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Department of Defense OFFICE OF PREPUBLICATION AND SECURITY REVIEW

# APACHE-64E NEW BUILD (AH-64E NEW BUILD)

#### December 2021 Selected Acquisition Report (SAR)



December 31, 2021 Department of The Army

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#### **Executive Summary**

**Program Highlights Since Last Report (Congress)**: Requirements are stable and funding is currently adequate to meet cost, schedule, and performance objectives. United States Government (USG) completed the special investigation into Boeing quality due to Critical Safety Item (CSI) material escapements. Three hundred seventy-nine (379) manufacturing plan changes implemented and 43 of 43 discreet "Return to Green" actions completed.

Strap Pack Product Improvement (SPPI): First Article Test (FAT) is complete for SPPI and a full fielding Airworthiness Release (AWR) has been received. A fielding decision was completed with PEO Aviation on June 17, 2021 to proceed with contract action for full SPPI on the production line. Materiel cut-in is targeted for January 2022.

The Remanufacture and New Build aircraft are procured using the same contracts, built on the same production line, and delivered in the same configuration with the same capabilities.

| Date     | Description  |
|----------|--|
| Jun 2014 | Definitized and awarded Boeing Company Full Rate Production (FRP) contract for Lots<br>3 and 4. This contract supports production of ten AH-64E Apache New Build<br>helicopters. This production activity supported completion of fielding the second and<br>third units equipped, as well as augmentation of the training fleet.  |
| Aug 2014 | AH-64E Capability Version 4 Follow-on Operational Test & Evaluation successfully<br>concluded on time at Eglin Air Force Base, Florida. This capability was included in<br>production Lot 5 with the first aircraft being DD250'd in February 2016.  |
| Sep 2014 | Awarded seven additional New Build aircraft as an undefinitized contract action.   |
| Nov 2014 | The First Unit Equipped (FUE), 1-229 Attack Reconnaissance Battalion (ARB),<br>successfully completed the first operational combat deployment of the AH-64E.   |
| Dec 2014 | Apache PM initiated the required processes for necessary approvals to enter a multi-<br>year contract to support production from FY 2017 to FY 2021. The Army Acquisition<br>Executive (AAE) signed the justification and approval.  |
| Dec 2014 | Apache PM delivered ten AH-64E New Build Attack Helicopters of the 56 Army<br>Acquisition Objective (AAO).   |
| Aug 2015 | Completed Manned/Unmanned Teaming Expanded capabilities competition and<br>awarded contract. Fire Control Radar Maritime Mode Testing occurred from August<br>through September 2015 at Joint Base Little Creek, Virginia.   |
| Sep 2015 | Apache PM completed fielding to the 2-17 Cavalry (3-101 Attack Reconnaissance<br>Battalion (ARB)), the Army's 4th Unit Equipped with the AH-64E Apaches. Apache PM<br>assisted and managed transfer of 20 AH-64D aircraft from Germany and Forces<br>Command to a new AH-64 unit, the 1-25 ARB in Fort Wainwright, Alaska. Apache PM<br>identified and provided a materiel solution to support Apache AH-64D and AH-64E<br>helicopters for first time stationing in an arctic environment. |

#### History of Significant Developments Since Program Initiation:

| Feb 2016 | The first production Lot 5 AH-64E rolled off the Apache line at the Boeing facility in Mesa, Arizona. This aircraft marked the first production AH-64E with Version 4 capability   |
|----------|--|
| Apr 2016 | Definitized the FRP Contract for Lot 3 - Lot 4 New Build aircraft, Quantity of seven aircraft.   |
| Jan 2017 | Apache PM completed fielding of six AH-64E aircraft to Fort Rucker, Alabama.   |
| Mar 2017 | Awarded AH-64E Apache Multi-Year Contract for Lot 7 through Lot 11 for a total of 244<br>Remanufactured aircraft, providing options to procure additional Remanufacture and<br>New Build aircraft each year.   |
| May 2017 | Completed fielding to the 1-227th ARB, Fort Hood, Texas.   |
| May 2017 | Army memo increased the AH-64E Apache helicopter AAO by 77 aircraft from 690 to<br>767 aircraft. The Authorized Procurement Objective (APO) remains at 634<br>Remanufacture aircraft and 56 New Build aircraft.  |
| Jun 2017 | Apache PM fielded nine AH-64E aircraft to Fort Rucker, Alabama.  |
| Aug 2017 | Contract modification of \$202.2M awarded on the AH-64E Apache Multi-Year contract for the purchase of AH-64E New Build aircraft.  |
| Dec 2017 | Completed fielding of 24 AH-64E Apache aircraft to Fort Carson, Colorado.  |
| Jan 2018 | Begin fielding to 1-6 Cavalry Regiment, Fort Riley, Kansas.  |
| Mar 2018 | Army Contracting Command (ACC) sent a letter to Boeing rejecting the acceptance of all U.S. AH-64E aircraft until the redesigned Strap Pack is fielded and additional criteria are met.  |
| May 2018 | Army adjusted the AAO from 767 to 812 and the APO to 791 for the AH-64E Apache Helicopter.   |
| Jun 2018 | Began fielding the redesigned strap pack to 1-149 Texas National Guard (NG) in Houston, Texas.   |
| Aug 2018 | Since Boeing has met the conditions to restart, PM Apache resumed inductions and acceptance of AH-64E Apache Remanufacture and New Build aircraft. New Build aircraft resumed deliveries in April 2020.  |
| Aug 2018 | <ul> <li>PM Apache, in coordination with ACC, executed a modification to fully fund 31 FY</li> <li>2018 AH-64E Apache New Build aircraft and funds FY 2019 Advance Procurement for</li> <li>12 FY 2019 AH-64E Apache New Build aircraft. Total contract obligated is</li> <li>\$507,099,999.78. The FY 2019 Defense Appropriations Act includes funding for five</li> <li>additional New Build aircraft in FY 2019.</li> </ul> |
| Sep 2018 | Teams completed retrofit of the redesigned strap pack to all Category 1 Severe<br>Coastal units (Texas NG, Missouri NG, Hawaii NG, Joint Base Lewis-McCord, Korea,<br>and Hunter Army Airfield, Georgia). Retrofit shifted to Category 2 Deployed/Deploying<br>units.  |
| Oct 2018 | FY 2019 Defense Appropriations Act increased funding adding six additional helicopters for a total of 18 AH- 64E Apaches for FY 2019.  |
| Nov 2018 | The Army stopped fielding of the redesigned strap pack and began legacy strap pack collar retrofit starting with severe coastal units. All severe coastal units will have fail safe collars installed by April 2019 and the entire Army fleet by July 2019. The Army will continue holding the contractor accountable to address quality issues.   |
| May 2019 | Failsafe collar fielding is complete.  |
| Jun 2019 | The Follow-On Operational Test and Evaluation 2 (FOT&E 2) was completed on June 14, 2019. The event included operations at Ft. Hood, TX and Eglin Air Force Base   |

