| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 United States Special Operations Command | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development* | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Program Element | 1,958.417 | 239.991 | 173.537 | 179.499 | - | 179.499 | 230.228 | 231.072 | 155.516 | 171.647 | Continuing | Continuing |
| SF100: *Aviation Systems Advanced Development* | 1,449.437 | 101.503 | 38.594 | 46.162 | - | 46.162 | 78.295 | 81.473 | 44.563 | 62.608 | Continuing | Continuing |
| SF200: *CV-22* | 64.061 | 13.011 | 6.932 | 11.695 | - | 11.695 | - | 9.727 | 19.064 | 19.445 | Continuing | Continuing |
| SF300: *Armed Overwatch/ Targeting* | 0.000 | 24.088 | 22.952 | 1.200 | - | 1.200 | 0.800 | - | - | - | 0.000 | 49.040 |
| S750: *Mission Training and Preparation Systems* | 51.441 | 9.272 | 10.227 | 13.848 | - | 13.848 | 17.430 | 16.804 | 13.530 | 13.800 | Continuing | Continuing |
| S875: *AC/MC-130J* | 95.574 | 51.783 | 52.045 | 40.757 | - | 40.757 | 65.496 | 63.116 | 17.184 | 17.528 | Continuing | Continuing |
| D615: *Rotary Wing Aviation* | 297.904 | 40.334 | 42.787 | 65.837 | - | 65.837 | 68.207 | 59.952 | 61.175 | 58.266 | Continuing | Continuing |

**Program MDAP/MAIS Code:**
**Project MDAP/MAIS Code(s):** 212

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

SF100 Aviation Systems Advanced Development:
This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique aviation and training requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in areas such as: SOF common avionics; SOF Common Terrain Following/Terrain Avoidance (TF/TA) radar, best known as Silent Knight Radar (SKR) or AN/APQ-187; Defensive Countermeasures; Electronic Warfare (EW) - Radio Frequency Countermeasures (RFCM); Precision Strike Package (PSP); PSP High Energy Laser (HEL); AC-130H/W/U and MC-130E/H/P Recapitalization; Armed Overwatch and other SOF airborne platforms; digital terrain elevation data and electronic order of battle; digital maps; mission networking; near real-time Intelligence, Surveillance and Reconnaissance (ISR); data fusion; threat detection and avoidance; navigation, target detection, and identification technologies; weapons integration; digital broadcast capabilities; aerial refueling; survivability; mission systems automation and ISR payload technological improvements with size, weight, power and integration onto all SOF Unmanned Aerial System (UAS) ISR platforms.

SF200 CV-22 Development/Test and Evaluation:
The CV-22 Osprey is a SOF variant of the V-22 vertical medium lift, multi-mission aircraft. The CV-22 provides long range, high speed, infiltration (infil), exfiltration (exfil), and resupply to SOF teams in hostile, denied, and politically sensitive areas. This is a capability not currently provided by other existing aircraft. The funding in this project supports integration, design, development, rapid prototyping, and test to provide improved capabilities to include, but not limited to: more robust performance in Situational Awareness (SA); ISR, weapons, avionics; SOF communications; defensive/survivability systems; interoperability; speed and maneuverability; mission deployment and improved reliability and maintainability of the CV platform. The CV-22 SOF Common TF/TA APQ-187 SKR enables the CV-22 crew to penetrate medium-to-high threat areas at night and in adverse weather conditions while conducting long-range, clandestine infil, exfil and SOF resupply missions. Presents a more

sustainable/capable replacement to the obsolete and technology-limited TF/TA APQ-186 Multi-Mode Radar (MMR). CV-22 Reliability Improvements designs, integrates, tests and validates system, and sub-system, reliability improvement enhancements to meet required aircraft availability and operational requirements. This incremental development will accelerate the fielding and retrofit of system design improvements directly increasing CV-22 fleet readiness and aircraft availability.

SF300 Armed Overwatch:
Armed Overwatch provides SOF with crewed deployable, affordable, and sustainable aircraft systems capable of executing Close Air Support (CAS), Precision Strike, and Manned Armed ISR requirements in austere and permissive environments for use in Irregular Warfare operations aligned with the National Defense Strategy (NDS) priorities. The funding in this project supports integration and testing of SOF-unique capabilities and Aircraft Certification efforts. Armed Overwatch is designated a Middle Tier of Acquisition (MTA) program which uses a Rapid Prototype user assessment for a SOF-peculiar, fixed wing aircraft with specific sensors to detect ground assists. The USSOCOM anticipates rapid fielding of the aircraft with sensors, and transitioning to the Major Capability Acquisition pathway at Milestone C.

The total cost of the Armed Overwatch Middle Tier of Acquisition effort is $2.000 million (FY 2023 - FY 2027), including RDT&E and procurement of prototype units. The Armed Overwatch effort is fully funded across the Future Years Defense Program.

S750 Mission Training and Preparation Systems (MTPS):
The MTPS project funds the definition, design, development, rapid prototyping, integration, and testing of Special Operations Mission Planning and Execution (SOMPE) systems to support mission planning, rehearsal, and execution requirements to meet SOF-unique mission requirements and correct deficiencies in current mission planning, rehearsal, and execution capabilities. The MTPS project also includes program management, systems engineering, configuration management, architecture development, risk reduction, and trade study initiatives, as well as initiatives to assure interoperability and commonality between diverse mission planning, rehearsal, and execution systems. Additionally, this project funds Simulator Block Upgrade (SBUD) training transformation initiatives to develop and integrate innovative training solutions as well as advanced instructor and student feedback capabilities for the Air Force Special Operations Command (AFSOC) fixed wing simulator and training device portfolio.

S875 AC/MC-130J:
The AC/MC-130J project funds core SOF-unique modifications to replace aging/retired AC-130H Spectre, AC-130W Stinger II, AC-130U Spooky, MC-130E Combat Talon I, MC-130P Combat Shadow, MC-130H Combat Talon II aircraft. The 8 AC-130H Spectre, 12 AC-130W Stinger II and 17 AC-130U Spooky airframes will be replaced with MC-130J aircraft modified with the PSP to achieve the AC-130J configuration. The AC-130J aircraft will provide close air support, air interdiction, and armed reconnaissance capability. The 14 MC-130E Combat Talon I, 23 MC-130P Combat Shadow, and 24 MC-130H Combat Talon II airframes will be replaced by MC-130J Commando II aircraft with SOF mission modifications. The MC-130J Commando II aircraft provide clandestine single or multi-ship low-level aerial refueling for special operations helicopters and CV-22 aircraft; and conducts airdrops of leaflets, small special operations teams, resupply bundles, and combat rubber raiding craft. The Air Force procures and fields the basic aircraft, common support equipment, and trainers for the United States Special Operations Command (USSOCOM). Incremental upgrade and agile software delivery approaches will be used to rapidly prototype, integrate and mature SOF capabilities onto the aircraft. SOF capabilities include, but are not limited to: Airborne Mission Networking (AbMN); data fusion; threat detection and avoidance; integrated terrain following/terrain avoidance; electronic warfare; and embedded training. Integrating and automating SOF mission systems that deliver these capabilities is critical to fielding SOF-capable AC/MC-130J aircraft to recapitalize AFSOC legacy C-130 fleet.

| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 United States Special Operations Command | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development* | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* |

D615 Rotary Wing Aviation:
This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for SOF-peculiar rotary wing aviation and training requirements. This project includes modifications to Aircraft Survivability Equipment (ASE), avionics, and weapons systems to counter rapidly emerging threats, address cyber security, improve lethality and enhance aircraft self-protection in contested environments. Efforts include aircraft sensor data fusion via a common mission processor to create a one world model that serves as a central node for multi-application capability with potential growth in the areas of situational awareness, safety, lethality, and survivability and cross platform synergy. Rotary wing aircraft supported by this project include: MH-60M, MH-47G, A/MH-6, and Future Vertical Lift (FVL). These aircraft provide aviation support to SOF in worldwide contingency operations and low-intensity conflicts. They must be capable of rapid deployment, undetected penetration of hostile areas, and operations at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF in the multi-domain operations (MDO) environments and build enduring advantage.
The anti-access/area denial (A2/AD) threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters.

These technologies will be pursued via rapid prototyping efforts when appropriate.

| B. Program Change Summary ($ in Millions) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 250.623 | 173.537 | 0.000 | - | 0.000 |
| Current President's Budget | 239.991 | 173.537 | 179.499 | - | 179.499 |
| Total Adjustments | -10.632 | 0.000 | 179.499 | - | 179.499 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -9.148 | - | | | |
| • Adjustments to Budget Year | - | - | 179.499 | - | 179.499 |
| • Total Other Adjustments | -1.484 | - | - | - | - |

**Change Summary Explanation**
Funding:

FY 2021: Net decrease of -$10.632 million is due to a reprogramming of funds to the congressionally mandated Small Business Innovative Research (SBIR)/ Small Business Technology Transfer (STTR) programs (-$9.148 million) and a decrease to support emerging critical command requirements (-$1.484 million).

FY 2022: None

| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 United States Special Operations Command | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 7: *Operational Systems Development* | **R-1 Program Element (Number/Name)**<br>PE 1160403BB *I Aviation Systems* |

FY 2023: Funding increase of $179.499 million reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

FY 2023 funding request was reduced by $22.474 million to account for the availability of prior year execution balances.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>SF100 / *Aviation Systems Advanced Development* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SF100: *Aviation Systems Advanced Development* | 1,449.437 | 101.503 | 38.594 | 46.162 | - | 46.162 | 78.295 | 81.473 | 44.563 | 62.608 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique aviation and training requirements. Timely application of SOF common technology is critical and necessary to meet requirements in such areas as: SOF common avionics; SOF Common Terrain Following/Terrain Avoidance (TF/TA) radar, best known as Silent Knight Radar (SKR) or AN/APQ-187; Defensive Countermeasures (DCM); Electronic Warfare (EW) - Radio Frequency Countermeasures (RFCM); Precision Strike Package (PSP); PSP High Energy Laser (HEL); AC-130H/W/U and MC-130E/H/P Recapitalization, and other SOF airborne platforms; digital terrain elevation data and electronic order of battle; digital maps; Airborne Mission Networking (AbMN); near real-time Intelligence, Surveillance and Reconnaissance (ISR); data fusion; threat detection and avoidance; navigation, target detection, and identification technologies; weapons integration; digital broadcast capabilities; aerial refueling; survivability; mission systems automation and ISR payload technological improvements with size, weight, power and integration onto all SOF Unmanned Aerial System (UAS) ISR platforms.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** EW-RFCM | 46.557 | 21.605 | 10.075 |
| ***Description:*** The EW-RFCM program supports development, integration, and test activities to provide EW capability against radio frequency threats for SOF-unique AC/MC-130J aircraft. The RFCM system is part of the DCM suite that provides situational awareness and threat response processing required for SOF missions.<br><br>***FY 2022 Plans:***<br>Continue aircraft integration and interoperability activities, system qualification, deficiency resolution and system developmental test. Begin system operational test on the AC-130J and MC-130J aircraft. Also, begin spiral one upgrade activities design to increase RFCM capabilities to meet emerging threats.<br><br>***FY 2023 Plans:***<br>Completes aircraft integration and interoperability activities, system qualification, deficiency resolution, system developmental test and system operational test on the AC-130J and MC-130J aircraft. Continues spiral one activities design to increase RFCM capabilities to meet emerging threats.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Decrease of $11.530 million is due to completion of integration and operational test on AC-130J and MC-130J aircraft. | | | |
| ***Title:*** PSP for SOF | 4.460 | - | - |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Description:*** PSP for SOF supports systems engineering, analysis, development, and enhancement of the baseline PSP and integration, installation, and test on host MC-130J aircraft provided by the U.S. Air Force for the AC-130H, AC-130W and AC-130U recapitalization, as well as current SOF AC-130Js, AC-130Ws, and other SOF platforms. Missions for the AC-130 aircraft include, but are not limited to: Close Air Support; Air Interdiction; and Armed Reconnaissance. PSP is modular, scalable, and platform agnostic. | | | |
| ***Title:*** PSP HEL<br>***Description:*** The HEL effort leverages a rapid prototyping approach to demonstrate integration of a laser weapon system onto an AC-130J aircraft. Utilizing a best of breed approach, it integrates laser, beam control, power, and thermal subsystems via a Government lead system integrator. This provides additional flexibility for rapid prototyping and future modifications.<br>***FY 2022 Plans:***<br>Complete delivery of HEL subsystems. Continue Government integration and ground testing. Perform aircraft fit check and flight test planning activities.<br>***FY 2023 Plans:***<br>Initiates HEL flight testing. Continues Government integration and ground testing. Performs aircraft fit check and flight test activities.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $3.962 million is due to initiation of HEL flight testing on an AC-130J. | 23.313 | 12.008 | 15.970 |
| ***Title:*** C-130 SOF Common TF/TA SKR<br>***Description:*** The C-130 SOF Common TF/TA SKR supports integration and test of a TF/TA radar and on-board processor to provide a multi-mode terrain following capability on MC-130J aircraft. Crew systems integration efforts include modifications to aircraft controls and displays to automate TF/TA flight management and reduce pilot, copilot and Combat Systems Officer workload during missions previously performed by five aircrew members on legacy MC-130 tankers and penetrators. | 16.301 | - | - |
| ***Title:*** MH-47/MH-60 SOF Common TF/TA SKR<br>***Description:*** The MH-47/MH-60 SOF Common TF/TA SKR supports continuing capability enhancements, testing, and qualification of the TF/TA Low Probability of Intercept and Low Probability of Detection (LPI/LPD) radar to defeat advanced passive detection threats while maintaining safe TF capabilities.<br>***FY 2022 Plans:*** | 5.435 | 2.095 | 2.139 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Continue software spiral efforts to reduce TF/TA SKR signature, support data fusion initiatives, and increase reliability.<br>***FY 2023 Plans:***<br>Continues software spiral efforts to reduce TF/TA SKR signature, support data fusions initiatives, and increase reliability.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $0.044 million is due to increased SKR test engineering support costs. | | | |
| ***Title:*** ISR Payload<br>***Description:*** The ISR Payload Sensor Technology supports development, integration, and testing of sensor miniaturization efforts to adapt large uncrewed system ISR capabilities on all SOF unmanned ISR platforms. | 1.838 | - | - |
| ***Title:*** Next Generation Aviation Engineering Analysis (AEA)<br>***Description:*** Funding supports engineering analysis activities to address aviation survivability efforts such as signature management, situational awareness, versatile mission equipment (payloads, communications and weapons), next-generation mobility, and next-generation ISR to achieve SOF mission objectives.<br>***FY 2022 Plans:***<br>Continue to perform engineering analysis and perform demonstrations to improve aviation mission survivability, mission automation, sensor fusion, targeting enhancement, cyber hardening, navigation in denied environments, and datalink enhancements to support Fixed Wing next gen ISR, next gen Mobility and next gen Strike platforms. Activities include, but are not limited to, signature management (Acoustic, infrared, radio frequency), situational awareness with full spectrum threat warning and countermeasures, and versatile mission equipment (payloads, communications and weapons) to improve SOF survivability in less than permissive operating environments. Other technology advancements for Fixed Wing platforms include improvements for increased range, speed with reduced time to target, improving ability to insert and recover forces in contested environments and technology analysis on advanced mobility platforms (deep penetrating and aquatic landing). Strike enhancements include targeting/engagement automation, weapons effects and stand-off capability.<br>***FY 2023 Plans:***<br>Continues to perform engineering analysis and to perform demonstrations to improve aviation mission survivability, mission automation, sensor fusion, targeting enhancement, cyber hardening, navigation in denied environments, and datalink enhancements to support Fixed Wing next-gen ISR, next-gen Mobility and next-gen Strike platforms. Activities include, but are not limited to, signature management (acoustic, infrared, radio frequency), situational awareness with full spectrum threat warning and countermeasures, and versatile mission equipment (payloads, communications and weapons) to improve SOF survivability in less than permissive operating environments. Other technology advancements for Fixed Wing platforms include improvements for increased range, speed with reduced time to target, improving ability to insert and recover forces in contested environments | 3.599 | 2.886 | 17.978 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| and technology analysis on advanced mobility platforms (deep penetrating and aquatic landing). Strike enhancements include targeting/engagement automation, weapons effects and stand-off capability. Begins additional efforts that will focus on early engineering analysis of amphibious capability and High Speed Vertical Take Off & Landing (HSVTOL) platform.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $15.092 million is due to amphibious mobility and HSVTOL engineering analysis activities. | | | |
| **Accomplishments/Planned Programs Subtotals** | 101.503 | 38.594 | 46.162 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PROC/5000C13000: *C-130 Modifications* | 16.121 | 13.373 | 11.945 | - | 11.945 | 18.796 | 18.285 | 22.925 | 23.384 | Continuing | Continuing |
| • PROC/2012C130J: *AC/MC-130J* | 150.883 | 205.216 | 225.569 | - | 225.569 | 319.754 | 310.229 | 341.280 | 388.428 | Continuing | Continuing |
| • PROC/1202PSP: *Precision Strike Package* | 233.111 | 165.224 | 57.450 | - | 57.450 | 108.497 | 111.346 | 107.500 | 65.473 | Continuing | Continuing |
| • PROC0201RWUPGR: *Rotary Wing Upgrades and Sustainment* | 220.676 | 207.278 | 214.575 | - | 214.575 | 254.073 | 247.746 | 222.701 | 229.260 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

• EW – RFCM: Awarded $700 million ceiling acquisition and procurement contract covering Engineering and Manufacturing Development (EMD), Low-Rate Initial Production (LRIP), and Full-Rate Production (FRP) activities. EMD and LRIP are fixed price award fee incentivizing schedule and were awarded in 3rd Qtr FY 2020. FRP and other programmatic support activities (such as data rights and system integration laboratory options) are firm fixed price.

