of $2,500,000.00, update clause 5252.232-9524, and update the Defense Management Contract Agency (DCMA) address. A contract modification was executed in January 2021 to provide incremental funding to CLIN 0001 in the amount of $2,200,000.00 and updated clause 5252.232.9524. In March 2021, a contract modification was executed to provide incremental funding to CLIN 0001 in the amount of $3,258,463.16 and updated clause 5252.232-9524. Two contract modifications were awarded in June 2021. The first extended the PoP of CLIN 0001 and 0004 to June 30, 2023. The second provided incremental funding to CLIN 0001 in the amount of $2,200,899.67 as well as updated clause 5252.232-9524. In September 2021, a contract modification was executed to provide

incremental funding to CLIN 0001 in the amount of $250,000.00. A contract modification was awarded in November 2021, which provided funding to CLIN 0001 in the amount of $3,407,000.00.

Cost Variance:
The favorable net change in the cumulative cost variance is due to the aircraft repairs costing less than anticipated.

Schedule Variance:
The unfavorable net change in the cumulative schedule variance is due to additional aircraft repairs than baselined.

Contract Data ($TYM)		
Contract Number	N00019-15-C-0091	
Effort Number	N/A	
Modification Number	P00038	
Award Date	04/06/2015	
Definitization Date	04/06/2015	
Order Number	N/A	
CAGE Code/CAGE Legal Name	70974/Northrop Grumman Systems Corporation	
Contract Title	Post IOC Capabilities (PIOC)	
Contract Address	2000 West NASA Boulevard, Melbourne, FL 32904	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
146.69	178.78	
Initial Ceiling Price	Current Ceiling Price	
N/A	178.78	
Contract's EAC 170.51	PM's EAC 186.27	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
166.93	160.74	160.22
BCWS	Cost Variance	Schedule Variance
162.07	0.28 (0.2%)	-1.4 (-0.9%)

Contract Notes:
The difference between the initial contract price of $146.69M and the current contract price of $178.78M is due to increased contract scope to include cybersecurity requirements, incorporation of S-Band frequencies, and extension of the contract end date. The contract price decreased by $181,524.00 due to work scope reductions, which caused the value of CLIN 0001, Post Initial Operational Capability Added Capabilities, and CLIN 0003, S-Band Frequencies, to be reduced. A contract modification extending the contract's end date to the PM's Estimated Completion Date was required due to delays in MIDS JTRS Operational Testing which is executed by a different program and is impacting our schedule; this modification extended the PoP from December 2019 to November 2020. Another contract modification was executed in February 2020 that added incremental funding to CLIN 0003 in the amount of $11,948,431.00 for continued contract support. A contract modification to add incremental funding to CLIN 0001 in the amount of $459,664.00 for continued contract support was awarded in March 2020. A contract modification was awarded in May 2020 to incorporate a directed change in accordance with FAR 52.243-2 "Changes - Cost Reimbursement." Additionally, the Statement of Work (SOW), Contract Data Requirement List (CDRL) and GFP list were updated to increase Delta System Software Configuration (DSSC)-4 Developmental Test (DT) aircraft. A contract modification was awarded June 2020 to extend the PoP to August 30, 2021 as well as line of accounting correction causing funding removal from SLIN 000319 and added to SLIN 00320 with corrected line of accounting. A contract modification to add incremental funding to CLIN 0003 in the amount of $529,741.87 for continued contract support was awarded on June 29, 2020. A contract modification was executed in August 2020 to update Attachment (3) (Cost and Software Data Reporting (CSDR) Plans). In September 2020, a contract modification was awarded to add incremental funding to CLIN 0003 in the amount of $4,283,259.00 and update Attachment (7) (GFP List). A contract modification to add incremental funding to CLIN 0001 in the amount of $325,000.00 for continued contract support was awarded in December 2020. Additionally this modification updated the DCMA office name, added CLIN 0005 to support the DD250, and provided delivery addresses for Support Equipment that has been developed under this contract. In February 2021