| Sec. 1   | (AFB) and concluded with an adversarial assessment at Redstone Arsenal. The final test report for the event was received on September 11, 2019.   |
|----------|---|
| Aug 2019 | FY 2019 National Defense Appropriations Act plus up of six additional aircraft was<br>awarded.  |
| Sep 2019 | FOT&E 2 report was received from Army Test and Evaluation Command (ATEC). The report determined that the version 6 AH-64E is more effective, more suitable, and is incrementally more survivable than the version 4 AH-64E. The report from ATEC supports a conditional materiel release and recommends version 6 AH-64E capabilities be cut-in the AH-64E production line. |
| Sep 2020 | The first V6 AH-64E aircraft was DD250'd in Mesa, AZ at the Boeing facility.  |
| Oct 2020 | The United States Government stopped accepting aircraft from Boeing due to quality issues identified in October 2020.   |
| Dec 2020 | After Boeing met the conditions-based criteria, the USG resumed accepting aircraft in December 2020. The conditions-based criteria ensures production processes meet standards for safety and quality and the potential for future quality escapes.   |
| Feb 2021 | The first V6 LCT retrofit was completed in the field at Hunter Army Airfield, GA.   |
| Mar 2021 | V6 FUE is completed at 1-229th Joint Based Lewis McChord, WA with 24 AH-64E aircraft.   |
| Jun 2021 | Full Fielding Decision Brief Completed on the SPPI Program. Production line cut-in scheduled January 2022.  |
| Aug 2021 | Second Unit Equipped is completed at 3-17th Hunter Army Airflield, GA with 24 AH-<br>64E aircraft.  |
| Nov 2021 | Third Unit Equipped delivery began to 4-2 AB in Korea.  |

# Schedule

## Schedule Events

| Event Title (or<br>Header) | Current<br>Objective | Current<br>Threshold | Current<br>Estimate/Actual Date | Deviation? |
|----------------------------|----------------------|----------------------|---------------------------------|------------|
| Milestone C                | Jul-2010             | Jan-2011             | Sep-2010                        |            |
| IOT&E                      | Mar-2012             | Sep-2012             | Mar-2012                        |            |
| FRP                        | Jul-2012             | Mar-2013             | Mar-2013                        |            |
| First Unit Equipped        | Nov-2012             | May-2013             | May-2013                        |            |
| IOC                        | May-2013             | Nov-2013             | Nov-2013                        |            |