• PSP for SOF: Incremental acquisition strategy to integrate and test the PSP and capability enhancements on donor MC-130J aircraft provided by the U.S. Air Force and other SOF aircraft. Multiple contract awards.

• PSP HEL: AC-130J HEL program utilizes Naval Surface Warfare Center (NSWC) Dahlgren Division as the Government lead system integrator of HEL components. HEL system components are either purchased under Defense Ordnance Technology Consortium or developed and assembled by NSWC Dahlgren. Both approaches provide flexibility for rapid prototyping.

• C-130 SOF Common TF/TA SKR: Awarded delivery order on cost plus incentive fee contract to integrate and test the SOF Common TF/TA SKR on MC-130J aircraft and develop modifications to aircraft displays and controls.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

• MH-47/MH-60 SOF Common TF/TA SKR: Sole source to Raytheon to produce the SKR. SKR Logistics and MH-47G and MH-60M A-Kit production and installation proceeding at SOFSA, Lexington, KY. Contract Vehicle: Multi-Year Procurement (MYP) for FY 2021 through FY 2023 procurements.

• Next Generation AEA: Utilize Joint DOD programs to advance the technology levels for both the current Fixed Wing (FW) platforms and the advanced mobility platforms along with the Joint Aircraft Survivability Program sponsored projects to recommend material solutions for demonstration and potential integration on FW aircraft. Perform engineering analysis on key enabling technologies for amphibious and HSVTOL capabilities in conjunction with the Air Force Research Laboratory (AFRL), AFWERX, and other agencies.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Electronic Warfare (EW) - Radio Frequency Countermeasures (RFCM) Follow-on Development Contract | C/FPAF | Sierra Nevada Corp. : Centennial, CO | 30.195 | 40.711 | Mar 2021 | 5.361 | Nov 2021 | - | | - | | - | 0.000 | 76.267 | - |
| EW RFCM Spiral One | C/TBD | Various : Various | - | - | | 6.950 | Mar 2022 | 6.500 | Mar 2023 | - | | 6.500 | Continuing | Continuing | - |
| Precision Strike Package (PSP) for SOF - Defensive Systems | C/Various | Various : Various | 27.901 | 3.000 | Mar 2021 | - | | - | | - | | - | 0.000 | 30.901 | - |
| PSP for SOF- Alternate Position, Navigation, and Timing | C/Various | Various : Various | 8.308 | 0.500 | Feb 2021 | - | | - | | - | | - | 0.000 | 8.808 | - |
| PSP for SOF - Deficiency Resolution | C/Various | Various : Various | 6.789 | 0.711 | Apr 2021 | - | | - | | - | | - | 0.000 | 7.500 | - |
| PSP for SOF- Other Government Costs | C/Various | Various : Various | 1.020 | 0.249 | Feb 2021 | - | | - | | - | | - | 0.000 | 1.269 | - |
| PSP High Energy Laser (HEL) - High Power Laser | C/CPFF | Lockheed Martin Aculite : Bothell, WA | 21.468 | 1.810 | Mar 2021 | - | | - | | - | | - | 0.000 | 23.278 | - |
| PSP HEL - Subsystem Assembly | C/CPFF | Naval Surface Warfare Center : Dahlgren, VA | 17.034 | 11.473 | Apr 2021 | - | | - | | - | | - | 0.000 | 28.507 | - |
| PSP HEL - Battery Development | C/CPFF | General Technical Services : Wall, NJ | 3.544 | 1.048 | Mar 2021 | - | | - | | - | | - | 0.000 | 4.592 | - |
| PSP HEL - Integration and Ground Testing | C/CPFF | Naval Surface Warfare Center : Dahlgren, VA | 4.659 | 7.564 | Apr 2021 | 10.608 | Dec 2021 | - | | - | | - | 0.000 | 22.831 | - |
| PSP HEL - Flight Testing/ Demonstration | C/CPFF | Various : Various | - | 1.418 | Apr 2021 | 1.400 | Mar 2022 | 15.970 | Nov 2022 | - | | 15.970 | 0.000 | 18.788 | - |
| C-130 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR) | C/CPIF | Lockheed Martin Aero : Marietta, GA | 207.288 | 11.834 | Jan 2021 | - | | - | | - | | - | 0.000 | 219.122 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH-47/MH-60 SOF Common TF/TA SKR | SS/FP | Raytheon : McKinney, TX | 15.163 | 4.726 | Apr 2021 | 1.467 | Apr 2022 | 1.421 | Apr 2023 | - | | 1.421 | Continuing | Continuing | 1.201 |
| Intelligence, Surveillance, and Reconnaissance (ISR) Payload Development, Test and Integration | Various | Various : Various | 7.438 | 1.838 | Jul 2021 | - | | - | | - | | - | 0.000 | 9.276 | - |
| Next Generation Aviation Engineering Analysis (AEA) | C/CPFF | Various : Various | 24.389 | 3.599 | Jan 2021 | 2.886 | Jan 2020 | 17.978 | Nov 2022 | - | | 17.978 | Continuing | Continuing | - |
| Prior Year Funding - Completed Efforts | Various | Various : Various | 689.866 | - | | - | | - | | - | | - | 0.000 | 689.866 | - |
| Prior Year Funding - Classified Project Congressional Add | C/Various | Under Separate Cover : Under Separate Cover | 8.000 | - | | - | | - | | - | | - | 0.000 | 8.000 | - |
| | | **Subtotal** | 1,073.062 | 90.481 | | 28.672 | | 41.869 | | - | | 41.869 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EW-RFCM | C/Various | Various : Various | 29.853 | 3.805 | Jan 2021 | 1.171 | Jan 2022 | 1.030 | Jan 2023 | - | | 1.030 | Continuing | Continuing | - |
| C-130 SOF Common TF/TA SKR | C/CPIF | Various : Various | 19.976 | 1.932 | Dec 2020 | - | | - | | - | | - | 0.000 | 21.908 | - |
| Prior Year Funding - Completed Efforts | Various | Various : Various | 47.547 | - | | - | | - | | - | | - | 0.000 | 47.547 | - |
| | | **Subtotal** | 97.376 | 5.737 | | 1.171 | | 1.030 | | - | | 1.030 | Continuing | Continuing | N/A |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EW-RFCM | C/Various | Various : Various | 11.461 | 2.041 | Dec 2020 | 8.123 | Jan 2022 | 2.545 | Jan 2023 | - | | 2.545 | Continuing | Continuing | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C-130 SOF Common TF/ TA SKR | C/CPIF | Various : Various | 43.770 | 2.535 | Dec 2020 | - | | - | | - | | - | 0.000 | 46.305 | - |
| MH-47/MH-60 SOF Common TF/TA SKR | SS/FP | Various : Various | 127.306 | 0.709 | Jan 2021 | 0.628 | Jan 2022 | 0.718 | Nov 2022 | - | | 0.718 | Continuing | Continuing | - |
| Prior Year Funding - Completed Efforts | Various | Various : Various | 39.130 | - | | - | | - | | - | | - | 0.000 | 39.130 | - |
| | | **Subtotal** | 221.667 | 5.285 | | 8.751 | | 3.263 | | - | | 3.263 | Continuing | Continuing | N/A |

**Management Services ($ in Millions)**

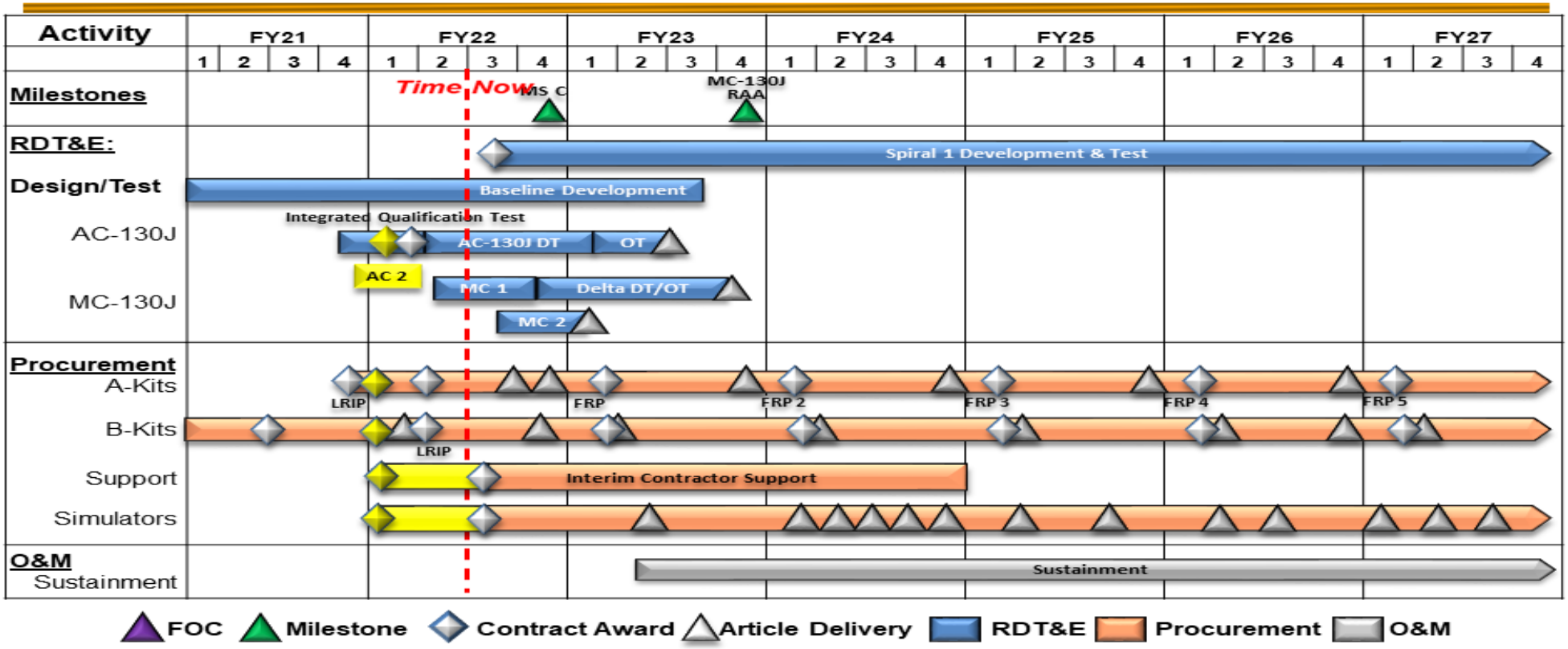
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prior Year Funding - Completed Efforts | Various | Various : Various | 57.332 | - | | - | | - | | - | | - | 0.000 | 57.332 | - |
| | | **Subtotal** | 57.332 | - | | - | | - | | - | | - | 0.000 | 57.332 | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 1,449.437 | 101.503 | | 38.594 | | 46.162 | | - | | 46.162 | Continuing | Continuing | N/A |

**Remarks**

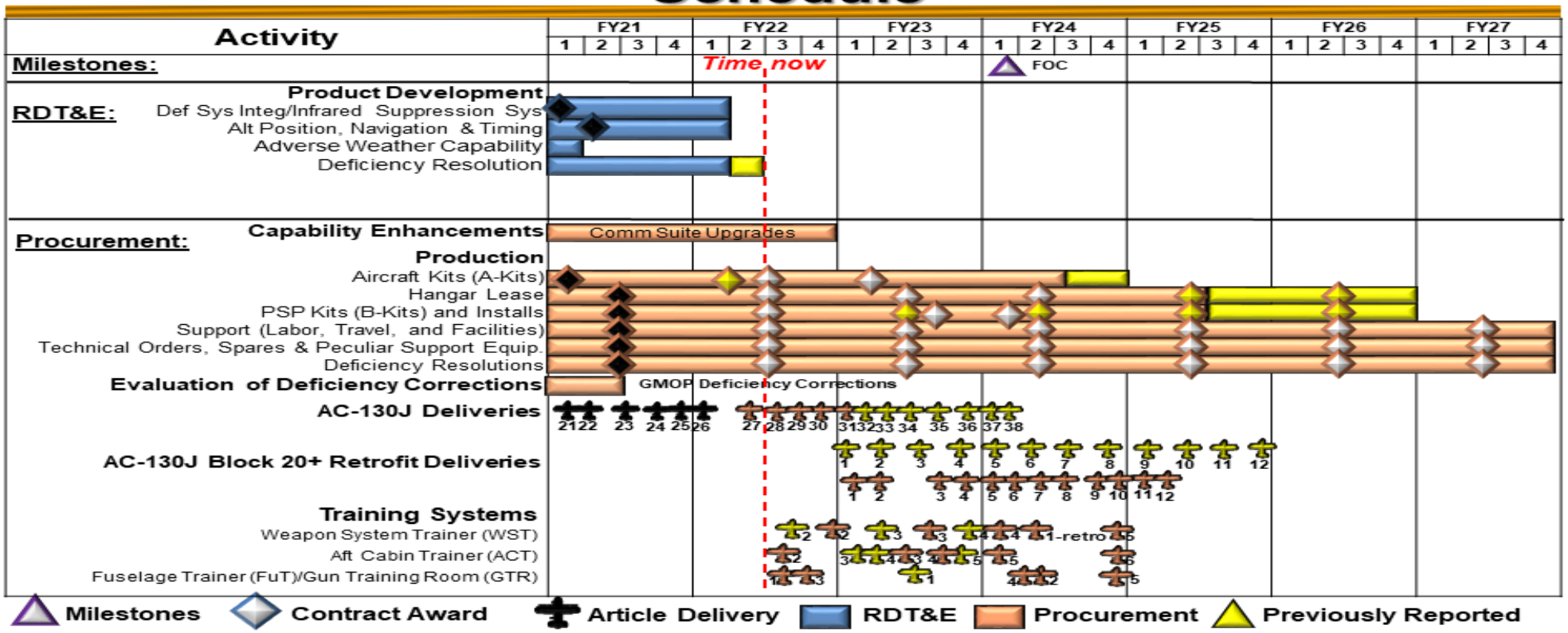
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# AC/MC-130J Radio Frequency Countermeasures Schedule



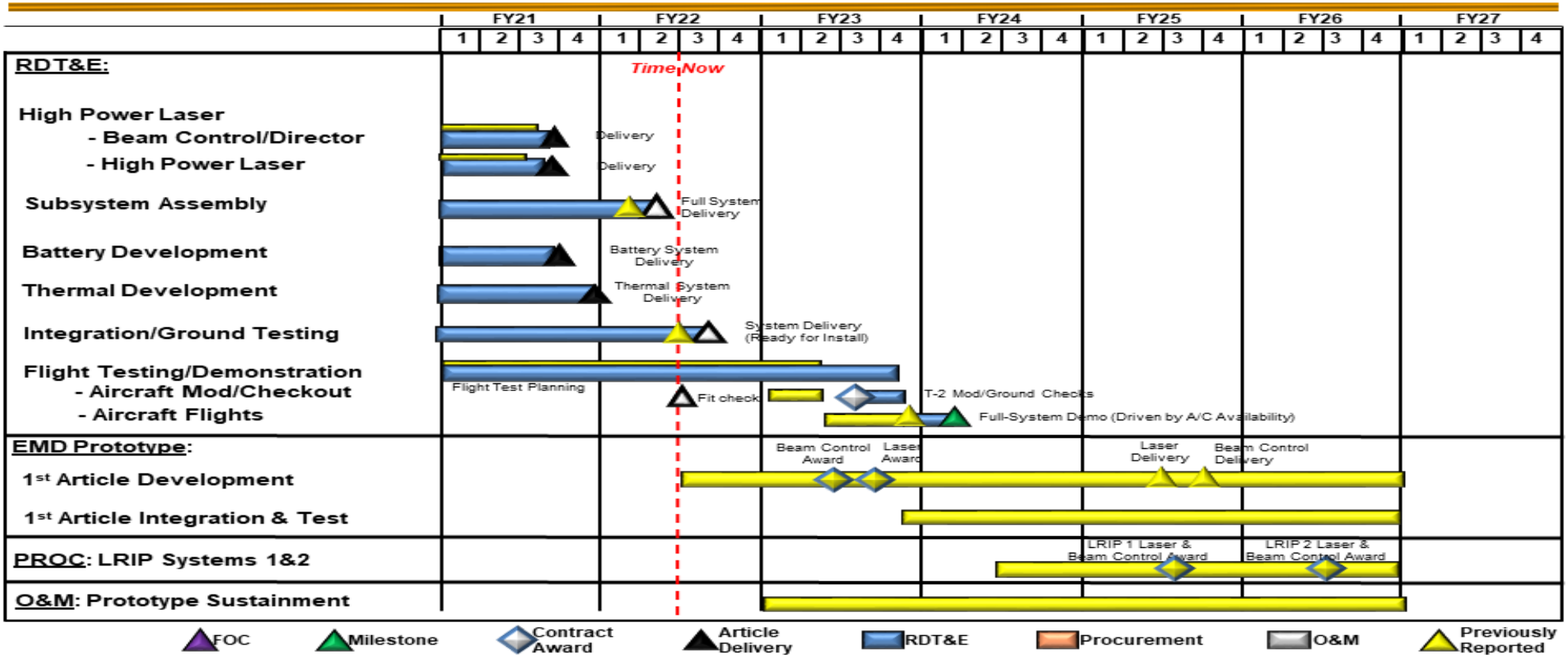
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# AC-130J/Precision Strike Package (PSP) for Special Operations Forces (SOF) Schedule