a contract modification was executed to provide incremental funding in the amount of $406,736.00 to CLIN 0003 for continued contract support. A contract modification was awarded in April 2021 to provide incremental funding in the amount of $6,215,949.00 for continued contract support. Additionally in April 2021 a contract modification was awarded to increase CLIN 0001 by $2,302,001.00, CLIN 0003 by $7,227,493.00 and extend the PoP to June 30, 2022. Incremental funding in the amount of $102,393.00 has also been added to CLIN 0001 on this modification. A contract modification was executed in June 2021 to provide incremental funding in the amount of $395,822.00 to CLIN 0001 and $5,294,050.00 to CLIN 0003. In October 2021, a contract modification was executed to incrementally fund CLIN 0001 by $1,601,084.00 and CLIN 0003 by $1,044,432.00. A contract modification was awarded in November 2021 to provide incremental funding to CLIN 0001 in the amount of $200,000.00 and to CLIN 0003 in the amount of $800,000.00. Additionally, the Technical Data CLIN 0002 was extended to June 30, 2022 with this modification.

Cost Variance:
The favorable net change in the cumulative cost variance is due to BLOS and TTNT Northrop Grumman Technical Services (NGTS) kit installation.

Schedule Variance:
The unfavorable net change in the cumulative schedule variance is due to late Government Furnished Equipment (GFE) and delays in receipt of BLOS and TTNT components.

Contract Data ($TYM)		
Contract Number	N00019-18-C-1037	
Effort Number	N/A	
Modification Number	P00034	
Award Date	02/22/2018	
Definitization Date	04/10/2019	
Order Number	N/A	
CAGE Code/CAGE Legal Name	70974/Northrop Grumman Systems Corporation	
Contract Title	E-2D AHE Multi-Year Procurement (FRP Lots 7-11)	
Contract Address	2000 West NASA Boulevard, Melbourne, FL 32904	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
99.8	5867.72	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contract's EAC 5867.72	PM's EAC 5867.72	
Initial Quantity	Current Quantity	Delivered Quantity
39	39	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes:
The original contract price was for the Full Rate Production (FRP) Lot 7 Advance Procurement in the amount of $99.77M, Firm Fixed Price (FFP). The contract was definitized on April 10, 2019 as the Multi-Year Procurement for FRP Lots 7-11 and transitioned to a Fixed Price Incentive Firm Target contract for the procurement of 24 aircraft valued at $3352.10M. On April 29, 2019, Non-Recurring Engineering (NRE) for Product Support and Software Support Activity was added increasing the total contract cost to $3390.87M. On August 29, 2019, NRE and Obsolescence Management for FRP Lots 7-11 was added increasing the total contract cost to $3459.76M. On September 26, 2019, the procurement of nine Japan FMS aircraft was added increasing the total contract cost to $4763.68M. The Deputy Assistant Secretary of the Navy DASN AP granted a one-time deviation to remove Earned Value Management (EVM) requirements from this contract. In March 2020 a contract modification was executed that added funding for FRP Lot 7 Engine Support in the amount of $382,165.00. Two other contract modifications were awarded April 2020; the first modification included exercising the Variation in Quantity (VIQ) clause for two aircraft, long lead funding and added Non-Recurring Engineering for the VIQ aircraft which increased the contract cost by $389,452,781.00. The second modification in April 2020 increased funding by $950,000.00 (Contract Line Item Number (CLIN) 0024) to support Japan SSA. Previously reported funding values were incorrect for this contract. These have since been corrected and are reflected in this submission. The estimated prices on this contract do not include unexercised options. Two modifications were awarded June 2020; the first to incorporate BLOS, TTNT, Navigation Warfare (NAVWAR), and Electronic Support Measure (ESM) efforts to multiple CLINs, increasing funding by $14,109,762.00. The second modification was to incorporate PCI Capability support via Cost Plus Fixed Fee (CPFF) CLIN. Funding on this modification increased by $4,648,295.00. In September 2020, a contract modification was awarded to which incorporated Japan Contractor Technical Services, creating CLIN 0025 and funding SLIN 002501. Attachments (4) (SOW) and (5) (Data and Computer Software Rights Assertions) were updated as well as Exhibits (A) and (J). Clauses 52.251-1, 52.204-25, and 252.251-7000 were also added with this modification. In November 2020, a contract modification was executed to incorporate the