# Significant Schedule Risks

| Event       | Date      | Description  |
|-------------|-----------|--|
| Milestone B | 7/30/2006 | 1. Insufficient fidelity of Lot 6 functionality requirements 2. Reliability Key<br>Performance Parameters (KPP) 3. Performance KPP 4. Network Ready KPP  |
| Milestone C | Mar-2012  | 1. Architecture Shortfalls – Refined hardware and software requirements coupled with Commercial-Off-The- Shelf (COTS) obsolescence necessitate compute / electronic tech refresh to meet Lot 4 - Lot 6 functionality. 2. Low Rate Initial Production (LRIP) – Boeing has not manufactured an Apache Block III (AB3) aircraft and is using a subcontractor for premodification for the first time. Unforeseen production variables (new subcontractors and components) could cause schedule and delivery delays. 3. Net Ready – AB3 PM is dependent on performance of the Joint Tactical Radio System (JTRS) program to achieve Net Ready – AB3 PM is dependent on performance of the Joint Tactical Radio System (JTRS) program to achieve Net Ready – AB3 PM is dependent on performance of the JTRS is the preferred solution to meet the Link 16 requirement at Lot 4 and Wideband Networking Waveform / Soldier Radio Waveform at Lot 6. Further delays to the JTRS program could prohibit AB3 from meeting the Net Ready KPP. 4. Reliability – Limited flight test hours on AB3 aircraft at Limited User Test and Initial Operational Test and Evaluation does not allow for a traditional reliability demonstration in which the test unit is in the final configuration and tested for a statistically significant number of flight hours. This could result in an inability to demonstrate acceptable mission reliability to support the FRP Decision. |
| FRP         | Jul-2012  | 1. Architecture Shortfalls – Refined hardware and software requirements coupled with Commercial-Off-The- Shelf (COTS) obsolescence necessitate computer / electronic tech refresh to meet Lot 4 - Lot 6 functionality. 2. Main Transmission – Financial issues at Northstar Aerostar (Apache Block III (AB3) main transmission supplier) created a temporary trough in transmission supply, resulting in up to seven aircraft without transmissions. The AB3 prime contractor took measures to sustain AB3 production and revitalize Northstar's supply base. The PM closely monitored this plan and full recovery established in December 2012 with no critical fielding impacts expected. The PM will continue to closely monitor this plan. 3. Net Ready – The AB3 Link 16 solution changed from a Joint Tactical Radio System (JTRS) Joint Program Office (JPO) Government Furnished Equipment radio to a Non-Developmental Item (NDI) radio. The AB3 PM is solely managing Link 16 for Lots 4 - Lot 5. A planned NDI competition for a Lot 6 Link 16 solution will be managed by the JTRS JPO. If the competitive procurement does not meet the Lot 6 timeline there will be a Link 16 capability fielding gap.   |
| Current     | Nov-2012  | 1. The AH-64E program meets all Key Performance Parameters and remains on schedule and affordable. The program currently remains on schedule to deliver IAW the HQDA fielding plan. USG completed the special investigation into Boeing quality due to Critical Safety Item material escapements. Three hundred seventy-nine (379) manufacturing plan changes implemented and 43 of 43 discreet "Return to Green" actions completed. Recommend certify the December 2021 SAR with risk until award of MY2 which will constitute the formal legal agreement between Boeing and USG on the entirety of the Army's CSI program requirement. Award is estimated 3QFY22.  |

# Performance

|   |   | Performance A   | ttributes  |                             |      |
|---|---|---|------------|-----------------------------|------|
| Current Objective   | Current<br>Threshold  | Current<br>Estimate   | Deviation? | Demonstrated<br>Performance | Date |
| Attribute Title:  | Net Ready   |   |            | KPP                         |      |
| Fully support<br>execution of all<br>operational<br>activities. | Fully support<br>execution of<br>joint critical<br>operational<br>activities. | Fully support<br>execution of<br>joint critical<br>operational<br>activities. |            | Met Threshold               |      |
| Attribute Title:  | Performance<br>OGE Hover (  | 6000' PA, 95 F<br>lbs/payload)  |            | KPP                         |      |
| 4,100   | 3,400   | 3,400   |            | Met Threshold               |      |
| Attribute Title:  | Mission Reliability MTBF(M)<br>hrs. Lot 1                                     |   |            | KPP                         |      |
| 22  | 15.3  | 24.5  |            | Met Objective               |      |
| Attribute Title:  | Mission Reliability MTBF(M)<br>hrs. Lot 4                                     |   |            | KPP                         |      |
| 22  | 17  | 24.5  |            | Met Objective               |      |
| Attribute Title:  | Mission Reliability MR for 3.5 hr. flight (%)                                 |   |            | KPP                         |      |
| 85  | 80  | 86.7  |            | Met Objective               |      |
| Attribute Title:  | Survivability Safe Operation (minutes)  |   |            | KPP                         |      |
| 30  | 30  | 30  |            | Met Objective               |      |
| Attribute Title:  | Survivability Survive Band<br>IV MANPADS IR Missile<br>Engagement             |   |            | КРР                         |      |
| IAW JROCM<br>086-10   | IAW JROCM<br>086-10   | IAW JROCM<br>086-10   |            | Met Objective               |      |
| Attribute Title:  | Force Protection<br>Crewstation armor<br>survivability (mm)                   |   |            | КРР                         |      |
| IAW JROCM<br>086-10   | IAW JROCM<br>086-10   | IAW JROCM<br>086-10   |            | Met Objective               |      |

| Attribute Title:    | Force Protect<br>Crewstation a<br>survivability ( | tion<br>armor barrier<br>mm) | KPP           |  |
|---------------------|---|------------------------------|---------------|--|
| IAW JROCM<br>086-10 | IAW JROCM<br>086-10                               | IAW JROCM<br>086-10          | Met Objective |  |

| Performance Notes:   | Performance Deviation Explanations: |
|--|-------------------------------------|
| Net Ready KPP compliance is achieved by<br>meeting the information exchange capabilities<br>required by the Integrated Architectures<br>Operational View-1 and is demonstrated by<br>completing Joint Interoperability Certification,<br>Army Interoperability Certification and DoD<br>Information Assurance and Accreditation Process. |                                     |
| Mission Reliability based on Reliability,<br>Availability, and Maintainability data derived from<br>performance of fielded aircraft.   |                                     |