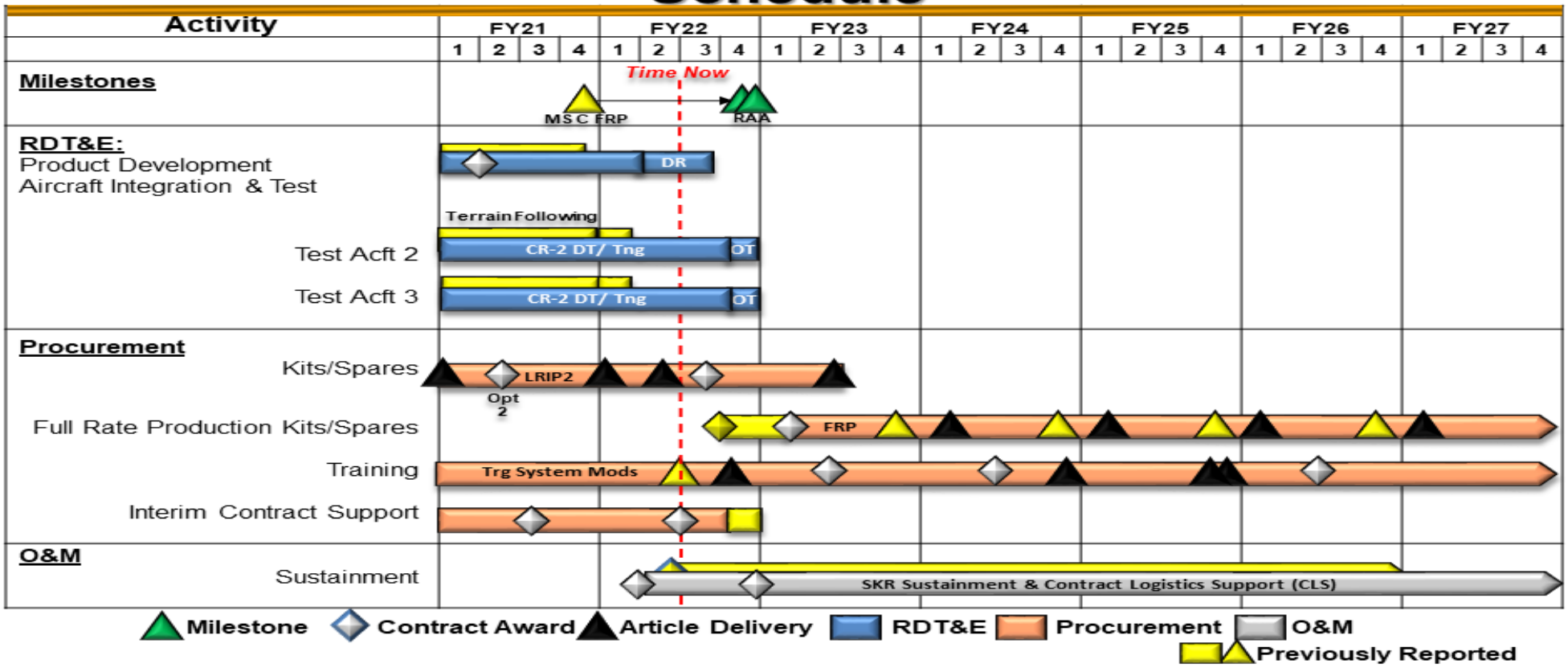
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# AC-130J High Energy Laser (HEL) Schedule



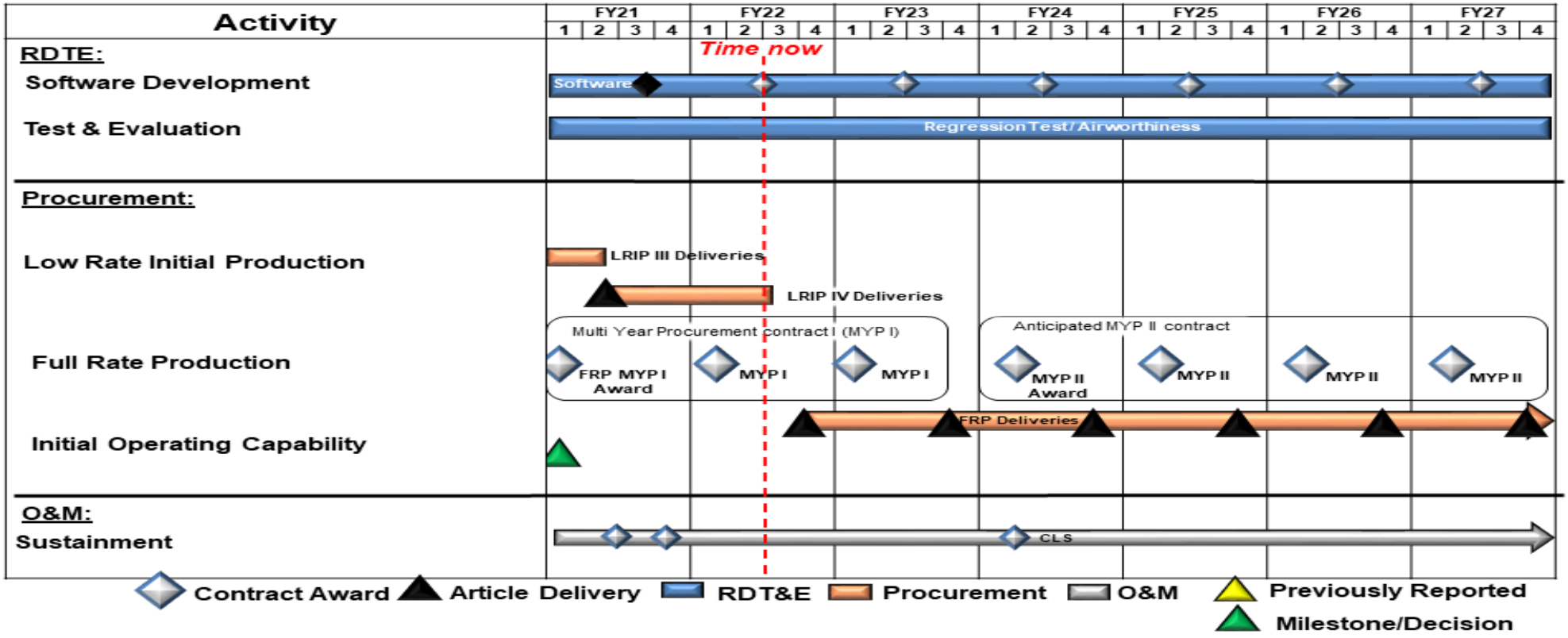
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# C-130 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR) Schedule



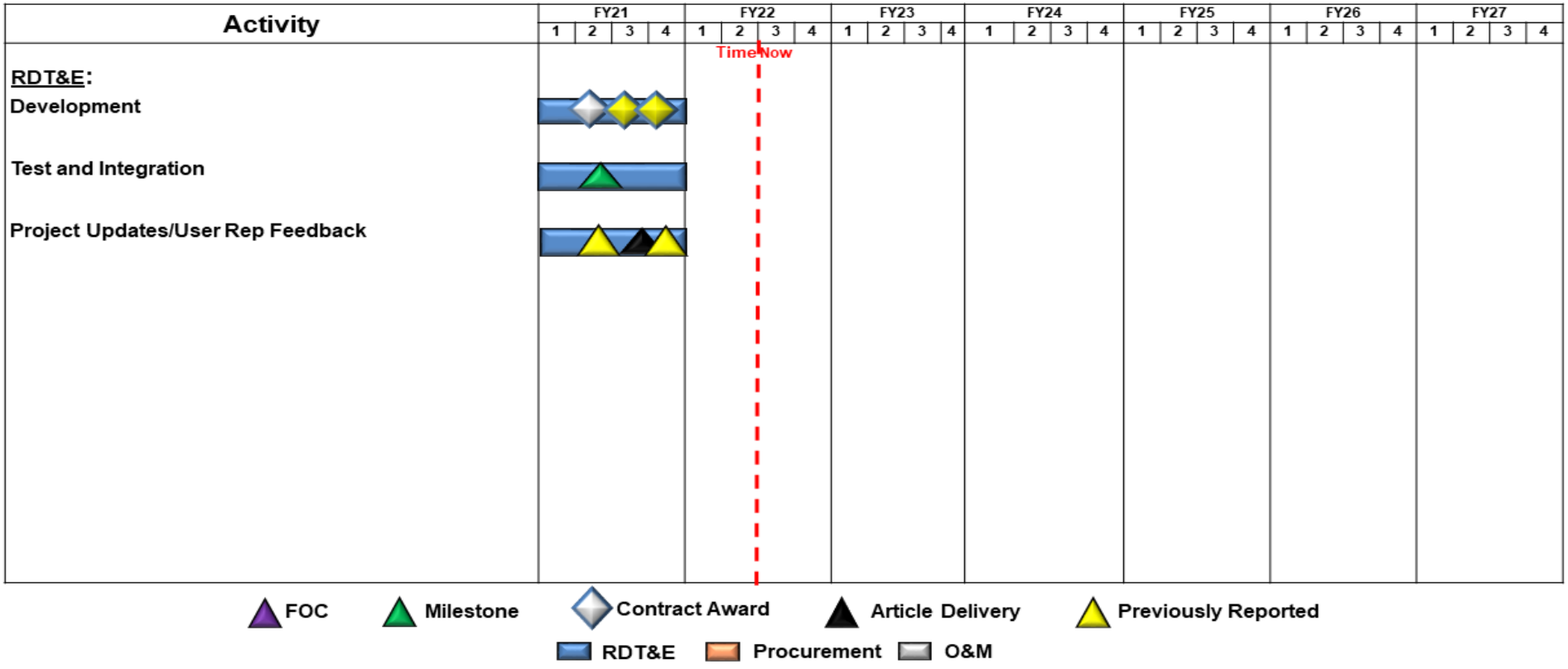
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# MH-47/MH-60 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR) Schedule



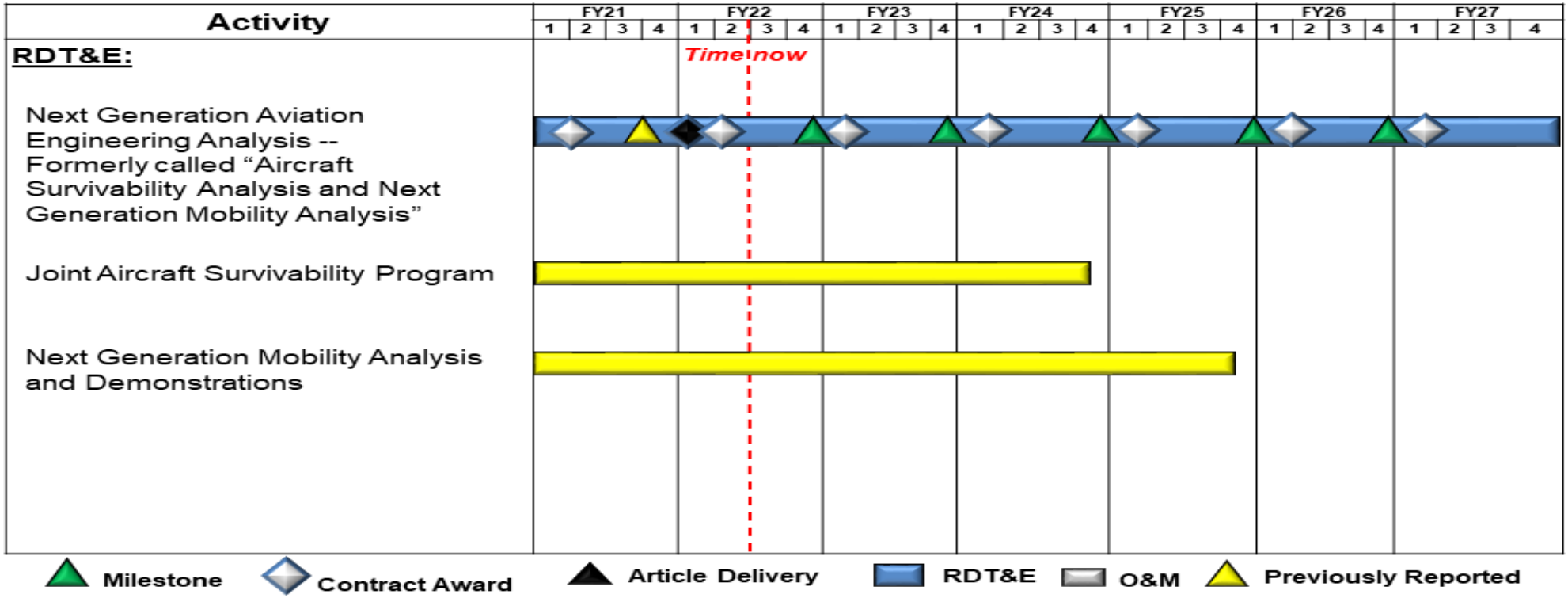
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# Intelligence, Surveillance, and Reconnaissance (ISR) Payload Schedule



| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

# Aviation Engineering Analysis (AEA) Schedule



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Electronic Warfare - Radio Frequency Countermeasures (EW-RFCM)*** | | | | |
| Spiral 1 Development | 3 | 2022 | 4 | 2027 |
| Product Development, Integration and Test | 1 | 2021 | 3 | 2023 |
| Developmental Test and Operational Test (DT/OT) AC-130J | 4 | 2021 | 3 | 2023 |
| DT/OT #1 MC-130J | 2 | 2022 | 4 | 2023 |
| ***Precision Strike Package (PSP) for SOF*** | | | | |
| Defensive Systems Product Development | 1 | 2021 | 2 | 2022 |
| Alternate Position, Navigation and Timing Product Development | 1 | 2021 | 2 | 2022 |
| Adverse Weather Product Development | 1 | 2021 | 1 | 2021 |
| Deficiency Resolution Product Development | 1 | 2021 | 2 | 2022 |
| ***PSP High Energy Laser (HEL)*** | | | | |
| PSP HEL 60kW Beam Control/Beam Director | 1 | 2021 | 3 | 2021 |
| PSP HEL High Power Laser | 1 | 2021 | 3 | 2021 |
| PSP HEL Subsystem Assembly | 1 | 2021 | 2 | 2022 |
| PSP HEL Battery Development | 1 | 2021 | 3 | 2021 |
| PSP HEL Thermal Development | 1 | 2021 | 4 | 2021 |
| PSP HEL Integration and Ground Testing | 1 | 2021 | 3 | 2022 |
| PSP HEL Flight Testing/Demonstration | 1 | 2021 | 1 | 2024 |
| ***C-130 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR)*** | | | | |
| Software Development | 1 | 2021 | 2 | 2022 |
| Development/Flight Testing | 1 | 2021 | 3 | 2022 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF100 / *Aviation Systems Advanced Development* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Operational Testing | 4 | 2022 | 4 | 2022 |
| ***MH-60/MH-47 SOF Common TF/TA SKR*** | | | | |
| Software Development | 1 | 2021 | 4 | 2027 |
| Test and Evaluation | 1 | 2021 | 4 | 2027 |
| ***Intelligence, Surveillance, and Reconnaissance (ISR) Payload*** | | | | |
| Development | 1 | 2021 | 4 | 2021 |
| Testing and Integration | 1 | 2021 | 4 | 2021 |
| Project Update/User Rep Feedback | 1 | 2021 | 4 | 2021 |
| ***Aviation Engineering Analysis (AEA)*** | | | | |
| Next Generation Aviation Engineering Analysis | 1 | 2021 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>SF200 / *CV-22* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SF200: *CV-22* | 64.061 | 13.011 | 6.932 | 11.695 | - | 11.695 | - | 9.727 | 19.064 | 19.445 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Project MDAP/MAIS Code:** 212

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

The CV-22 Osprey is a Special Operations Forces (SOF) variant of the Joint V-22 vertical medium lift, multi-mission aircraft. The CV-22 provides long range, high speed, infiltration, exfiltration, and resupply to SOF teams in hostile, denied, and politically sensitive areas. This is a capability not currently provided by other existing aircraft. The funding in this project supports integration, design, development, rapid prototyping and test to provide improved capabilities to include, but not limited to: more robust performance in situational awareness; Intelligence; Surveillance; and Reconnaissance (ISR); weapons; SOF communications; avionics; interoperability; defensive/survivability systems; speed and maneuverability; mission deployment and improved reliability and maintainability of the CV-22 platform.