Engine Cutout Circuitry effort into CLINs 0020, 0022, 0101, 0103, 0201, 0301, 0401, 0112, and 0212. Attachment (3) (Security Class Guide DD254), Attachment (4) (SOW), Attachment (6) (Performance Based Payment (PBP) Schedule- Aircraft/Recurring) and Attachment (16) (PBP Schedule NRE) were all updated within this modification. Contract Data Requirements List (CDRL) A019 (Engineering Drawings) and CDRL C001 (DoD Information Assurance Certification and Accreditation Process (DIACAP) and Risk Management Framework (RMF)) were also updated via this modification. In addition, this modification also added DFARS Clause 252.225-7976 and revised Clause TXT-G-01, PBP, to include CLINs 0112 and 0212. Clause TXT-H-04, VIQ Pricing Adjustments, was updated to reflect the new unit prices of CLINs 0312 and 0412. Funding on this modification increased by $1,711,561.00. Two contract modifications were executed in December 2020. The first was to establish CLINs 0240 and 0241 for France E-2D Advanced Hawkeye (AHE) initial planning; funding was added in the amount of $2,843,834.00 to support these activities. This modification also updated Attachment (4) (SOW), added Exhibit (F) (CDRL for CLIN 0241) and added Supplement (4) (Electronic Data Submission Instructions). The second modification updated CLIN 0025 (Japan Contractor Technical Services) to increase the value and extend the PoP to April 30, 2021. Funding on this modification increased by $2,537,504.00. A contract modification was executed in February 2021 to update Attachment (108) (Japan Performance Based Payment Schedule for CLIN 0020). In March 2021 a contract modification was executed to realign funding in the amount of $3,006,160.00 from SLIN 002008 to SLIN 002012. Two contract modifications were executed in April 2021. The first modification supported execution of VIQ aircraft via CLIN 0312 (FY22), reduced CLINs 0301 and 0020 per the VIQ clause (H-04) due to the aforementioned VIQ aircraft, provided full funding for CLIN 0201, long lead funding for CLIN 0301, EOQ funding for CLINs 0301 and 0401, and exercised and fully funded CLINs 0203, 0204, 0207, 0208, 0210 and 0211. The second modification established CLIN 0440 for the procurement of long lead items for France E-2D aircraft FAA1-FAA3, as well as added Attachments (201) France (Long Lead Parts List for FAA1-FAA3), (202) France (France E-2D Configuration List), and (206) France (PBP Schedule for CLIN 0440). A contract modification was awarded May 2021 to add Inventory Analysis CLINs 0215, 0315, and 0415. Additionally the following have been updated: Attachment (4) (SOW), Exhibit B (CDRL B00A), and Exhibit A-E, Supplement (1) (Electronic Data Submission Instructions). In June 2021, a contract modification was awarded to exercise Option CLIN 0213 and add funding in the amount of $4,648,160.00 for continued contract support. Additionally, this modification updated the PoP for CLINs 0113 and 0114 to February 14, 2023. The PoP for CLINs 0213 and 0214 was also updated to February 14, 2024. CLINs 0313 and 0314 PoP was updated to February 14, 2025. Finally, the PoP for CLINs 0413 and 0414 was updated to February 14, 2026. Two contract modifications were awarded in July 2021. The first updated Attachment (4) (SOW), Attachment (8) (GFP List), Exhibit A (CDRL A00X), Exhibit J (CDRL J00X), and added CDRL A019 TDP OSW. The second modification added CLIN 0442 to the contract for France E-2D Non-Recurring Engineering (NRE) Risk Reduction. In August 2021, two contraction modifications were executed. The first modification incorporated CLINs 0X16, 0X17, 0X18 and 0X19, and added Attachment (17) (GFE Over & Above (OA) SOW). The second modification added the Japan E-2D SSA in the amount of $887,936.00 by creating CLIN 0026, revised NAVAIR Clause 5252.211-9503 (Level of Effort (Cost Reimbursement)), and updated Attachment (4) (SOW). A contract modification was awarded in October 2021 which exercised Option CLIN 0105 (NRE Engine Support, Lot 8) and added $876,328.00 for continued support. In addition, this modification updated the delivery schedule in Section F and updated the following Attachments: Attachment (4) (SOW), Attachment (6) (USN Recurring PBP Schedule) and Attachment (16) (USN NRE PBP Schedule). A contract modification was awarded in November 2021 which updated Attachment (102) (Japan E-2D Configuration List) and Attachment (109) (PBP Schedule for CLIN 0022 (Japan NRE)). In December 2021, two contract modifications were executed. The first modification updated the PoP for CLINs 0005 and 0006 to October 31, 2022; the second updated Attachment (2) (Critical Safety Item (CSI) List), Attachment (4) (SOW), Supplement (1) and Supplement (2) and revised the title of CLIN 0440 from FAA1-FAA3 Long Lead Parts to France E-2D AHE Aircraft. This title change was necessary to support the procurement of three (3) France E-2D aircraft (FAA1, FAA2 and FAA3). CLIN 0401 was also modified to account for the reduction in prices of USN aircraft reflected in TXT-H-04, Aircraft VIQ Contract Price Adjustments. In addition, the PoP was updated to April 30, 2022 for CLINs 0240 and 0241 in this second contract modification.