# Acquisition Budget Estimate

# **Total Acquisition Cost**

| Budget Year: 2023                          | Base Y                                     | ear: 2010                                  |                                 |                                 |            |
|--|--|--|---------------------------------|---------------------------------|------------|
| Appropriation<br>Category (\$<br>Millions) | Objective<br>Base Year<br>(current<br>APB) | Threshold<br>Base Year<br>(current<br>APB) | Budget<br>Estimate<br>Base Year | Budget<br>Estimate<br>Then Year | Deviation? |
| RDT&E                                      | \$0.0                                      | \$0.0                                      | \$0.0                           | \$0.0                           |            |
| Procurement                                | \$2,003.3                                  | \$2,203.6                                  | \$2,130.7                       | \$2,472.7                       |            |
| MILCON)                                    | \$0.0                                      | \$0.0                                      | \$0.0                           | \$0.0                           |            |
| Acq-O&M                                    | \$0.0                                      | \$0.0                                      | \$0.0                           | \$0.0                           |            |
| Total Acquisition                          | \$2,003.3                                  |  | \$2,130.7                       | \$2,472.7                       |            |
| PAUC                                       | \$ 35.773                                  | \$39.350                                   | \$26.971                        | \$31.300                        |            |
| APUC                                       | \$ 35.773                                  | \$39.350                                   | \$26.971                        | \$31.300                        |            |

#### **Total End Item Quantity**

| Quantity        | Current APB | Current Estimate |  |
|-----------------|-------------|------------------|--|
| Development Qty | 0           | 0                |  |
| Procurement Qty | 56          | 79               |  |

#### **Risk and Sensitivity Analysis**

#### Current Procurement Risks:

- Original Baseline Estimate (December 2010) A successful Milestone C was completed on September 27, 2010, authorizing LRIP and advance procurement actions for FRP. Milestone C separated the Apache program into the Remanufacture and New Build programs with separate APBs. The Apache Office of the Secretary of Defense (OSD) CAPE ICE was used to establish the APB. The most significant cost drivers in the Apache estimate are material, labor and prime contractor labor and overhead rates and factors.
- Current Baseline Estimate (July 2013) Apache completed a FRP Decision in August 2012 and an OSD CAPE ICE was prepared. This was the first time actuals from the AB3 production line were incorporated into the ICE. Material, labor, prime contractor rates and factors decreased from the Revised Original Baseline completed in December 2010.
- 3. Current Procurement Cost (June 2021) The current Apache program office estimate is based upon the 2012 OSD CAPE Estimate and adjusted for fact of life changes and updated actuals of the current New Build production line and option pricing on the Multi-Year contract. The Apache Current Estimate cost model reflects a 50% Confidence Level estimate through its use of actual costs. The most significant cost drivers in the Apache estimate remain the material and labor. The Apache program assumed the risk of procuring radios, which were to be provided by JPO JTRS. The Apache program signed a five-year Multi-Year contract from FY 2017 to FY 2021 for the procurement of the AH-64E Apache aircraft.

## **Unit Cost**

#### **Current Baseline Compared with Current Estimate**

Current Baseline Base Year: 2010

| Category (\$ Millions)       | Current Baseline | Current Estimate | %<br>Change | Breach?<br>Significant or<br>Critical |
|------------------------------|------------------|------------------|-------------|---------------------------------------|
| <b>Program Acquisition U</b> | nit Cost         | -                |             |                                       |
| Acquisition Cost             | \$2,003.3        | \$2,130.7        |             |                                       |
| Program Quantity             |                  |                  |             |                                       |
| PAUC                         | \$35.773         | \$26.971         | -24.61%     | None                                  |
| Average Procurement          | Unit Cost        |                  |             |                                       |
| Procurement Cost             | \$2,003.3        | \$2,130.7        |             |                                       |
| Procurement Quantity         | 56               | 79               |             |                                       |
| APUC                         | \$35.773         | \$26.971         | -24.61%     | None                                  |

#### **Original Baseline Compared with Current Estimate**

Original Baseline Base Year: 2010

| Category (\$ Millions)       | Original Baseline | Current Estimate | %<br>Change | Breach?<br>Significant or<br>Critical |
|------------------------------|-------------------|------------------|-------------|---------------------------------------|
| <b>Program Acquisition U</b> | nit Cost          |                  |             |                                       |
| Acquisition Cost             | \$2,134.6         | \$2,130.7        |             |                                       |
| Program Quantity             | 56                |                  |             |                                       |
| PAUC                         | \$38.118          |                  | 0.00%       | None                                  |
| Average Procurement          | Unit Cost         |                  |             |                                       |
| Procurement Cost             | \$2,134.6         | \$2,130.7        |             |                                       |
| Procurement Quantity         | 56                | 79               |             |                                       |
| APUC                         | \$38.118          | \$26.971         | -29.24%     | None                                  |