CV-22 SOF Common Terrain Following/Terrain Avoidance (TF/TA) APQ-187 Silent Knight Radar (SKR): Provides long-range, night/adverse weather, clandestine penetration of medium-to-high threat areas for infiltration, exfiltration, and resupply of SOF forces. This more sustainable and capable radar replaces the obsolete APQ-186 terrain following/avoidance radar currently integrated on CV-22 aircraft.

CV-22 Block 20 Systems: Design, integrate, test, and validate enhancements required to meet SOF-unique mission requirements and correct deficiencies identified in previous testing. This incremental development will provide improved capabilities to include, but not limited to: robust performance in situational awareness; ISR, weapons; SOF communications; avionics; interoperability; defensive/survivability systems; speed and maneuverability; mission deployment; improved reliability and maintainability of the CV platform.

CV-22 Reliability Improvements: Design, integrate, test and validate system, and sub-system, reliability improvement enhancements to meet required aircraft availability and operational requirements. This incremental development will accelerate the fielding and retrofit of system design improvements directly increasing CV-22 fleet readiness and aircraft availability.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** CV-22 SOF Common TF/TA SKR | 13.011 | 4.851 | 11.695 |
| ***Description:*** Provides long-range, night/adverse weather, clandestine penetration of medium-to-high threat areas for infiltration, exfiltration, and resupply of SOF forces. This more sustainable and capable radar replaces the obsolete APQ-186 Multi-Mode Radar (MMR) currently integrated on CV-22 aircraft. This effort includes development of the CV-22 SOF Common TF/TA SKR Operational Flight Program (OFP) software, and development of CV-22 platform software and hardware to support integration and test. | | | |
| ***FY 2022 Plans:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF200 / *CV-22* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Continue integration/testing of CV-22 SOF Common TF/TA SKR OFP.<br>***FY 2023 Plans:***<br>Completes integration/testing of CV-22 SOF Common TF/TAR SKR OFP.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $6.844 million due to maintain and operate a dedicated CV-22 test aircraft for the SKR integration and OFP flight test program. | | | |
| ***Title:*** CV-22 Reliability Improvements<br>***Description:*** Improves platform reliability and maintainability to meet fleet aircraft availability requirements. Efforts include design and re-design enhancements, and acceleration of field integration.<br>***FY 2022 Plans:***<br>Conduct and complete Non-Recurring Engineering (NRE) required to accelerate improved Block 3 Engine Turbine upgrades.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Decrease of $2.081 million is due to completing NRE to accelerate improved Block 3 Engine Turbine upgrades. | - | 2.081 | - |
| **Accomplishments/Planned Programs Subtotals** | 13.011 | 6.932 | 11.695 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PROC/1000CV22: *CV-22 SOF Modification* | 58.033 | 46.572 | 75.629 | - | 75.629 | 113.267 | 107.335 | 88.225 | 86.931 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

When possible, rapid prototyping will be incorporated in the acquisition strategies below to develop, demonstrate, and evaluate residual operational capabilities.

The SKR was developed by the United States Special Operations Command (USSOCOM) to provide a SOF Common TF/TA capability for SOF aircraft. The SKR replaces the obsolete APQ-186 TF/TA multimode radar on the CV-22. The acquisition strategy for the CV-22 SOF Common TF/TA SKR program is to procure radar units and radar software modifications through the USSOCOM SKR program management office, buy aircraft modification kits, and integrate SKR into CV-22 aircraft using a mixture of both sole source and competitive contracts.

The CV-22 Reliability Improvement projects will consist of a mix of competitive and sole-source awards.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>SF200 / *CV-22* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CV-22 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR) - Operational Flight Program (OFP) Development | C/CPFF | Various : Various | 32.995 | 6.087 | Nov 2020 | 2.571 | Jan 2022 | 1.000 | Feb 2023 | - | | 1.000 | Continuing | Continuing | - |
| CV-22 SOF Common TF/ TA SKR- Integration | C/CPFF | Various : Various | 25.942 | 3.982 | Nov 2020 | 1.310 | Dec 2021 | 1.685 | Feb 2023 | - | | 1.685 | Continuing | Continuing | - |
| CV-22 Block 20 Systems | Various | Various : Various | 0.337 | - | | - | | - | | - | | - | 0.000 | 0.337 | - |
| CV-22 Reliability Improvements | C/Various | Various : Various | - | - | | 1.081 | Jan 2022 | - | | - | | - | Continuing | Continuing | - |
| | | **Subtotal** | 59.274 | 10.069 | | 4.962 | | 2.685 | | - | | 2.685 | Continuing | Continuing | N/A |

**Test and Evaluation ($ in Millions)**

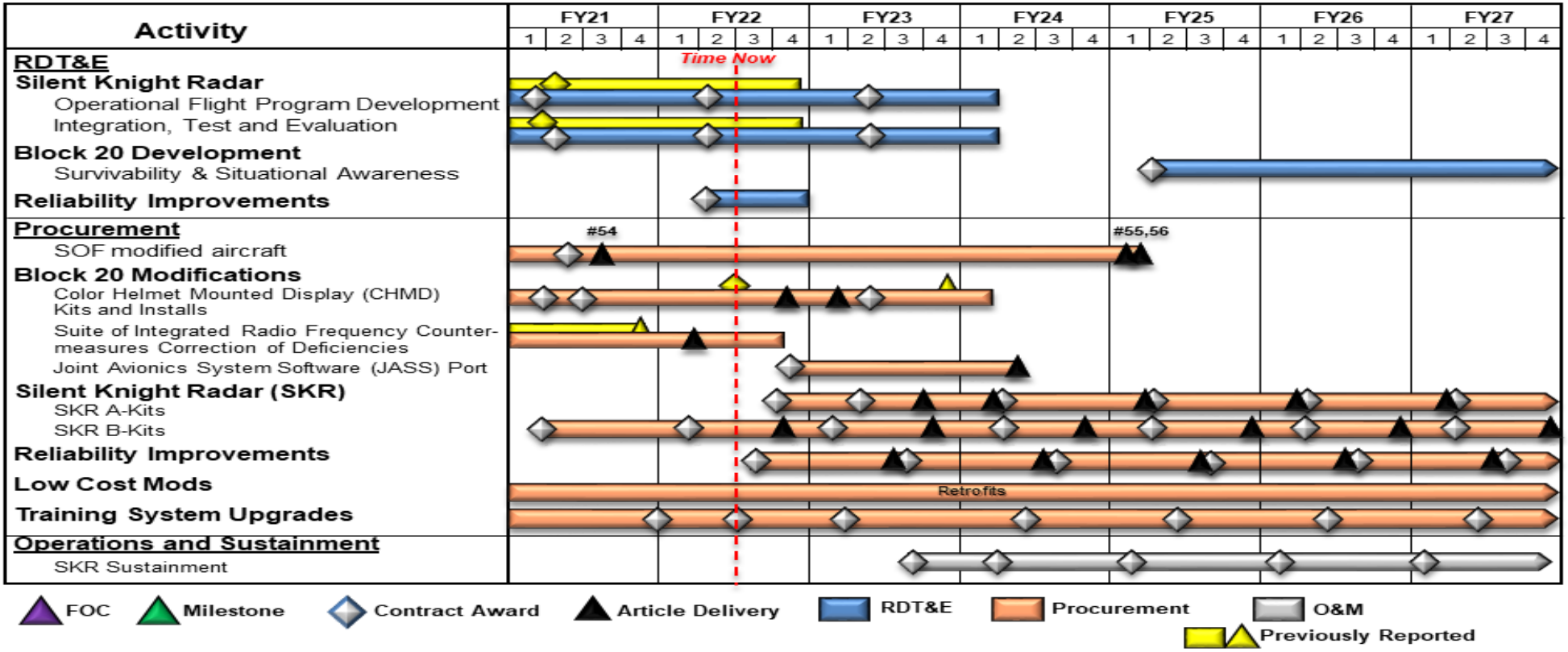
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CV-22 SOF Common TF/ TA SKR - OFP | C/CPFF | Various : Various | 2.582 | 2.412 | Nov 2020 | 0.776 | Dec 2021 | 1.200 | Feb 2023 | - | | 1.200 | Continuing | Continuing | - |
| CV-22 SOF Common TF/ TA SKR- Integration | C/CPFF | Various : Various | 2.205 | 0.530 | Nov 2020 | 0.194 | Dec 2021 | 7.810 | Feb 2023 | - | | 7.810 | Continuing | Continuing | - |
| CV-22 Reliability Improvements Test and Evaluation | C/Various | Various : Various | - | - | | 1.000 | Jan 2022 | - | | - | | - | Continuing | Continuing | - |
| | | **Subtotal** | 4.787 | 2.942 | | 1.970 | | 9.010 | | - | | 9.010 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 64.061 | 13.011 | | 6.932 | | 11.695 | | - | | 11.695 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF200 / *CV-22* |

# CV-22 Schedule



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF200 / *CV-22* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***CV-22*** | | | | |
| SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR) - Operational Flight Program (OFP) Development | 1 | 2021 | 1 | 2024 |
| SOF Common TF/TA SKR - Radar Integration, Test & Evaluation | 1 | 2021 | 1 | 2024 |
| Block 20 Survivability & Situational Awareness | 1 | 2025 | 4 | 2027 |
| Reliability Improvements Test and Evaluation | 2 | 2022 | 4 | 2022 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>SF300 / *Armed Overwatch/Targeting* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SF300: *Armed Overwatch/ Targeting* | 0.000 | 24.088 | 22.952 | 1.200 | - | 1.200 | 0.800 | - | - | - | 0.000 | 49.040 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

Armed Overwatch provides Special Operations Forces (SOF) with crewed deployable, affordable, and sustainable aircraft systems capable of executing Close Air Support (CAS), Precision Strike, and Armed Intelligence, Surveillance & Reconnaissance (Armed ISR) requirements in austere and permissive environments for use in Irregular Warfare operations to align with the National Defense Strategy priorities. The funding in this project supports integration and testing of SOF-unique capabilities and aircraft certification efforts.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Armed Overwatch/Targeting | 24.088 | 22.952 | 1.200 |
| ***Description:*** The funding in this project supports integration and testing of SOF-unique capabilities and aircraft certification efforts.<br><br>***FY 2022 Plans:***<br>Initiate integration and testing of SOF-unique capabilities and aircraft certification efforts.<br><br>***FY 2023 Plans:***<br>Continues integration, testing, and aircraft certification efforts and conducts Operational Test and Evaluation (OT&E) prior to Full Rate Production award.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Decrease of $21.752 million is due to the majority of certification and verification testing activities being completed with FY 2022 Research, Development, Test, and Evaluation funds. | | | |
| **Accomplishments/Planned Programs Subtotals** | 24.088 | 22.952 | 1.200 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PROC/0201ARMOWT: *Armed Overwatch/Targeting* | 21.000 | 166.000 | 246.000 | - | 246.000 | 223.000 | 220.792 | 229.234 | 249.567 | Continuing | Continuing |

**Remarks**

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF300 / *Armed Overwatch/Targeting* |

**D. Acquisition Strategy**

Armed Overwatch/Targeting: These technologies will be pursued through industry partners via rapid prototyping, transitioning to the Major Capability Acquisition pathway at Milestone C. Flight demonstrations were conducted in FY 2021 and results were used to determine that a solicitation for a follow-on production contract is in the best interest of the Government. Production contract to be awarded to the industry partner with the best value proposal in the 4th quarter of FY 2022 with certification and verification testing to begin immediately following award.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF300 / *Armed Overwatch/Targeting* |

**Product Development ($ in Millions)**

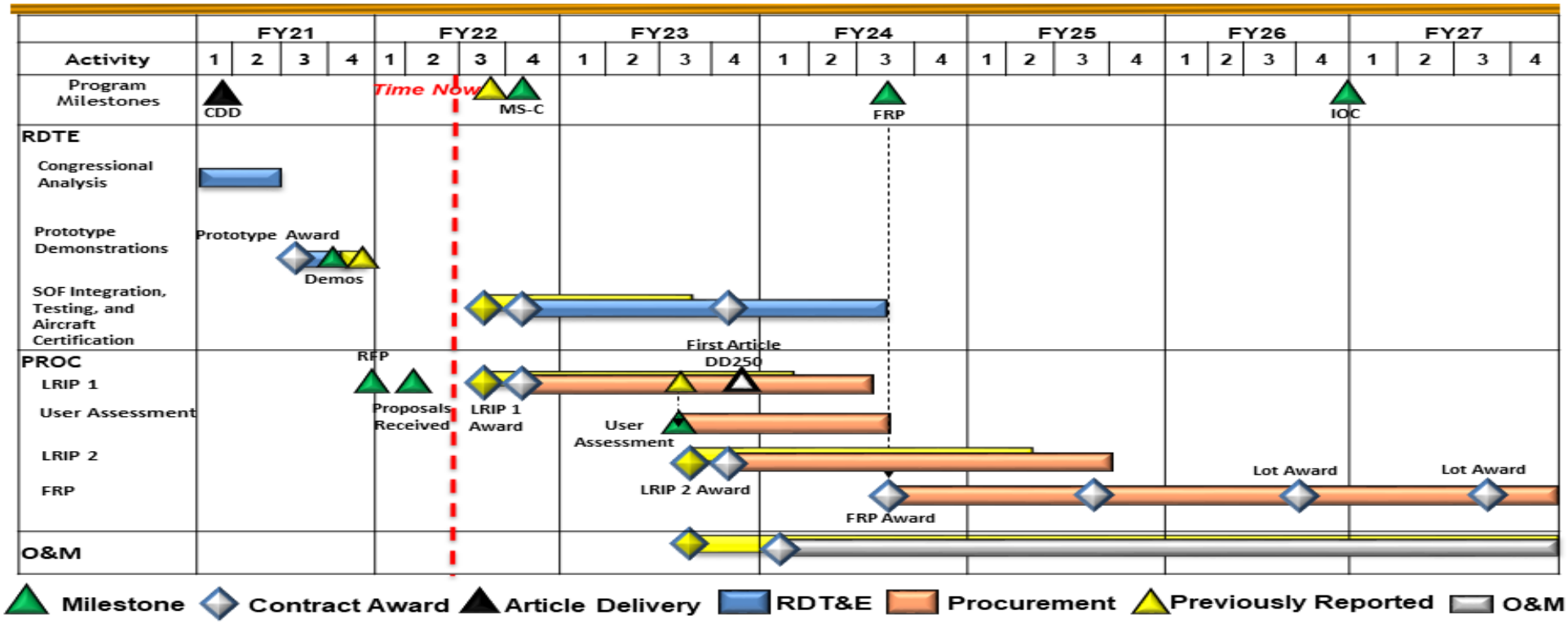
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Armed Overwatch/ Targeting: Prototype Testing/Demonstration | C/FFP | Various : Various | - | 24.088 | May 2021 | - | | - | | - | | - | 0.000 | 24.088 | - |
| Armed Overwatch/ Targeting: Aircraft Certification and SOF Unique Integration | C/FFP | Various : Various | - | - | | 22.952 | Jul 2022 | 1.200 | Jul 2023 | - | | 1.200 | 0.800 | 24.952 | - |
| | | **Subtotal** | - | 24.088 | | 22.952 | | 1.200 | | - | | 1.200 | 0.800 | 49.040 | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | - | 24.088 | | 22.952 | | 1.200 | | - | | 1.200 | 0.800 | 49.040 | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF300 / *Armed Overwatch/Targeting* |