Cost and schedule variances are not reported for this contract. DASN (AP) granted a one-time deviation to remove EVM requirements from this contract.

Cost Variance:
Cost reporting is not required on this FPIF contract.

Schedule Variance:
Schedule reporting is not required on this FPIF contract.

Contract Data ($TYM)		
Contract Number	N00019-18-F-2334	
Effort Number	N/A	
Modification Number	P00013	
Award Date	05/02/2018	
Definitization Date	05/02/2018	
Order Number	N/A	
CAGE Code/CAGE Legal Name	70974/Northrop Grumman Systems Corporation	
Contract Title	Aerial Refueling Retrofit Kits	
Contract Address	2000 West NASA Boulevard, Melbourne, FL 32904	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
74.69	74.69	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contract's EAC 74.69	PM's EAC 74.69	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes:
An administrative contract modification was awarded in November 2020 to update the SOW as well as DCMA address. In December 2020, a contract modification was executed to add NAVAIR clause 5252.232-9522 (Transportation Account Codes) and reduce CLIN 0204 by $2,384.00. A contract modification was awarded in June 2021 to extend the PoP of CLIN 0003 from May 31, 2021 to December 31, 2021.

Cost Variance:
Cost Variance reporting is not required as this is a FFP contract.

Schedule Variance:
Schedule Variance reporting is not required as this is a FFP contract.

Contract Data ($TYM)		
Contract Number	N00019-18-C-1066	
Effort Number	N/A	
Modification Number	P00013	
Award Date	06/25/2018	
Definitization Date	06/25/2018	
Order Number	N/A	
CAGE Code/CAGE Legal Name	70974/Northrop Grumman Systems Corporation	
Contract Title	Electronic Support Measures (ESM) Upgrade	
Contract Address	2000 West NASA Boulevard, Melbourne, FL 32904	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
64.7	113.6	
Initial Ceiling Price	Current Ceiling Price	
64.7	113.6	
Contract's EAC 97.24	PM's EAC 119.26	
Initial Quantity	Current Quantity	Delivered Quantity
2	2	0
BAC	BCWP	ACWP
96.27	54.83	N/A
BCWS	Cost Variance	Schedule Variance
52.51	N/A	N/A

Contract Notes:
To date, the contract price has increased by $5.57M due to an Equitable Adjustment. In addition, a contract modification was issued in October 2019 to incrementally fund CLINs 0001, 0002, and 0003. In February 2020, a contract modification was awarded to incrementally fund CLINs 0001, 0002 and 0003. In April 2020 a contract modification was awarded to delete and replace Exhibit A (CDRL) and Attachment (4) DD 254 contract security classification. In May 2020, a contract modification was awarded to add to incremental funds to CLINs 0001, 0002 and 0003 was awarded. A contract modification to delete and replace Attachment (1) ESM Advanced Digital Radar Processor (ADRP) Upgrade SOW was awarded June 2020. A contract modification was awarded in January 2021 to add incremental funding to CLINs 0001, 0002 and 0003. Exhibit A (CDRLs) was also updated with this modification. Due to OPNAV realignment, the program office issued a stop work in January 2021 in order to restructure activities to meet Government needs. The Program Office has since canceled the stop work and authorized LMCO to resume work on this contract. A contract modification with a revised SOW is in work and is forecasted to award in FY 2022.