## Contracts

| Contract Number:                         | W58RG2                   | W58RGZ-16-C-0023 Ord     |                 | er Number              |               |                                    | Contract Title:            |                   | AH-64E Apach<br>Multi-Year Contr |         |
|--|--------------------------|--------------------------|-----------------|------------------------|---------------|------------------------------------|----------------------------|-------------------|----------------------------------|---------|
| CAGE Code                                |                          |                          |                 | City                   |               | Mesa                               |                            |                   |                                  |         |
| CAGE Legal Name                          |                          |                          | Stat            | e/Province             | ,             | AZ 85215-<br>9707                  | Contract Str               | ategy             |                                  |         |
| Effort Number                            |                          |                          |                 |                        |               |                                    | 1                          |                   |                                  |         |
| Supportive Phase                         | Pro                      | duction                  | Latest          | t Modificati<br>Number | on            |                                    | Definitization Date        |                   | 3/15/                            | 2017    |
| Contract Type                            | Firm F                   | ixed Price               | Latest Mo<br>Da |                        | on            |                                    | Work Start Date            |                   |                                  |         |
| Technical Data<br>Rights                 | N                        | None                     |                 | Notes                  |               |                                    |                            |                   |                                  |         |
| Contract/Effort Price                    | ce, Quantity             | and Perform              | ance (\$        | M)                     |               |                                    |                            |                   |                                  |         |
| Initial Target Price                     | \$430.90                 | Current Target<br>Price  |                 | \$1,028.               | 40            | Contractor's<br>EAC                | \$1,028.40                 |                   |                                  |         |
| Initial Ceiling Price                    |                          | Current Ceiling<br>Price |                 |                        |               | PM's EAC                           | \$1,028.40                 |                   |                                  |         |
| Initial Quantity                         | 51                       | BAC                      |                 |                        |               | BCWP                               |                            | Work<br>Completed |                                  | 0.00%   |
| Current Quantity                         | 62                       | ACWF                     | P               |                        |               | BCWS                               |                            | Cost Variance     |                                  |         |
| Delivered Quantity                       | 21                       |                          |                 |                        |               |                                    |                            | Sche<br>Varia     | dule<br>nce                      |         |
| Factors Contributi<br>Effects on Program | ng to Cost V<br>n Costs: | Variance and             | I Projec        | ted                    | Fact<br>Effec | ors Contributing<br>ots on Program | g to Schedule<br>Schedule: | Variar            | nce and Pr                       | ojected |

| Contract Number: | W53P1J-17-D-0043 | Order Number:  |               | Contract Title:   | MTADS/PNVS<br>Production<br>Services IDIQ |
|------------------|------------------|----------------|---------------|-------------------|---|
| CAGE Code        |                  | City           | Orlando       |                   |   |
| CAGE Legal Name  |                  | State/Province | FL 32819-8907 | Contract Strategy |   |
| Effort Number    |                  |                |               |                   |   |

| Supportive Phase                          | Proc                     | duction                  | Latest M              |          |  | Definitization  | Date                 | 4/28/2                          | 2017                      |           |  |
|---|--------------------------|--------------------------|-----------------------|----------|--|---|----------------------|---------------------------------|---------------------------|-----------|--|
| Contract Type                             | Firm F                   | xed Price                | Latest M<br>red Price |          | Latest Modification<br>Date  |   |                      | Work Start                      | Date                      | 4/28/2017 |  |
| Technical Data<br>Rights                  | N                        | None N                   |                       | Notes    | Quantities are n<br>systems, but m<br>Replaceable Mo<br>MTADS/PNVS s | Duantities are reflective of com<br>ystems, but multiple Line Repl<br>Replaceable Modules (LRM's) t<br>/TADS/PNVS system. |                      | S/PNVS<br>it's (LRL<br>tained w | S<br>J)/ Line<br>vithin a |           |  |
| Contract/Effort Price                     | e, Quantity              | and Perform              | nance (\$M            | (I)      |  |   | _                    |                                 |                           |           |  |
| Initial Target Price                      | \$33.90                  | Current Target<br>Price  |                       | \$298.60 | Contractor's<br>EAC  | \$4,656.00  |                      |                                 |                           |           |  |
| Initial Ceiling Price                     |                          | Current Ceiling<br>Price |                       |          | PM's EAC   | \$4,656.00  |                      |                                 |                           |           |  |
| Initial Quantity                          | 8                        | BAC                      |                       |          | BCWP   |   | Work<br>Completed    |                                 | 0.00%                     |           |  |
| Current Quantity                          | 62                       | ACW                      | P                     |          | BCWS   |   | Cost Varia           | Ince                            |                           |           |  |
| Delivered Quantity                        | 45                       |                          |                       |          |  |   | Schedule<br>Variance |                                 |                           |           |  |
| Factors Contributir<br>Effects on Progran | ng to Cost V<br>n Costs: | /ariance an              | d Project             | ted Fa   | ctors Contributing<br>fects on Program                               | g to Schedule<br>Schedule:  | Variance a           | and Pro                         | pjected                   |           |  |