# Armed Overwatch Schedule



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>SF300 / *Armed Overwatch/Targeting* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Armed Overwatch/Targeting*** | | | | |
| Congressional Analysis | 1 | 2021 | 2 | 2021 |
| Prototype Testing/Demonstration | 3 | 2021 | 4 | 2021 |
| SOF Integration, Testing, and Aircraft Certification | 4 | 2022 | 3 | 2024 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>S750 / *Mission Training and Preparation Systems* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S750: *Mission Training and Preparation Systems* | 51.441 | 9.272 | 10.227 | 13.848 | - | 13.848 | 17.430 | 16.804 | 13.530 | 13.800 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project funds the definition, design, development, prototyping, integration, and testing of Mission Training and Preparation Systems (MTPS) to support training, avoid obsolescence, and maintain simulator concurrency with weapon system configurations; support mission planning and rehearsal systems enhancements required to meet Special Operations Forces (SOF)-unique mission requirements and correct deficiencies identified in previous testing; and support mission planning and rehearsal capabilities in current MTPS. The MTPS project also includes program management, systems engineering, configuration management, architecture development, risk reduction, and trade study initiatives, as well as initiatives to assure interoperability and commonality between diverse SOF training systems.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** Special Operations Mission Planning and Execution (SOMPE) | 9.272 | 10.227 | 10.941 |
| ***Description:*** The SOMPE project develops, integrates, tests, and validates software enhancements required to meet SOF-unique requirements for, and correct deficiencies to, mission planning, preview, and execution software tools to support all phases of SOF operations from deliberate to time-critical. SOMPE automates time-sensitive planning activities and provides enhanced situational awareness during mission execution. SOMPE provides the interoperable environment for SOF adaptive planning to integrate global operations including, but not limited to, precision strike software, digital navigation, and Unmanned Aerial Systems (UAS) command and control. This project also provides the integration of SOMPE with multi-dimensional visualization systems, providing immersive mission rehearsal in minimal timeframes from the SOMPE mission plan. SOMPE is embedded in the United States Special Operations Command (USSOCOM) Headquarters, Theater Special Operations Commands (TSOC), Joint Special Operations Task Forces, Joint Special Operations Aviation Components, SOF warfighters, and SOF warfighter platforms. | | | |
| ***FY 2022 Plans:***<br>Continue development of software applications to address increased SOF-unique aviation, ground and maritime mission planning requirements; data transfer software from mission planning systems to SOF helicopters, airplanes, and simulator rehearsal systems; and automated performance models and performance prediction software. Continue updates to mission planning, data transfer, and performance software. Continue development of software applications for smaller mobile computer devices (tablets, smart phones, etc.) | | | |
| ***FY 2023 Plans:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S750 / *Mission Training and Preparation Systems* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| The SOMPE program is transitioning to the Software Acquisition Pathway, defined in DoDI 5000.87 and will converge independently developed products by leveraging the agile ecosystem and environment of the TAK Product Center to accelerate development of incremental releases of software with direct user input.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $0.714 million is to support convergence of the TAK software across the air, land, and sea battlespace; where tactical situational awareness is critical to the Military Decision-Making Process. | | | |
| ***Title:*** Training Transformation Simulator Block Upgrade-Fixed Wing (SBUDF)<br>***Description:*** The SBUDF program develops and integrates training innovation and transformation solutions across the Air Force Special Operations Command (AFSOC) fixed-wing training device portfolio, to include AC-130J, MC-130J, CV-22, U-28, and C-146. These efforts include further developing and integrating augmented reality, virtual reality, and mixed reality technology and applying the technology to SOF-unique missions and platforms in support of combat readiness and SOF operator mission qualification. These initiatives are not intended to replace existing traditional AFSOC training devices and full motion simulators, but will rather mitigate current training limitations as well as enhance and complement existing training capabilities. This program will also support the development of advanced instructor and student feedback systems and artificial intelligence capabilities to increase the fidelity, quality, and efficiency of the AFSOC training pipeline.<br>***FY 2023 Plans:***<br>Initiates the SBUDF training innovation and transformation program with the development of AC-130J aircrew and CV-22 aircrew and maintenance virtual and augmented reality mission training devices.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $2.907 million is develop virtual training environments by SBUDF in FY 2023. | - | - | 2.907 |
| **Accomplishments/Planned Programs Subtotals** | 9.272 | 10.227 | 13.848 |

**C. Other Program Funding Summary ($ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

In accordance with DoDI 5000.87, the SOMPE project will continue a transformation to execute in accordance with the Software Acquisition Pathway. Execution uses a combination of reimbursable working capital funds for technical leadership of the DevSecOps environment; and contract awards. Contracts will leverage existing sole source awards for Special Operations-Peculiar capability development; potential Commercial Service Offerings for Commercial Off the Shelf Software; and a combination of existing Science Engineering Technology and Acquisition (SETA) contracts and full and open competition for software development, integration, test,

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S750 / *Mission Training and Preparation Systems* |

fielding, and sustainment. The multiple contracts and Government working capital organizations enable the Program to continuously prioritize and balance work across the product mission areas to meet the needs of users as we shift to a new paradigm of a tighter feedback loop under the Software Acquisition Pathway.

The SBUDF program will utilize Naval Surface Warfare Center (NSWC) Dahlgren Division as the Government lead system integrator, while incorporating commercial off-the-shelf hardware/software solutions and competitive as well as sole source contracts to support spiral development of training transformation initiatives.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S750 / *Mission Training and Preparation Systems* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Special Operations Mission Planning and Execution (SOMPE) Software Development, Security, Operations (DevSecOps) | Various | Various : Various | 41.512 | 7.361 | Jan 2021 | 8.204 | Jan 2022 | 8.971 | Jan 2023 | - | | 8.971 | Continuing | Continuing | - |
| Augmented Reality/Virtual Reality Device Spiral Development Simulator Upgrade (SBUD) | Various | Various : Various | - | - | | - | | 2.907 | Mar 2023 | - | | 2.907 | Continuing | Continuing | - |
| | | **Subtotal** | 41.512 | 7.361 | | 8.204 | | 11.878 | | - | | 11.878 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOMPE Software | MIPR | Special Operations Mission Planning Office : Various | 3.111 | 0.375 | Feb 2021 | 0.386 | Feb 2022 | - | | - | | - | Continuing | Continuing | - |
| | | **Subtotal** | 3.111 | 0.375 | | 0.386 | | - | | - | | - | Continuing | Continuing | N/A |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOMPE Software | C/CPFF | TBD : Various | 6.818 | 1.536 | Jan 2021 | 1.637 | Jan 2022 | 1.970 | Nov 2022 | - | | 1.970 | Continuing | Continuing | - |
| | | **Subtotal** | 6.818 | 1.536 | | 1.637 | | 1.970 | | - | | 1.970 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 51.441 | 9.272 | | 10.227 | | 13.848 | | - | | 13.848 | Continuing | Continuing | N/A |

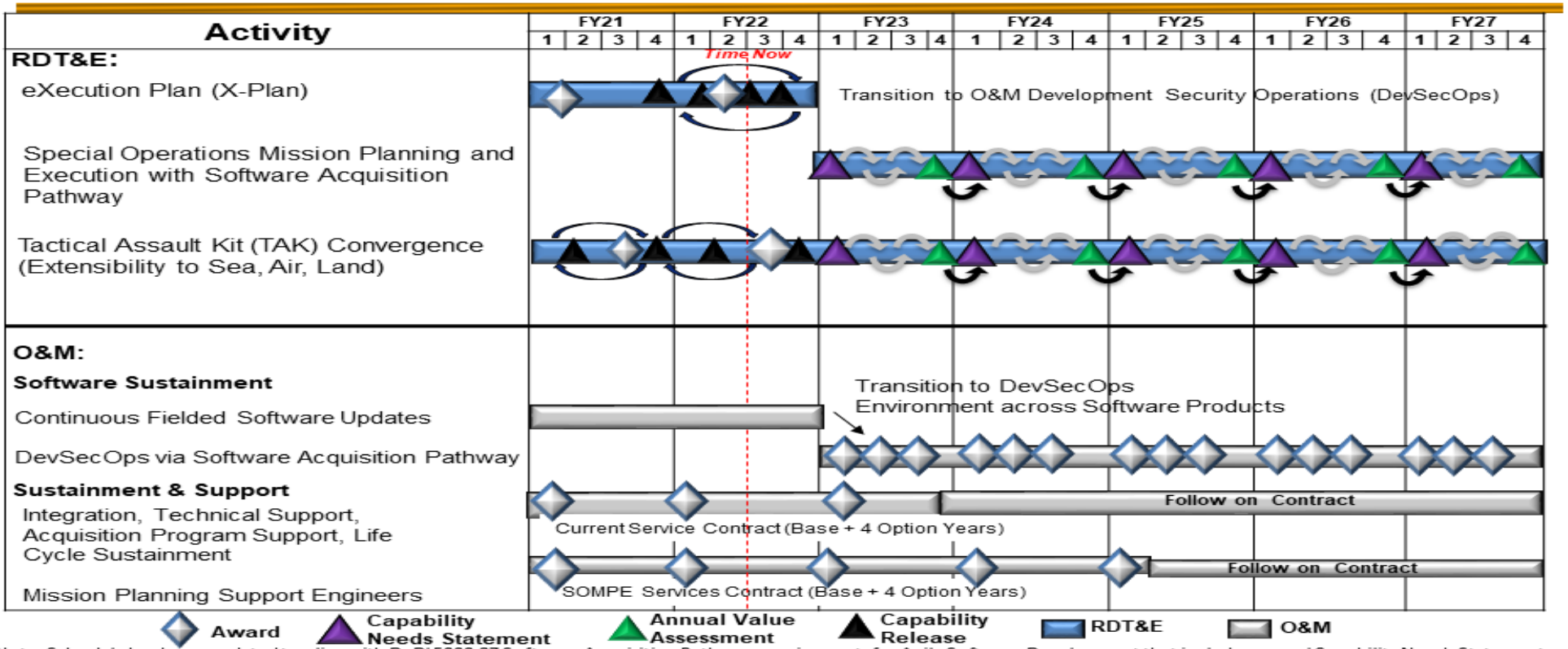
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>S750 / *Mission Training and Preparation Systems* | |

| | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S750 / *Mission Training and Preparation Systems* |

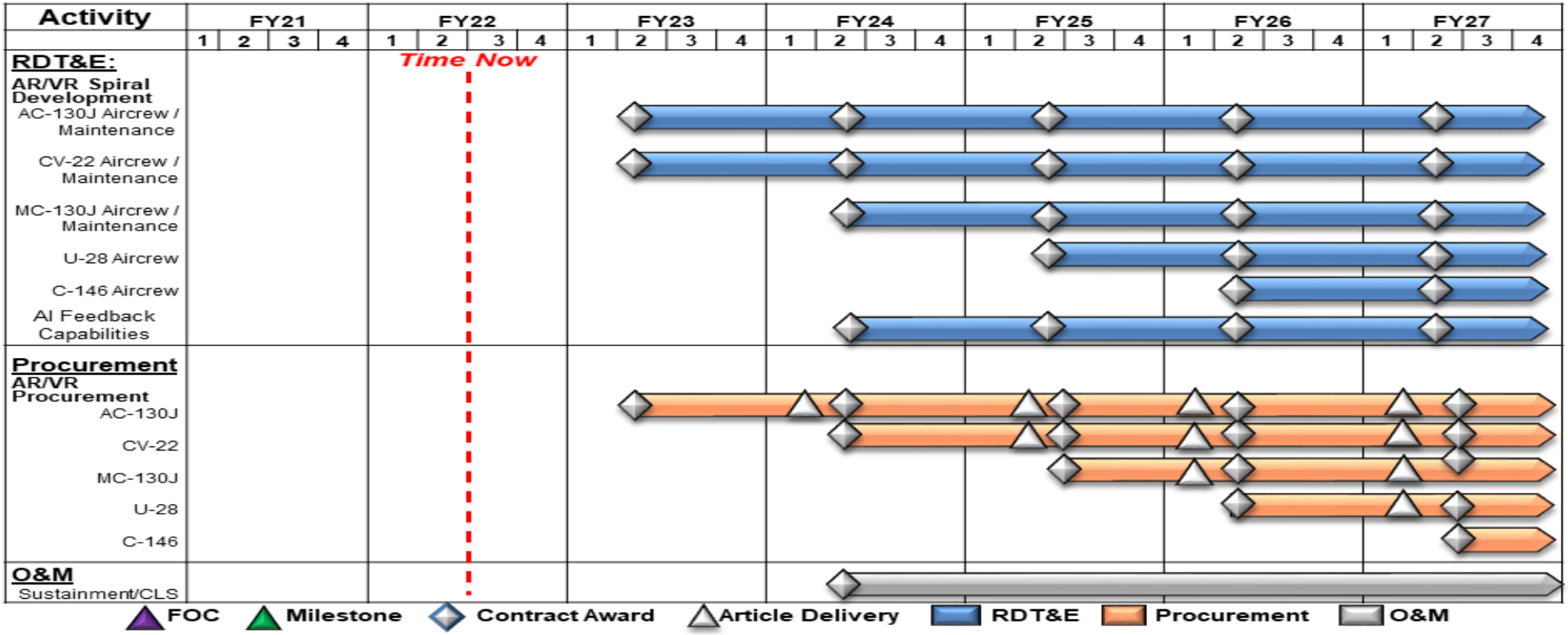
# Special Operations Mission Planning and Execution (SOMPE) Schedule




Note: Schedule has been updated to align with DoDI 5000.87 Software Acquisition Pathway requirements for Agile Software Development that includes annual Capability Needs Statements and Value Assessments to inform software development for SOCOM's Mission Planning Systems.

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S750 / *Mission Training and Preparation Systems* |

# Training Transformation Simulator Block Upgrade-Fixed Wing (SBUDF) Schedule



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S750 / *Mission Training and Preparation Systems* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Special Operations Mission Planning and Execution (SOMPE)*** | | | | |
| eXecution Plan (XPlan) | 1 | 2021 | 4 | 2022 |
| SOMPE with Software Acquisition Pathway | 1 | 2023 | 4 | 2027 |
| Tactical Assault Kit (TAK) Convergence (Extensibility to Sea, Air, Land) | 1 | 2021 | 4 | 2027 |
| ***Training Transformation Simulator Block Upgrade - Fixed Wing (SBUDF)*** | | | | |
| Augmented Reality/Virtual Reality (AR/VR) Device Spiral Development AC-130J Aircrew / Maintenance | 2 | 2023 | 4 | 2027 |
| AR/VR Device Spiral Development CV-22 Aircrew / Maintenance | 2 | 2023 | 4 | 2027 |
| AR/VR Device Spiral Development MC-130J Aircrew / Maintenance | 2 | 2024 | 4 | 2027 |
| AR/VR Device Spiral Development U-28 Aircrew | 2 | 2025 | 4 | 2027 |
| AR/VR Device Spiral Development C-146 Aircrew | 2 | 2026 | 4 | 2027 |
| Artificial Intelligence Feedback Capabilities | 2 | 2024 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>S875 / *AC/MC-130J* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S875: *AC/MC-130J* | 95.574 | 51.783 | 52.045 | 40.757 | - | 40.757 | 65.496 | 63.116 | 17.184 | 17.528 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

The AC/MC-130J project funds core Special Operations Forces (SOF)-unique modifications to replace aging/retired AC-130H Spectre, AC-130W Stinger II, AC-130U Spooky, MC-130E Combat Talon I, MC-130P Combat Shadow, MC-130H Combat Talon II aircraft. The 8 AC-130H Spectre, 12 AC-130W Stinger II and 17 AC-130U Spooky airframes will be replaced with MC-130J aircraft modified with the Precision Strike Package (PSP) to achieve the AC-130J configuration. The AC-130J aircraft will provide close air support, air interdiction, and armed reconnaissance capability. The 14 MC-130E Combat Talon I, 23 MC-130P Combat Shadow, and 24 MC-130H Combat Talon II airframes will be replaced by MC-130J Commando II aircraft with SOF mission modifications. The MC-130J Commando II aircraft with SOF mission modifications provide clandestine single or multi-ship low-level aerial refueling for special operations helicopters and CV-22 aircraft; and conduct airdrops of leaflets, small special operations teams, resupply bundles, and combat rubber raiding craft. The Air Force procures and fields the basic aircraft, common support equipment, and trainers for the United States Special Operations Command (USSOCOM). Incremental upgrade and agile software development approaches will be used to integrate SOF capabilities onto the aircraft and training systems. SOF capabilities include, but are not limited to: Airborne Mission Networking (AbMN); data fusion; threat detection and avoidance; integrated Terrain Following/Terrain Avoidance (TF/TA); electronic warfare and embedded training. Integrating and automating SOF mission systems that deliver these capabilities is critical to fielding SOF-capable AC/MC-130J aircraft to recapitalize Air Force Special Operations Command's legacy C-130 fleet.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** MC-130J AbMN | 2.590 | - | - |
| ***Description:*** The AbMN provides aircrew and mission personnel aboard the MC-130J aircraft, with the ability to send and receive mission-critical data to/from tactical and operational nodes in the battlespace. Capabilities include, but are not limited to, secure Line-of-Sight (LOS)/Beyond Line-of-Sight (BLOS) voice/data communications, friendly force identification, mission tracking, threat identification, full-motion video, collaboration, chat, e-mail, integrated tactical map and data links. The AbMN enables SOF to streamline command and control, improve situational awareness, and reduce operational risk through real time exchange of digital information among aircraft, SOF components, and other tactical and operational nodes. | | | |
| ***Title:*** Integrated Tactical Mission Systems (ITMS) | 49.193 | 52.045 | 40.757 |
| ***Description:*** The ITMS program increases operational crew performance and aircraft survivability by integrating the AC/MC-130J green aircraft and multiple SOF mission systems as an interoperable system-of-systems. Automated software capabilities will be developed, integrated, and tested with SOF-peculiar and green aircraft flight information, displays, and controls through the Special Mission Systems (SMS) suite. By increasing system-of-systems data interoperability through an Open Mission Systems (OMS) compliant Modular Open System Architecture (MOSA), an agile software development infrastructure will be employed to integrate multiple subsystems and continuously deliver automated software capabilities. Capabilities include, but are not limited | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S875 / *AC/MC-130J* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| to: automated route replanning; tactical flight management; integrated aircraft defensive systems; defensive countermeasures; and embedded training. The NextGen Special Mission Processor (SMP) resolves current diminishing manufacturing sources issues with a MOSA compliant design to perform central processing for ITMS software. The ITMS enables dynamic operations with integrated real-time information, automation, and decision making data for safe TF/TA flight and mission execution (MC-130J aircraft) and seamless employment of the Precision Strike Package (PSP) on AC-130J aircraft.<br><br>***FY 2022 Plans:***<br>Continue to identify, prototype, and demonstrate modern OMS capabilities of: Pre-mission software; common roll-on roll-off payload interfaces; enhanced cybersecurity management; and AC-130J weapon system planning and management. Continue capability maturation of production and fielded software services through Development, Security, and Operations (DevSecOps) supported by a cloud-hosted software integration and test environment. Continue development, demonstration, and test of common interfaces to integrate legacy, current, and future mission systems into an inter-operable system architecture. Continue Tactical Flight Management System (TFMS), Automated Route Replanner (ARR), and Defensive Countermeasures (DCM) capability development and demonstration. Continue capability replication, performance, and test with the AC-130J PSP and Battle Management System (BMS) software. Continue the MC-130J Tactical Map enhancements. Complete the NextGen SMP qualification testing, technical data updates, and perform correction of deficiencies.<br>***FY 2023 Plans:***<br>Continues to identify, prototype, demonstrate, and enhance modern OMS capabilities of: Pre-mission software; common payload interfaces; enhanced cybersecurity management software; and AC-130J weapons planning and management system. Continues capability maturation of production and fielded software services through DevSecOps supported by a cloud-hosted software integration and test environment. Continues development, demonstration, and test of common interfaces to integrate legacy, current, and future mission systems into an inter-operable systems architecture. Releases the MC-130J Tactical Map, TFMS and ARR minimum viable products and continues software enhancements. Continues TFMS and DCM capability development, integration, and demonstration for MC-130J with common attributes with AC-130J. Continues capability demonstration, and DevSecOps software enhancements for MC-130J avionics and common applications of BMS in support of multi-role aircraft capabilities.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Decrease of $11.288 million is due to completion of Next Gen SMP qualification testing and emerging critical Command requirements. | | | |
| **Accomplishments/Planned Programs Subtotals** | 51.783 | 52.045 | 40.757 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S875 / *AC/MC-130J* |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PROC/2012C130J: *AC/MC-130J* | 150.883 | 205.216 | 225.569 | - | 225.569 | 319.754 | 310.229 | 341.280 | 388.428 | Continuing | Continuing |
| • PROC/1202PSP: *Precision Strike Package* | 233.111 | 165.224 | 57.450 | - | 57.450 | 108.497 | 111.346 | 107.500 | 65.473 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

As a core strategy, rapid prototyping has been incorporated in the acquisition strategies below to develop, demonstrate and evaluate residual operational capabilities.