Cost Variance:
This program is reporting actuals as of May 2021. Prior to May 2021, they were in a blackout beginning January 2021. Additionally, the scope that the Program Office is currently working towards is not comparable to the scope from December 2020. The program and the contract are being restructured and the SOW is being revised.

Schedule Variance:
This program is reporting actuals as of May 2021. Prior to May 2021, they were in a blackout beginning January 2021. Additionally, the scope that the Program Office is currently working towards is not comparable to the scope from December 2020. The program and the contract are being restructured and the SOW is being revised.

Technologies and Systems Engineering

Significant Technical Risks

Significant Technical Risks	
Current Estimate (December 2021)	
1.	**Risk:** If the rotodome adhesive limitations are exceeded, then an operational F/A-18 tanking envelope will reduce rotodome life. **Driver**: E-2D rotodome materials requirements were for temperatures up to 180F. **Mitigation:** 1. Raise IFC thermal limits to 270F IOT allow exploration of the tanking environment behind the F/A-18 with increased probability of irreparable damage to the rotodome. **(COMPLETED)** 2. Increase post-flight inspection criteria to minimize likelihood of catastrophic failure. **(COMPLETED)** 3. Gather and analyze test data to establish an operational tanking envelope. **(COMPLETED)** 4. Conduct coupon testing to address cyclic thermal fatigue of the rotodome and its effects on material life. Analyze data and adjust periodic maintenance plan. (Publish Mx update Q3 FY 2022). **(COMPLETED)** 5. Increase the ARS pod hose length with a 5' extension and execute flight test. Awaiting FY 2022 funds. **(COMPLETED)** 6. Expand the F/A-18 tanking envelope to meet operational requirements. (start Q2 FY 2023)

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	5	5	5	100.00%
Production	48	48	73	65.75%
Total Program Quantity Delivered	53	53	78	67.95%

Expended and Appropriated (TY $M)

Total Acquisition Cost: $25985.10
Expended to Date: $16890.59
Percent Expended: 65.0%
Total Funding Years: 28
Years Appropriated: 22
Percent Years Appropriated: 78.6%
Appropriated to Date: $21315.57
Percent Appropriated: 82.0%

The above data is current as of April 18, 2022.

Deliveries and Expenditures Notes:
To date, all aircraft for MYP-I Lots 2-6 have been delivered.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	6/13/2003	4/3/2011
Approved Quantity	22	15
Reference	Milestone B ADM	LRIP Lots 3 and 4 ADM
Start Year	2009	2009
End Year	2012	2012

Rationale if Current Total LRIP Quantity exceeds 10% of the total Procurement quantities:
The Current Total LRIP Quantity is more than 10% of the total production quantity due to 15 aircraft being the minimum tomaintain the industrial base and ensure successful transition to FRP.

The 15 planned LRIP aircraft (including one FY 2011 supplemental) represent 20% of the total quantity. The reduction in LRIP quantities is due to the production quantity ramp changes.

Operating and Support Costs

Total Program O&S Cost Compared with Baseline

	Current APB Objective (BY$2009)	Current APB Threshold (BY$2009)	Current Estimate (BY$2009)	Current Estimate (TY$)	Deviation
Total O&S ($Millions)	19700.2	21670.2	19132.4	31882.0	No

O&S Cost Breakdown

Allocate O&S estimate by each weapon system (or system variants) acquired by the program) into the CAPE Cost Categories. Add a fresh column for each variant/system.