| Contract Number:         | W52P1       | J-16-D-0055         | Orde                          | r Number: |                     | Contract Title:     | REU/MMA<br>Production &<br>Services IDIQ |
|--------------------------|-------------|---------------------|-------------------------------|-----------|---------------------|---------------------|--|
| CAGE Code                |             |                     | City                          |           | Orlando             |                     |  |
| CAGE Legal Name          |             |                     | State/Province                |           | FL 32819-8907       | Contract Strategy   |  |
| Effort Number            |             |                     |                               |           |                     | 1                   |  |
| Supportive Phase         | Pro         | duction             | Latest Modification<br>Number |           |                     | Definitization Date | 6/30/2017                                |
| Contract Type            | Firm F      | ixed Price          | Latest Modification<br>Date   |           |                     | Work Start Date     | 8/18/2016                                |
| Technical Data<br>Rights | 1           | None                | Notes                         |           |                     |                     |  |
| Contract/Effort Price    | e, Quantity | and Perform         | ance (\$M                     | A)        |                     |                     |  |
| Initial Target Price     | \$1.90      | Current Ta<br>Price | arget                         | \$19.90   | Contractor's<br>EAC | \$931.20            |  |

| Initial QuantityBACBCWPWork<br>Completed3ACWPBCWSCost VarianceCurrent Quantity52ACWPBCWSCost VarianceDelivered QuantityCost VarianceSchedule<br>Variance                       | 0.00%    |
|--|----------|
| Current Quantity     52     ACWP     BCWS     Cost Variance       Delivered Quantity     Schedule     Variance   |          |
| Delivered Quantity Schedule Variance   |          |
| 3  |          |
| Factors Contributing to Cost Variance and Projected       Factors Contributing to Schedule Variance and P         Effects on Program Costs:       Effects on Program Schedule: | rojectec |

| Contract Number:         | W52P1.      | I-17-D-0070        | Orde                          | r Number:            |                     | Contract 1          | itle:             | MUMT F<br>& Servi | Production<br>ces IDIQ |
|--------------------------|-------------|--------------------|-------------------------------|----------------------|---------------------|---------------------|-------------------|-------------------|------------------------|
| CAGE Code                |             |                    |                               | City                 | Salt Lake City      |                     |                   |                   |                        |
| CAGE Legal Name          |             |                    | State                         | e/Province           | UT                  | Contract Str        | ategy             |                   |                        |
| Effort Number            |             |                    |                               |                      |                     |                     |                   |                   |                        |
| Supportive Phase         | Pro         | duction            | Latest Modification<br>Number |                      |                     | Definitization Date |                   | 6/15              | /2019                  |
| Contract Type            | Firm F      | ixed Price         | Latest                        | Modification<br>Date |                     | Work Start Date     |                   | 4/12/2019         |                        |
| Technical Data<br>Rights | 1           | lone               | 1                             | Notes                |                     |                     |                   |                   |                        |
| Contract/Effort Pric     | e, Quantity | and Perform        | ance (\$M                     | Л)                   |                     |                     |                   |                   |                        |
| Initial Target Price     | \$2.80      | Current T<br>Price | arget                         | \$44.20              | Contractor's<br>EAC | \$226.60            |                   |                   |                        |
| Initial Ceiling Price    |             | Current C<br>Price | eiling                        |                      | PM's EAC            | \$226.60            |                   |                   |                        |
| Initial Quantity         | 9           | BAC                |                               |                      | BCWP                |                     | Work<br>Completed |                   | 0.00%                  |
| Current Quantity         | 186         | ACWI               | þ                             |                      | BCWS                |                     | Cost              | Variance          |                        |
| Delivered Quantity       | 186         |                    |                               |                      |                     |                     | Schee<br>Varia    | dule<br>nce       |                        |

| Factors Contributing to Cost Variance and Projected<br>Effects on Program Costs: | Factors Contributing to Schedule Variance and Projected Effects on Program Schedule: |
|--|--|
|  |  |
|  |  |

| Contract Number:                          | W58RG                  | Z-15-C-005 Orde         |                  | Number:               |   | Contract                   | Title:            | El2 C     | amera<br>uction |
|---|------------------------|-------------------------|------------------|-----------------------|---|----------------------------|-------------------|-----------|-----------------|
| CAGE Code                                 |                        |                         |                  | City                  | Santa Clara                               |                            | -                 |           |                 |
| CAGE Legal Name                           |                        |                         | State            | Province              | CA 95054-<br>2704                         | Contract St                | rategy            |           |                 |
| Effort Number                             |                        |                         | 4                |                       |   |                            |                   |           |                 |
| Supportive Phase                          | Pro                    | duction                 | Latest N         | Modification<br>umber | n   | Definitization Date        |                   | 6/12/2015 |                 |
| Contract Type                             | Firm F                 | ixed Price              | Latest Modificat |                       | n   | Work Start Date            |                   | 6/12/2015 |                 |
| Technical Data<br>Rights                  | ,                      | None                    | Ν                | Votes                 |   |                            |                   |           |                 |
| Contract/Effort Pric                      | e, Quantity            | and Perform             | ance (\$M        | 1)                    |   |                            |                   |           |                 |
| Initial Target Price                      | 0.500                  | Current Target<br>Price |                  | \$3.50                | Contractor's<br>EAC                       | \$32.50                    |                   |           |                 |
| Initial Ceiling Price                     |                        | Current C<br>Price      | eiling           |                       | PM's EAC                                  | \$32.50                    |                   |           |                 |
| Initial Quantity                          | 104                    | BAC                     |                  |                       | BCWP                                      |                            | Work<br>Comple    | eted      | 0.00%           |
| Current Quantity                          | 104                    | ACW                     | Р                |                       | BCWS                                      |                            | Cost V            | ariance   |                 |
| Delivered Quantity                        | 104                    |                         |                  |                       |   |                            | Schedu<br>Variand | ule<br>ce |                 |
| Factors Contributir<br>Effects on Program | ng to Cost<br>n Costs: | Variance and            | l Projecte       | ed F                  | Factors Contributin<br>Effects on Program | g to Schedule<br>Schedule: | e Variano         | e and Pr  | ojected         |