MC-130J AbMN: Award sole source Cost-Plus-Fixed-Fee contract to develop a battlespace information exchange system for the MC-130J consisting of Government/ Commercial-off-the-shelf communications and computing hardware and Government/developmental software. This approach leverages portions of the AC-130J gunship infrastructure design applicable to the MC-130J. After completing developmental and operational flight testing, award a sole source contract for Low Rate Initial Production (LRIP) followed by a competitive Firm-Fixed Price (FFP) contract for production, aircraft integration, and fielding.

ITMS: Award two sole source contracts to key prime integrators to develop and maintain an open mission system compliant MOSA, integrate legacy subsystems into the common architecture, support government on-boarding of 3rd party capabilities, and modernize software services through DevSecOps. Perform operationally driven rapid prototyping and demonstrations to evaluate new technology for system integration while informing changes to tactics, techniques, and procedures. Government lead development of virtual environment to enable collaborative integration of modular software services procured through competitive, sole source contracts, and use of open mission system compliant standards for hardware and software architecture, software, services, and future subsystems. Perform combined government and contractor integration, lab, and flight development/operational testing.

The U.S. Air Force procures the basic AC-130J aircraft under the HC/MC-130J Recapitalization procurement program. The USSOCOM will fund development, integration, and testing of capability enhancements for SOF-unique mission equipment using an incremental acquisition strategy. Multiple contract awards.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>S875 / *AC/MC-130J* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC-130J Airborne Mission Networking (AbMN) | C/CPFF | Sierra Nevada Corporation : Centennial, CO | 22.022 | 1.190 | Dec 2020 | - | | - | | - | | - | 0.000 | 23.212 | - |
| Integrated Tactical Mission System (ITMS) - AC/MC-130J Systems Interoperability & Tactical Map Enhancements | C/Various | Sierra Nevada Corporation : Nevada | 45.034 | 2.980 | Dec 2020 | 5.374 | Dec 2021 | 5.257 | Dec 2022 | - | | 5.257 | Continuing | Continuing | - |
| ITMS - Open Mission System (OMS) Capabilities | C/Various | Various : Various | 6.243 | 5.283 | Nov 2020 | 3.762 | Dec 2021 | 5.750 | Dec 2022 | - | | 5.750 | Continuing | Continuing | - |
| ITMS - MC-130J Software Capability Development | C/CPFF | Lockheed Martin Aeronautics : Marietta | 5.752 | 10.320 | Apr 2021 | 11.150 | Nov 2021 | 10.566 | Dec 2022 | - | | 10.566 | Continuing | Continuing | - |
| ITMS - AC-130J Software Capability Development | C/Various | Various : Various | - | 4.800 | May 2021 | 8.353 | Mar 2022 | - | | - | | - | 0.000 | 13.153 | - |
| ITMS - Agile Software Framework Dev & Test | C/Various | Various : Various | - | 4.965 | Jan 2021 | 6.986 | Mar 2022 | 6.830 | Mar 2023 | - | | 6.830 | Continuing | Continuing | - |
| ITMS - NextGen Special Mission Processor (SMP) Development, Integration & Test | C/Various | Various : Various | 8.219 | 8.888 | Dec 2020 | 1.075 | Dec 2021 | - | | - | | - | 0.000 | 18.182 | - |
| | | **Subtotal** | 87.270 | 38.426 | | 36.700 | | 28.403 | | - | | 28.403 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Integrated Tactical Mission System (ITMS) - Support | C/Various | Various : Various | 2.249 | 3.142 | Mar 2021 | 3.494 | Mar 2022 | 3.650 | Mar 2023 | - | | 3.650 | Continuing | Continuing | - |
| | | **Subtotal** | 2.249 | 3.142 | | 3.494 | | 3.650 | | - | | 3.650 | Continuing | Continuing | N/A |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>S875 / *AC/MC-130J* | |

**Test and Evaluation ($ in Millions)**

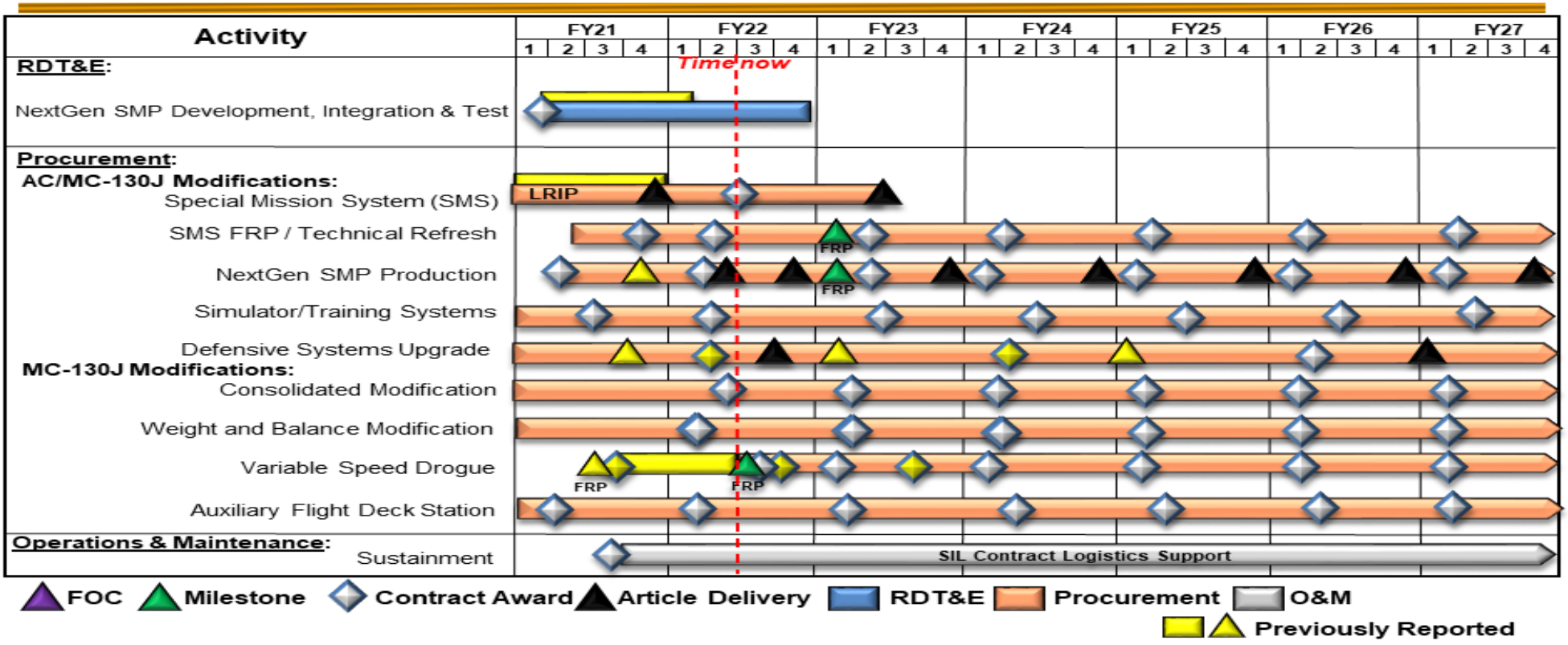
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC-130J AbMN Integration &Test | Sub Allot | USSOCOM Detachment 1 Joint Test Interoperability Command : Eglin AFB, FL | 2.302 | 1.400 | Dec 2020 | - | | - | | - | | - | 0.000 | 3.702 | - |
| ITMS - Test & Integration | Sub Allot | USSOCOM Detachment 1 : Eglin AFB, FL | 3.693 | 8.815 | Jan 2021 | 11.851 | Jan 2022 | 8.704 | Mar 2023 | - | | 8.704 | Continuing | Continuing | - |
| Prior Year Funding - Completed Efforts | C/Various | Lockheed Martin : Atlanta, GA | 0.060 | - | | - | | - | | - | | - | 0.000 | 0.060 | - |
| | | **Subtotal** | 6.055 | 10.215 | | 11.851 | | 8.704 | | - | | 8.704 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 95.574 | 51.783 | | 52.045 | | 40.757 | | - | | 40.757 | Continuing | Continuing | N/A |

**Remarks**

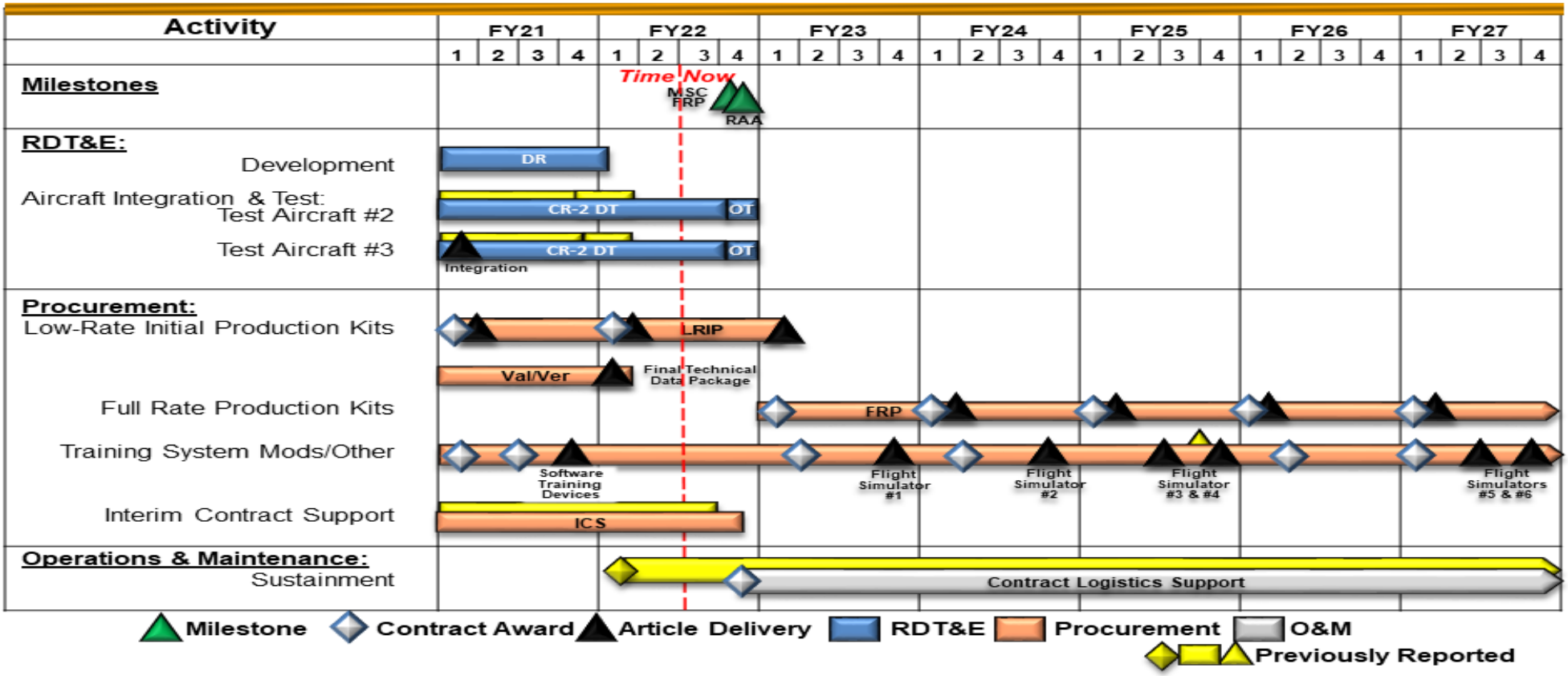
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S875 / *AC/MC-130J* |

# Common AC/MC-130J Mission Systems Schedule



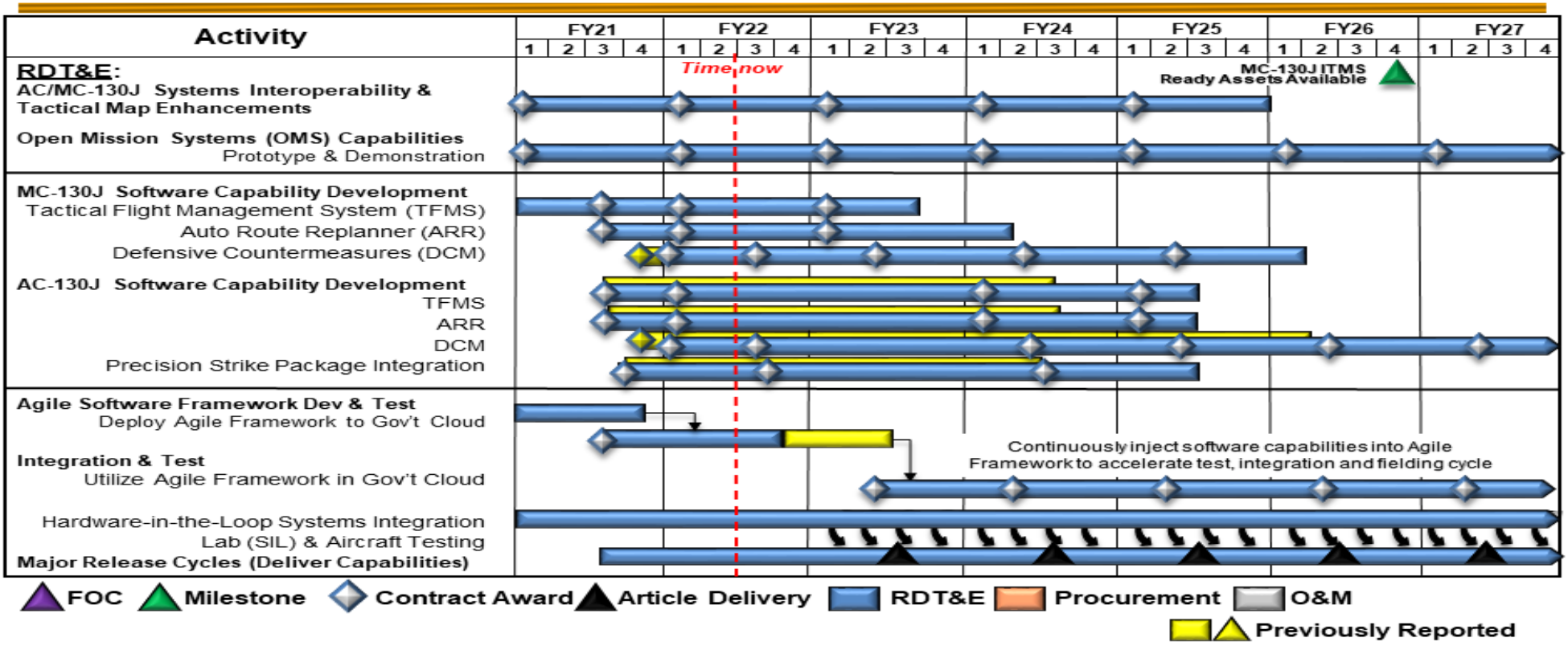
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S875 / *AC/MC-130J* |