Category (BY$ Million)	E-2D AHE Average Annual Cost Per Aircraft	E-2C Average Annual Cost Per Aircraft
Unit-Level Manpower	2.820	2.688
Unit Operations	0.418	0.416
Maintenance	4.232	3.524
Sustaining Support	1.022	0.236
Continued System Improvements	2.246	1.041
Other	1.013	1.005
Total O&S	11.752	8.910

Cost Estimate Source: Program Office Estimate 3/10/2022

O&S Cost Notes:
Inflation Indices Utilized: FY 2022 OSD rates

Due to the historical inclusion of Indirect costs as part of the E-2D APB, these costs have been addressed as "Other" O&S cost within the above chart to ensure equivalency when comparing SAR 2021 to previously documented O&S cost totals.

Flight Hours per Aircraft per Month: 40 (assumes no change in the Concept of Operations associated with the Aerial Refueling effort)
Number of Aircraft per Carrier Airborne Early Warning Squadron (AEW): 5
Total Number of Primary Aircraft Authorization (PAA): 62

- Nine 5 aircraft Carrier AEW squadrons
- One 12 aircraft Fleet Replacement Squadron (FRS)
- 2 aircraft at Air Test and Evaluation Squadron One (VX-1)*
- 3 aircraft at Naval Aviation Warfighting Development Center (NAWDC)*

Aircraft Flight Hours Life Limit: 9,600
Total Operating Flight Hours: 660,440
Total Operating Aircraft Years: 1,628
Assumes 6% of maximum total aircraft inventory will be attrited over the lifecycle.

The Quantity to Sustain only includes fleet-owned assets, thereby excluding two developmental aircraft, which are Naval Air Systems Command (NAVAIR)-owned assets.

The Total Operating Aircraft Years is calculated by summing the actual or estimated annual Primary Aircraft Inventory from FY 2011 through FY 2051.

*PAA beyond Primary Mission Aircraft Authorization (PMAA) and FRS aircraft are typically not included in NAVAIR SCE&A O&S cost estimates; however, PAA for VX-1 and Naval Aviation Warfighting Development Center (NAWDC) have been included in the E-2D AHE O&S cost estimate.

Base Year costs are calculated as Constant Price values.

a. Disposal/Demilitarization Cost Estimate and Source of Estimate: $19.7M Total (BY 2009), POE 03/10/2022
b. Sustainment Strategy:
The E-2D AHE initial sustainment concept for E-2D AHE unique parts was Interim Contractor Support through MSD with common systems supported organically. For the period of MSD (1st Quarter FY 2016) through Navy Support Date (3rd Quarter FY 2025), Naval Supply Systems Command Weapons System Support will support E-2D AHE unique systems through conventional and/or performance-based repair contracts with Original Equipment Manufacturers. With few exceptions, E-2D AHE unique systems have been designated as Core Capabilities and the program is pursuing the establishment of organic repair capabilities to comply with the U.S. Code Title 10 requirements. As these organic repair capabilities are established, business case analyses will be conducted to determine the best value sustainment strategies, whether it is fully organic or public-private partnership.
c. For Each Acquired System or System Variant:
    i. Quantity to Sustain: 84
    ii. First Operational Fiscal Year: FY 2011
    iii. Final Operational Fiscal Year: FY 2051
    iv. Unit Expected Service Life: 25 Years
d. Antecedent System(s) O&S Costs:
    i. The antecedent program is the E-2C. Annual costs for the antecedent program are based upon a three-year average of Naval Visibility and Management of Operating and Support Costs (VAMOSC) data from FY 2010 – FY 2012, the last three years prior to the start of the E-2C transition to E-2D AHE. Costs for the three years are summed and then divided by the sum of aircraft count for the three years. The average number of aircraft in the three-year VAMOSC dataset is 58.33. Since Naval VAMOSC does not capture Indirect Support costs, the E-2C Indirect Support cost is calculated by multiplying the E-2C Unit-Level Manpower by the ratio of E-2D AHE Indirect Support to E-2D AHE Unit-Level Manpower. For comparison purposes, the Total O&S Cost is the product of the Antecedent's Average Annual cost per Unit and the Operating Aircraft Years of the E-2D AHE.