| Contract Number:                          | W52P1.      | J-18-D-0061             | Orde      | er Number                  | r:   |                                   | Contract T               | itle:         | MRFI Pro<br>Servic | oduction 8<br>es IDIQ |
|---|-------------|-------------------------|-----------|----------------------------|------|-----------------------------------|--------------------------|---------------|--------------------|-----------------------|
| CAGE Code                                 |             |                         |           | City                       |      | Owego                             |                          |               |                    |                       |
| CAGE Legal Name                           |             |                         | State     | e/Province                 |      | NY                                | Contract Str             | ategy         |                    |                       |
| Effort Number                             |             |                         |           |                            |      |                                   |                          |               |                    |                       |
| Supportive Phase                          | Pro         | duction                 |           | Modificati                 | on   |                                   | Definitization           | Date          | 7/29               | /2019                 |
| Contract Type                             | Firm F      | Late                    |           | Latest Modificatio<br>Date |      |                                   | Work Start Date          |               | 9/1/2018           |                       |
| Technical Data<br>Rights                  | 1           | lone N                  |           | Notes                      |      |                                   |                          |               |                    |                       |
| Contract/Effort Price                     | e, Quantity | and Perform             | ance (\$I | M)                         |      |                                   |                          |               |                    |                       |
| Initial Target Price                      | \$1.80      | Current Target<br>Price |           | \$8.30                     | )    | Contractor's<br>EAC               | \$249.50                 |               |                    |                       |
| Initial Ceiling Price                     |             | Current C<br>Price      | eiling    | \$249.5                    | 50   | PM's EAC                          | \$249.50                 |               |                    |                       |
| Initial Quantity                          | 2           | BAC                     |           |                            |      | BCWP                              |                          | Work<br>Com   | oleted             | 0.00%                 |
| Current Quantity                          | 30          | ACW                     | P         |                            |      | BCWS                              |                          | Cost          | Variance           |                       |
| Delivered Quantity                        | 6           |                         |           |                            |      |                                   |                          | Sche<br>Varia | dule<br>nce        |                       |
| Factors Contributin<br>Effects on Program | g to Cost   | Variance and            | l Project | ted                        | Fact | ors Contributing<br>ts on Program | to Schedule<br>Schedule: | Variar        | nce and P          | rojected              |

# **Technologies and Systems Engineering**

# Significant Technical Risks

| Event | Date      | Description  |  |  |  |  |
|-------|-----------|--|--|--|--|--|
|       |           | <ol> <li>Insufficient fidelity of Lot 6 functionality<br/>requirements</li> </ol>            |  |  |  |  |
| MS B  | 7/30/2006 | 2. Reliability KPP   |  |  |  |  |
|       |           | 3. Performance KPP   |  |  |  |  |
|       |           | 4. Net Ready KPP   |  |  |  |  |
| MS C  | 9/30/2006 | 1. Architecture Shortfalls – Refined hardware and<br>software requirements coupled with COTS |  |  |  |  |

|         |            | obsolescence necessitate computer / electronic<br>tech refresh to meet Lot 4 - Lot 6 functionality.<br>2. LRIP Production – Boeing has not<br>manufactured an AB3 aircraft and is using a<br>subcontractor for premodification for the first<br>time. Unforeseen production variables (new<br>subcontractors and components) could cause<br>schedule and delivery delays.  |
|---------|------------|--|
| FRP     | 8/30/2012  | <ol> <li>Architecture Shortfalls – Refined hardware and<br/>software requirements coupled with Commercial-<br/>Off-The-Shelf (COTS) obsolescence necessitate<br/>computer / electronic tech refresh to meet Lot 4 -<br/>Lot 6 functionality.</li> <li>Main Transmission – Financial issues at<br/>Northstar Aerostar (Apache Block III (AB3) main<br/>transmission supplier) created a temporary<br/>trough in transmission supply, resulting in up to<br/>seven aircraft without transmissions. The AB3<br/>prime contractor took measures to sustain AB3<br/>production and revitalize Northstar's supply base.<br/>The PM closely monitored this plan and full<br/>recovery established in December 2012 with no<br/>critical fielding impacts expected. The PM will<br/>continue to closely monitor this plan.</li> <li>Net Ready – The AB3 Link 16 solution<br/>changed from a Joint Tactical Radio System<br/>(JTRS) Joint Program Office (JPO) Government<br/>Furnished Equipment radio to a Non-<br/>Developmental Item (NDI) radio. The AB3 PM is<br/>solely managing Link 16 for Lots 4 - Lot 5. A<br/>planned NDI competition for a Lot 6 Link 16<br/>solution will be managed by the JTRS JPO. If the<br/>competitive procurement does not meet the Lot 6<br/>timeline there will be a Link 16 capability fielding<br/>gap.</li> </ol> |
| Current | 12/31/2021 | 1. The AH-64E program meets all Key<br>Performance Parameters and remains on<br>schedule and affordable. The program currently<br>remains on schedule to deliver IAW the HQDA<br>fielding plan. USG completed the special<br>investigation into Boeing quality due to Critical<br>Safety Item material escapements. Three<br>hundred seventy-nine (379) manufacturing plan<br>changes implemented and 43 of 43 discreet<br>"Return to Green" actions completed.<br>Recommend certify the December 2021 SAR<br>with risk until award of MY2 which will constitute<br>the formal legal agreement between Boeing and<br>USG on the entirety of the Army's CSI program<br>requirement. Award is estimated 3QFY22.  |