# Airborne Mission Networking (AbMN) Schedule



| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S875 / *AC/MC-130J* |

# Integrated Tactical Mission Systems (ITMS) Schedule



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>S875 / *AC/MC-130J* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Common AC/MC-130J Mission Systems*** | | | | |
| NextGen SMP Development, Integration & Test | 1 | 2021 | 4 | 2022 |
| ***MC-130J Airborne Mission Networking (AbMN)*** | | | | |
| Engineering and Manufacturing Development | 1 | 2021 | 1 | 2022 |
| Phase III Integration & Test (Includes Tech Data, Aircraft Integration, & Testing) | 1 | 2021 | 4 | 2022 |
| ***Integrated Tactical Mission Systems (ITMS)*** | | | | |
| AC/MC-130J Systems Interoperability & Tactical Map Enhancements | 1 | 2021 | 4 | 2025 |
| Open Mission System (OMS) Capabilities Prototype and Demonstration | 1 | 2021 | 4 | 2027 |
| MC-130J Tactical Flight Management System (TFMS) | 1 | 2021 | 3 | 2023 |
| MC-130J Auto Route Replanner (ARR) | 3 | 2021 | 2 | 2024 |
| MC-130J Defensive Countermeasures (DCM) | 4 | 2021 | 2 | 2026 |
| AC-130J TFMS | 3 | 2021 | 2 | 2025 |
| AC-130J ARR | 3 | 2021 | 2 | 2025 |
| AC-130J DCM | 4 | 2021 | 4 | 2027 |
| AC-130J Precision Strike Package | 3 | 2021 | 3 | 2025 |
| Agile Software Framework Development & Test | 1 | 2021 | 4 | 2022 |
| Test & Integration of ITMS Capabilities | 2 | 2023 | 4 | 2027 |
| Hardware-in-the-Loop Systems Integration Lab (SIL) & Aircraft Testing | 1 | 2021 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>D615 / *Rotary Wing Aviation* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D615: *Rotary Wing Aviation* | 297.904 | 40.334 | 42.787 | 65.837 | - | 65.837 | 68.207 | 59.952 | 61.175 | 58.266 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces-peculiar (SOF-p) rotary wing aviation and training requirements. This project includes modifications to Aircraft Survivability Equipment (ASE) avionics and weapons systems to counter rapidly emerging threats, address cyber security, improve lethality and enhance aircraft self-protection in contested environments. Rotary wing aircraft supported by this project include: MH-60M; MH-47G; A/MH-6; and Future Vertical Lift (FVL). These aircraft provide aviation support to SOF in worldwide contingency operations and low-intensity conflicts. These aircraft must be capable of rapidly deploying, penetrating hostile areas undetected, and operations at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The anti-access/area denial (A2/AD) threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| ***Title:*** A/MH-6M Block 3.0 Upgrade | 1.783 | 2.728 | 2.793 |
| ***Description:*** Funds the development and testing of SOF-p equipment and modifications for the A/MH-6M. It will include software development and testing to integrate new capability, development and qualification of new hardware, and test and evaluation of new weapons, sensors, communications systems, or aircraft modifications that increase system performance.<br><br>***FY 2022 Plans:***<br>Continue software updates to incorporate communications upgrades and crypto modernization, follow-on testing on Block 3 components to improve sustainability, improved tail rotor blade development and test, improved main rotor transmission study, improved main rotor study, test and evaluate anti-jamming antennas, and weapons system test.<br><br>***FY 2023 Plans:***<br>Continues software updates to incorporate communications upgrades and crypto modernization for enhanced situational awareness incorporating Tactical Assault Kit, continues Light Weight Auxiliary Fuel Tanks testing and initial articles build. Initiates improved main rotor transmission study and pursues improvement to the Full Authority Digital Engine Control (FADEC), and lightweight engine doors exhaust study and testing.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $0.065 million is for increased Block 3.0 support. | | | |
| ***Title:*** MH-60M Modifications and Upgrades | 3.428 | 2.824 | 4.139 |
| ***Description:*** Funds the development and integration of critical technologies for the MH-60 helicopter to include flight test support, engineering analysis, documentation, and airworthiness substantiation. The Block 2.0 effort integrates the Army-common | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Improved Turbine Engine (ITE) into the MH-60M, replacing the current SOF-p engine. Block 2.0 initiatives include, but are not limited to, safety, performance restoration, MH-60 engineering changes and product improvements to SOF-p equipment, munitions utilized for testing, modifications to ASE and weapons systems designed to counter rapidly emerging threats, improved lethality, and enhanced aircraft self-protection in the Multi-Domain Operations (MDO) environment and against near peer threats.<br><br>***FY 2022 Plans:***<br>Begin testing and integration of guided munitions software and continue payload restoration efforts and other technologies to improve safety and decrease operational costs to ASE, weapons systems improvement and munitions.<br><br>***FY 2023 Plans:***<br>Continues payload restoration efforts and other technologies to improve safety and decrease operational costs to ASE, weapons systems improvement, munitions and supports MH-60 Improved Turbine Engine (ITE) integration designs.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $1.315 million is to support Block 1.0 induction support and mission critical MH-60 ITE integration designs. | | | |
| ***Title:*** Degraded Visual Environment (DVE)<br><br>***Description:*** The DVE solution will provide MH-47/60 aircrews with visual cues for obstacle avoidance and aircraft control during all phases of flight and significantly increase crew and passenger survivability in DVE. This program addresses SOF-p requirements for rapid fielding and weight limitations, and capitalizes on the integration of SOF-p avionics and the unique skills of the SOF aviator.<br><br>***FY 2023 Plans:***<br>Continues DVE system design, developmental and qualification testing and develops sensor data fusion of Degraded Visual Environment Pilotage System.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $19.500 million supports sensor fusion development and system integration efforts. | 4.048 | - | 19.500 |
| ***Title:*** Future Vertical Lift (FVL)<br><br>***Description:*** Provides for development of the United States Special Operations Command (USSOCOM) platform capabilities that address SOF-p FVL requirements. This FVL family of systems significantly increases range, speed, payload, survivability, reliability, and maintainability of vertical lift aircraft to meet emerging mission requirements. The USSOCOM will participate in the service-common development of a joint FVL aircraft by injecting SOF-p requirements and equities into the initial development and design efforts to minimize SOF-p modifications to the common aircraft.<br><br>***FY 2022 Plans:*** | 9.114 | 9.059 | 10.086 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Provide for delta cost design analysis of SOF Future Long Range Assault Aircraft (FLRAA) and Future Attack and Reconnaissance Aircraft (FARA); initiate FLRAA Structural Baseline support effort and engineering analysis for Modular Open System Architecture (MOSA) implementation of Radio Frequency (RF) Countermeasures (CM), Terrain Following/Terrain Avoidance (TF/TA) Radar, Infrared (IR) Countermeasures, and DVE; continue SOF FLRAA configuration analysis.<br>***FY 2023 Plans:***<br>Provides for SOF-p mission equipment package engineering, integration, and demonstration necessary to support advanced avionics, advanced mission equipment, RFCMs, TF/TA Sensor, Electro-Optical/IR Sensor, Air Launched Effects and DVE into the Army baseline. Maintains and updates FARA engineering analysis as Army baseline designs and requirements mature; continues integrating SOF-p requirements during development. Continues MOSA analysis into a common cockpit with Digital Backbone integrating SOF-p mission equipment.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $1.027 million is for continued engineering studies and risk reduction efforts. | | | |
| ***Title:*** Infrared Countermeasures (IRCM)<br>***Description:*** Provides a low Size, Weight, and Power (SWaP) IRCM capability suitable for the A/MH-6 Mission Enhanced Little Bird with potential use on the MH-60 and MH-47 aircraft. The IRCM program will leverage the Department of Navy developed Distributed Aperture Infrared Countermeasure System by integrating and testing a complete lightweight IRCM system to include a missile warning system and countermeasure capability. The IRCM program includes development of an infrared exhaust suppressor for the A/MH-6, and flare testing for emerging threats.<br><br>NOTE: IRCM efforts have transitioned and are justified under Aircraft Survivability Equipment (ASE) Upgrades beginning with the FY 2023 President's Budget submission. | 0.625 | - | - |
| ***Title:*** MH-47 Modifications and Upgrades<br>***Description:*** Develops technologies to improve the performance and safety of the MH-47G and decrease operational costs. Efforts include, but are not limited to, the Active Parallel Actuator Subsystem (APAS), weight reduction, and performance improvement developments. This sub-project also includes modifications to ASE and weapons systems to counter rapidly emerging threats and enhance aircraft self-protection.<br>***FY 2022 Plans:***<br>Complete APAS development, including integration with MH-47G subsystems, such as Common Avionics Architecture System (CAAS), and execution of a configuration study of performance related improvements.<br>***FY 2023 Plans:*** | 8.105 | 3.949 | 7.048 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Continues developing technologies, weight reduction, and performance improvements; includes modifications to Aircraft Survivability Equipment (ASE) and weapons systems to counter rapidly emerging threats and enhance aircraft self-protection integration with MH-47G subsystems, such as CAAS, and execution of a configuration study of performance related improvements. Incorporates performance enhancing and weight reduction technologies targeting increased payloads, improved fuel economy, and expanded airspeed and environmental operating envelopes.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $3.099 million supports the building and testing of weight reduction technologies to address emerging capability enhancements. | | | |
| ***Title:*** Mission Processor Upgrade (MPU)<br>***Description:*** Provides for non-recurring engineering, systems engineering/testing, and future aircraft architecture studies that support replacement and upgrade of the current mission and video processors for all Army Special Operations Aviation (ARSOA) rotary wing aircraft. Upgrading all internal processors increases the processing power to support critical functionality and emerging technologies that will be integrated into the CAAS. This MPU provides the processing and memory resources required to incorporate the following functions into the General Purpose Processing Unit (GPPU): (1) Global Air Traffic Management replaces ground-based navigation aids with a capability that meets the international requirement that all aircraft be compliant with digital and space-based navigation systems; (2) cognitive decision aiding system fuses information on threat, route, weather, terrain, and friendly forces, instantaneously adjusting an aircraft's route to protect the flight crew in hazardous weather, low level conditions, night conditions, and the next generation ARSOA cockpit.<br>***FY 2022 Plans:***<br>Continue exploration of the next generation ARSOA cockpit, to include architectures studies/development and individual enabling/ enhancing technologies.<br>***FY 2023 Plans:***<br>Continues exploration of the next generation ARSOA cockpit, avionics upgrades and Next Generation Tactical Communications.<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $0.032 million is to support continued systems engineering and testing. | 0.588 | 1.522 | 1.554 |
| ***Title:*** Tactical Mission Networking (TMN)<br>***Description:*** Focuses on the technology development of platform software and hardware systems with capabilities to enable aircraft to effectively adapt and overcome the challenges of a highly contested and congested RF environment. This effort facilitates advanced radio waveforms and communications equipment to ensure interoperability with ground forces and multi-domain operations. Upgrading antennas, processors, radios and other enabling communications equipment will be a persistent requirement as the RF environment becomes increasingly more complex. Additionally, the Army intends to upgrade its networks | 3.000 | - | 3.121 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| every two years – this funding will ensure Special Operations Aircraft can adapt and keep pace with both SOF and conventional forces' communications and networking improvements/upgrades.<br><br>***FY 2023 Plans:***<br>Continues development of software and hardware to rapidly incorporate advanced waveforms, advanced communications, and networking hardware onto ARSOA aircraft.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $3.121 million funds development of software and hardware to rapidly incorporate advanced waveforms, advanced communications, and networking hardware onto ARSOA aircraft. | | | |
| ***Title:*** Aircraft Survivability Equipment (ASE) Upgrades | 9.643 | 22.705 | 17.596 |
| ***Description:*** Provides a low SWaP IRCM and RFCM capability and develops, integrates, and tests critical active and passive SOF-p aircraft survivability equipment to counter the acknowledged high proliferation of advanced surface-to-air threat systems for the A/MH-6, MH-60, and MH-47. These threat systems are evolving technically at an unprecedented rate, requiring rapid countermeasure system development and immediate spiraled improvements that will reduce the probability of successful engagement, increase the probability of detecting and countering threat systems, and improve the aircraft's ability to continue operating after sustained battle damage. ASE upgrades will leverage the Department of Navy developed Distributed Aperture Infrared Countermeasure System by integrating and testing a complete lightweight IRCM system to include a missile warning system, countermeasure capability and development of an infrared exhaust suppressor for the A/MH-6, and flare testing for emerging threats. ASE upgrades includes development and testing of both new systems and Pre-Planned Product Improvements (P3I)/upgrades of fielded survivability equipment and associated qualification testing. P3I upgrades may include, but are not limited to, expansion of loadsets on existing systems, modernization of legacy components, and studies directed at potential "collaborative off-boarding/on-boarding" detect/countermeasure capabilities to provide expanded coverage for aircrews in a high threat environment.<br><br>NOTE: IRCM efforts have transitioned and are justified under ASE Upgrades beginning with the FY 2023 President's Budget Submission.<br><br>***FY 2022 Plans:***<br>Continue development of new systems, P3I/upgrades of fielded survivability equipment, and continue development of countermeasures. Additional details can be provided under separate cover, upon request.<br><br>***FY 2023 Plans:*** | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|---|---|---|
| Continues development of new systems, P3I/upgrades of fielded survivability equipment, and continues development of countermeasures. Additional details can be provided under separate cover, upon request.<br><br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>The FY 2023 funding request was reduced by $5.109 million to account for the availability of prior year execution balances. | | | |
| **Accomplishments/Planned Programs Subtotals** | 40.334 | 42.787 | 65.837 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PROC/0201RWUPGR: *Rotary Wing Upgrades and Sustainment* | 220.676 | 207.278 | 214.575 | - | 214.575 | 254.073 | 247.746 | 222.701 | 229.260 | Continuing | Continuing |
| • 0201MH60: *MH-60 Blackhawk* | - | 58.976 | - | - | - | - | - | - | - | 1,127.640 | 1,127.640 |
| • 0601MH47: *MH-47 Chinook* | 135.482 | 130.485 | 133.144 | - | 133.144 | 136.222 | 138.975 | 141.625 | 106.458 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

• A/MH-6M Block 3.0 Upgrade comprises three distinct efforts: integrated airframe, Block 3 performance kits and avionics upgrades. The airframe efforts (new rotor blades/performance components and new fuselage shells) will be a sole-source contract to Boeing, owner of the technical data associated with the performance modification to the A/MH-6 airframes. The cockpit avionics architecture will be developed by Collins Aerospace. Any new hardware components will be Non Developmental Item/Commercial-Off-The-Shelf (COTS) to the extent possible and will be competitively selected. Airframe modification and integration work will be conducted via contract with Special Operations Forces Support Activity (SOFSA).

• MH-60M Modifications and Upgrades supports systems integration and qualification efforts on MH-60M helicopters. The Modifications and Upgrades are executed via various acquisition vehicles and include, but are not limited to, government and contractor flight test support, engineering analysis, documentation, and airworthiness substantiation. Airframe modification and integration work will be conducted via a contract with SOFSA.

• DVE integrates and qualifies a solution to address a safety of flight issue while flying in Degraded Visual Environment. A competitive source selection process resulted in the down-selection of one vendor for the DVE solution which will procure, integrate, and install components to provide real-time “see through” imagery and visual cues for obstacle avoidance and landing zone information during all phases of flight.

• FVL is the SOF aviation participation in the Joint FVL effort to develop the next generation of vertical takeoff and landing aircraft and establishes the foundation for the transformation of the Department of Defense vertical lift aviation capabilities over the next forty years.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

• IRCM integrates a mission configurable Missile Warning System and IRCM capability at a weight suitable for the A/MH-6M aircraft. Procurement of systems for integration and test will leverage the Department of the Navy IRCM (DAIRCM)development efforts and contracts. The government will integrate the systems onto the A/MH-6 utilizing existing aircraft modification contracts. Will begin evaluation and qualification of an infrared exhaust suppressor for the A/MH-6M aircraft, and continue flare testing for emerging threats.

• MH-47 Modifications and Upgrades will develop technologies to improve performance and safety of the MH-47G and decrease operational costs. Efforts include the APAS, weight reduction, and performance improvement developments. The Modifications and Upgrades are executed via various acquisition vehicles and consist mostly of government and contractor executed integration, testing, and qualification efforts with some analytical engineering services to be completed. Post-production block modifications are accomplished via contract with SOFSA.

• MPU provides for future cockpit architecture studies that will help define the replacement of current mission and video processors for all ARSOA platforms. Additionally, it will address near term required upgrades to existing components. Potential upgrades will be through existing Original Equipment Manufacturers (OEM), while the future cockpit architecture studies will be competitively awarded.

• TMN provides for future communications and networking capability exploration and solution development that will ensure ARSOA platforms can communicate through voice and data in a highly contested and congested RF environment. Additionally, it will ensure ARSOA aircraft can maintain interoperability with the SOF and conventional ground forces' plan of rapidly and continually updating their communications and networking infrastructure. Non-developmental communications equipment will be procured through existing DOD contracts. Aircraft integration will be through existing aircraft modification contracts.