## **Deliveries and Expenditures**

| Quantities  | Planned to Date | Actual to Date | Total Quantity | Percent<br>Delivered |
|-------------|-----------------|----------------|----------------|----------------------|
| Development | 0               | 0              | 0              | 0.00%                |
| Procurement | 41              | 41             | 79             | 51.90%               |
| Total       | 41              | 41             | 79             | 51.90%               |

| Years Appropriated to date | 10 | Total Years Appropriated<br>Funding (Current Baseline): | 10 | Percent Years<br>Appropriated: | 100.00 % |
|----------------------------|----|---|----|--------------------------------|----------|
| uuto                       |    | runding (ourient basenne).                              |    | Appropriated.                  | 70       |

| Appropriation Category<br>(\$Millions) | Then Year Appropriated<br>Amount | Then Year Expended Amount |
|--|----------------------------------|---------------------------|
| RDT&E                                  | 0.00                             | 0.00                      |
| Procurement                            | 2,472.70                         | 1,852.65                  |
| MILCON                                 | 0.00                             | 0.00                      |
| Acq O&M                                | 0.00                             | 0.00                      |
| Total Appropriated/Expended            | \$2,472.70                       | \$1,852.65                |
| Percent Appropriated/Expended          | 100.00%                          | 74.92%                    |

The above data is current as of March 14, 2022.

## Low-Rate Initial Production

|                         | Initial Decision LRIP | Current Total LRIP |
|-------------------------|-----------------------|--------------------|
| Approval Date           |                       |                    |
| Approval LRIP Quantity  |                       |                    |
| Approval Document Title |                       |                    |
| Start Year              |                       |                    |
| End Year                |                       |                    |

Rationale if quantity exceeds 10% of the total number of articles to be produced: CUI: \_\_\_\_\_

There is no LRIP for this program.

## **Operating and Support (O&S) Cost**

#### **Total Program O&S Costs Compared with Baseline**

Base Year: 2010

|                           | Current Base<br>Year Objective | Current Base<br>Year<br>Threshold | Current Base<br>Year Estimate | Current Then<br>Year Estimate | Deviation ? |
|---------------------------|--------------------------------|-----------------------------------|-------------------------------|-------------------------------|-------------|
| Total O&S<br>(\$Millions) | \$3,538.10                     | \$3,891.90                        | \$3,258.00                    | \$4,141.27                    |             |

#### **Operating and Support Cost Breakdown**

| Category (Base Year<br>\$Millions) | System Name: AH-64E New<br>Build | System Name: Longbow<br>Apache |
|------------------------------------|----------------------------------|--------------------------------|
| Unit-Level Manpower                | \$1,572.0                        | \$22,835.0                     |
| Unit Operations                    | \$185.0                          | \$3,044.0                      |
| Maintenance                        | \$840.0                          | \$17,044.0                     |
| Sustaining Support                 | \$538.0                          | \$5,271.0                      |
| Continued System<br>Improvements   | \$90.0                           | \$1,084.0                      |
|                                    |                                  |                                |
| Other                              | \$33.0                           | \$1,500.0                      |
| Total O&S                          | \$3,258.0                        | \$50,778.0                     |

#### **Cost Estimate Source**

Type: Program Office Estimate

Approval Authority and Date: 12-08-2021

**Note:** The O&S cost estimate is based upon the OSD CAPE ICE dated August 15, 2012. The estimate was last updated on December 8, 2021 for fact-of-life changes.

#### O&S Notes:

The AH-64E Apache is maintained in a two level maintenance system (field and depot) by a mix of Soldier and civilian maintainers. The strategy assumes the fielding of 79 New Build aircraft, each flying 238.8 hours per year. Aircraft are logistically supported by a mix of organic supply and Contractor Performance Based Logistics activities.

Other Costs: PM Apache utilizes this field to capture the OMA funded costs from AMCOS labeled "Average Cost of Morale, Welfare, and Recreation," "Average Recruiting Cost," and "Average Cost of Officer Acquisition."