• ASE upgrades integrates a mission configurable Missile Warning System and IRCM capability at a weight suitable for the A/MH-6M aircraft. Procurement of systems for integration and test will leverage DAIRCM development efforts and contracts. The government will integrate the systems onto the A/MH-6 utilizing existing aircraft modification contracts. Will begin evaluation and qualification of an infrared exhaust suppressor for the A/MH-6M aircraft and continue flare testing for emerging threats. ASE Upgrades also develops and tests both new systems and pre-planned product improvements/upgrades of fielded aircraft survivability systems and countermeasures. For new systems, other services' development and testing contracts are leveraged to the maximum extent possible. Upgrades of fielded equipment are typically accomplished by the OEM.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>D615 / *Rotary Wing Aviation* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Degraded Visual Environment (DVE) | C/Various | PM TAPO : Fort Eustis, VA | 72.145 | 4.048 | Jun 2021 | - | | 19.500 | Apr 2023 | - | | 19.500 | Continuing | Continuing | - |
| Future Vertical Lift (FVL) | C/Various | PM TAPO : Ft. Eustis, VA | - | 8.781 | Sep 2021 | 8.396 | Dec 2021 | 9.280 | Apr 2023 | - | | 9.280 | Continuing | Continuing | - |
| FVL Congressional Add (Cong Add) | C/Various | PM TAPO : Ft. Eustis, VA | 7.356 | - | | - | | - | | - | | - | 0.000 | 7.356 | - |
| MH-47 Modifications and Upgrades | C/Various | PM TAPO : Fort Eustis, VA | 50.737 | 8.105 | Nov 2020 | 3.949 | Nov 2021 | 7.048 | Nov 2022 | - | | 7.048 | Continuing | Continuing | - |
| Tactical Mission Networking (TMN) | C/Various | PM TAPO : Fort Eustis, VA | - | 3.000 | Mar 2021 | - | | 3.121 | Mar 2023 | - | | 3.121 | Continuing | Continuing | - |
| Aircraft Survivability Equipment Upgrades | C/Various | PM TAPO : Fort Eustis, VA | 28.233 | 9.643 | Aug 2021 | 22.705 | Mar 2022 | 17.596 | Nov 2023 | - | | 17.596 | Continuing | Continuing | - |
| Prior Years Funding | C/Various | PM MELB : Fort Eustis, VA | 49.820 | - | | - | | - | | - | | - | 0.000 | 49.820 | - |
| | | **Subtotal** | 208.291 | 33.577 | | 35.050 | | 56.545 | | - | | 56.545 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FVL | C/Various | PM TAPO : Fort Eustis, VA | 5.213 | 0.333 | Nov 2020 | 0.663 | Nov 2021 | 0.806 | Feb 2023 | - | | 0.806 | Continuing | Continuing | - |
| FVL (Cong Add) | C/Various | PM TAPO : Fort Eustis, VA | 0.359 | - | | - | | - | | - | | - | 0.000 | 0.359 | - |
| | | **Subtotal** | 5.572 | 0.333 | | 0.663 | | 0.806 | | - | | 0.806 | Continuing | Continuing | N/A |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A/MH-6M Block 3.0 Upgrade | C/Various | PM MELB : Fort Eustis, VA | 35.616 | 1.783 | Apr 2021 | 2.728 | Jan 2022 | 2.793 | Feb 2023 | - | | 2.793 | Continuing | Continuing | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 United States Special Operations Command | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 1160403BB / *Aviation Systems* | Project (Number/Name)<br>D615 / *Rotary Wing Aviation* | |

**Test and Evaluation ($ in Millions)**

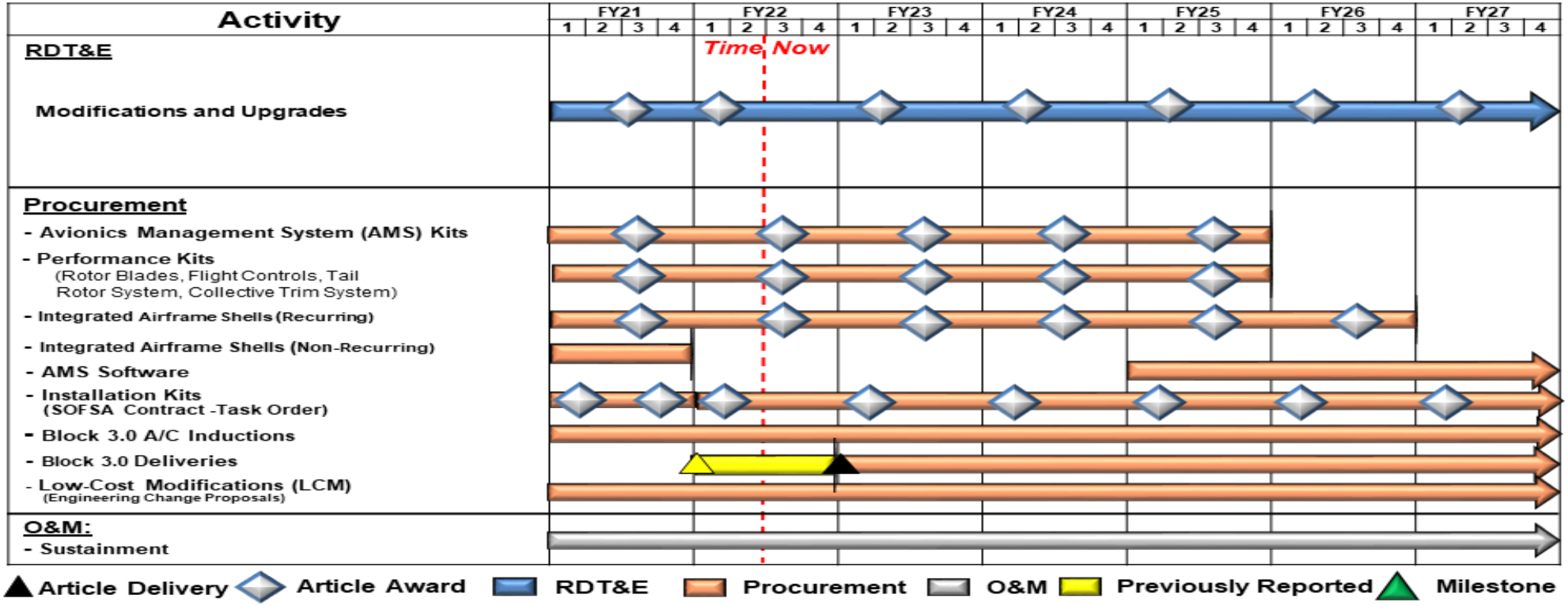
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH-60M Modification and Upgrades | C/Various | PM TAPO : Fort Eustis, VA | 13.849 | 3.428 | Apr 2021 | 2.824 | Mar 2022 | 4.139 | Mar 2023 | - | | 4.139 | Continuing | Continuing | - |
| Infrared Countermeasures Integration and Testing (IRCM) | C/Various | PM TAPO : Fort Eustis, VA | 14.951 | 0.625 | May 2021 | - | | - | | - | | - | 0.000 | 15.576 | - |
| Mission Processor Upgrade (MPU) | C/Various | PM TAPO : Fort Eustis, VA | 1.002 | 0.588 | Apr 2021 | 1.522 | Apr 2022 | 1.554 | Apr 2023 | - | | 1.554 | Continuing | Continuing | - |
| Prior Years Funding | C/Various | Various : Various | 18.623 | - | | - | | - | | - | | - | 0.000 | 18.623 | - |
| | | **Subtotal** | 84.041 | 6.424 | | 7.074 | | 8.486 | | - | | 8.486 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 297.904 | 40.334 | | 42.787 | | 65.837 | | - | | 65.837 | Continuing | Continuing | N/A |

**Remarks**

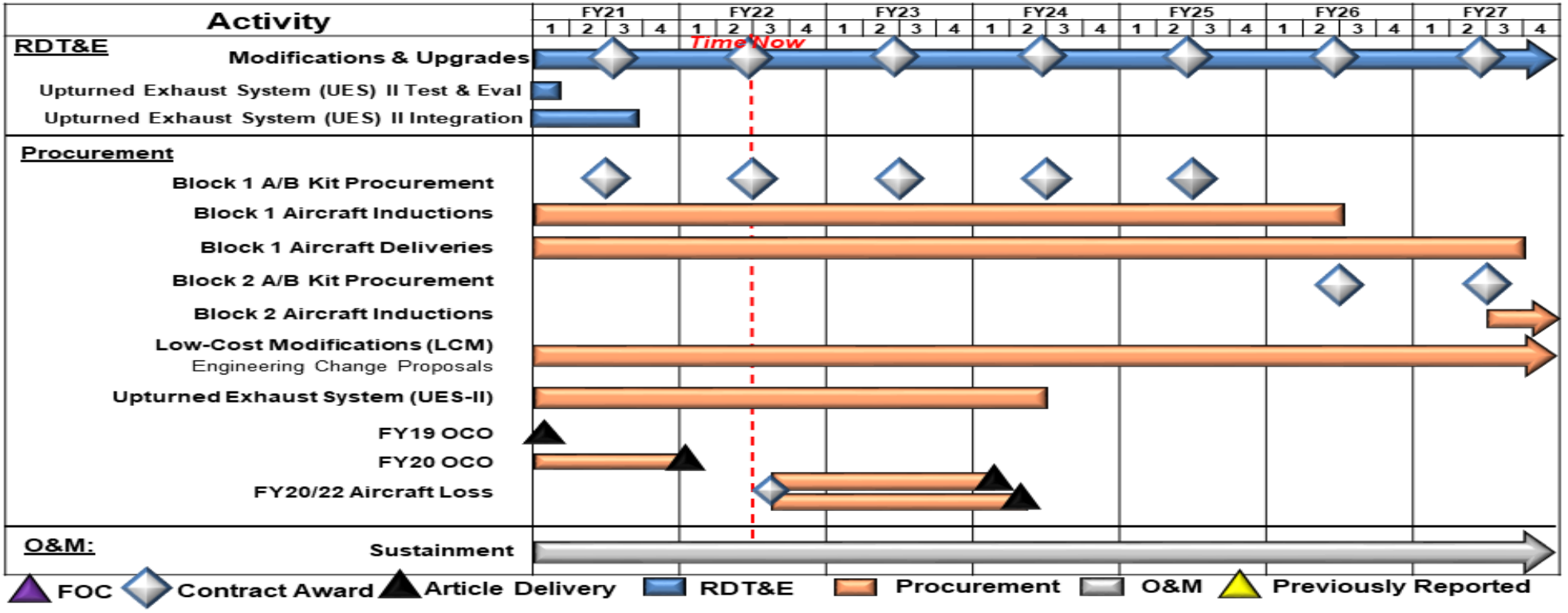
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# A/MH-6 Program Schedule



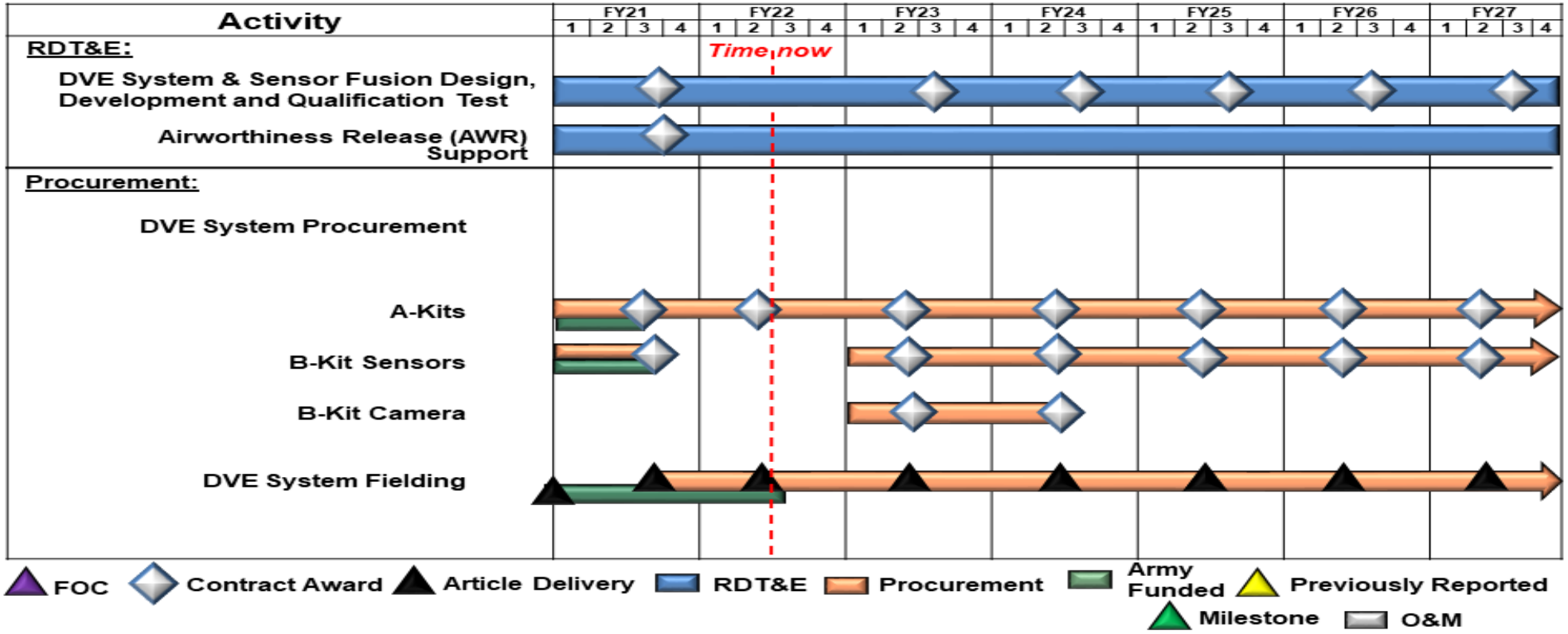
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# MH-60 Program Schedule



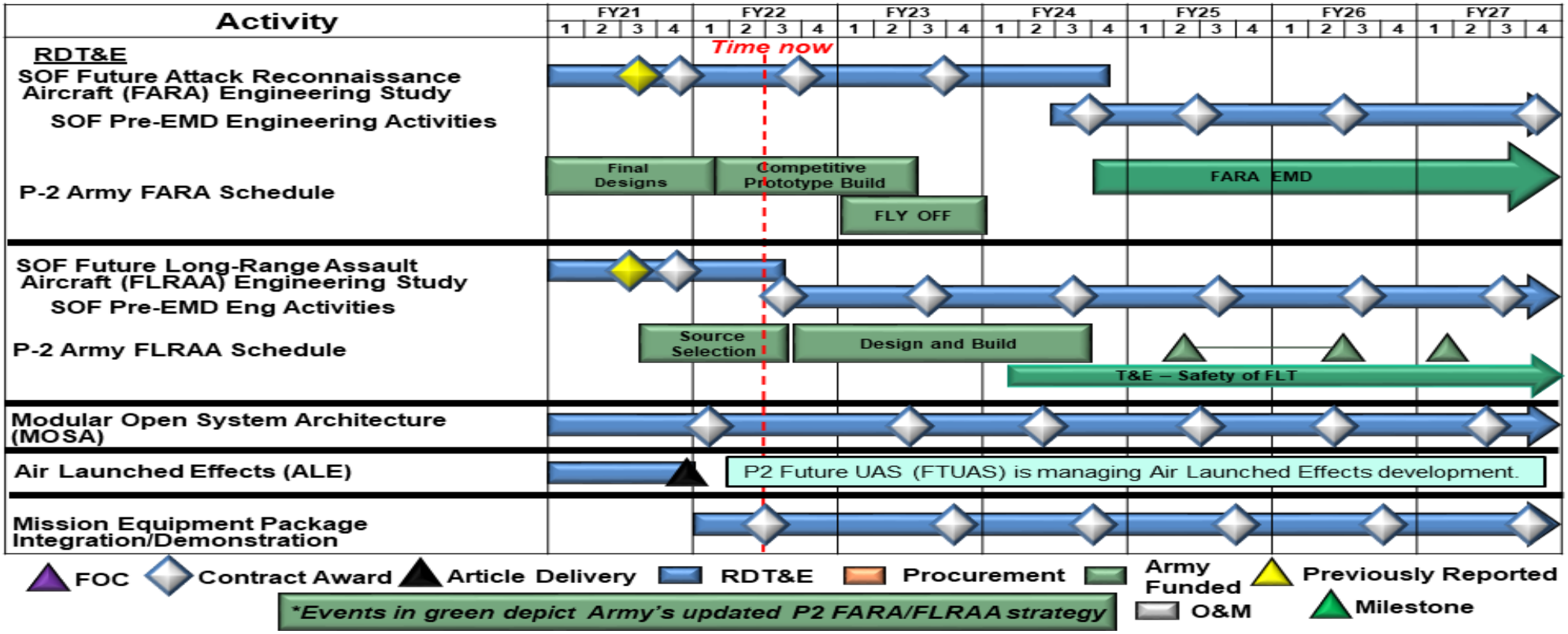
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# Degraded Visual Environment (DVE) Schedule



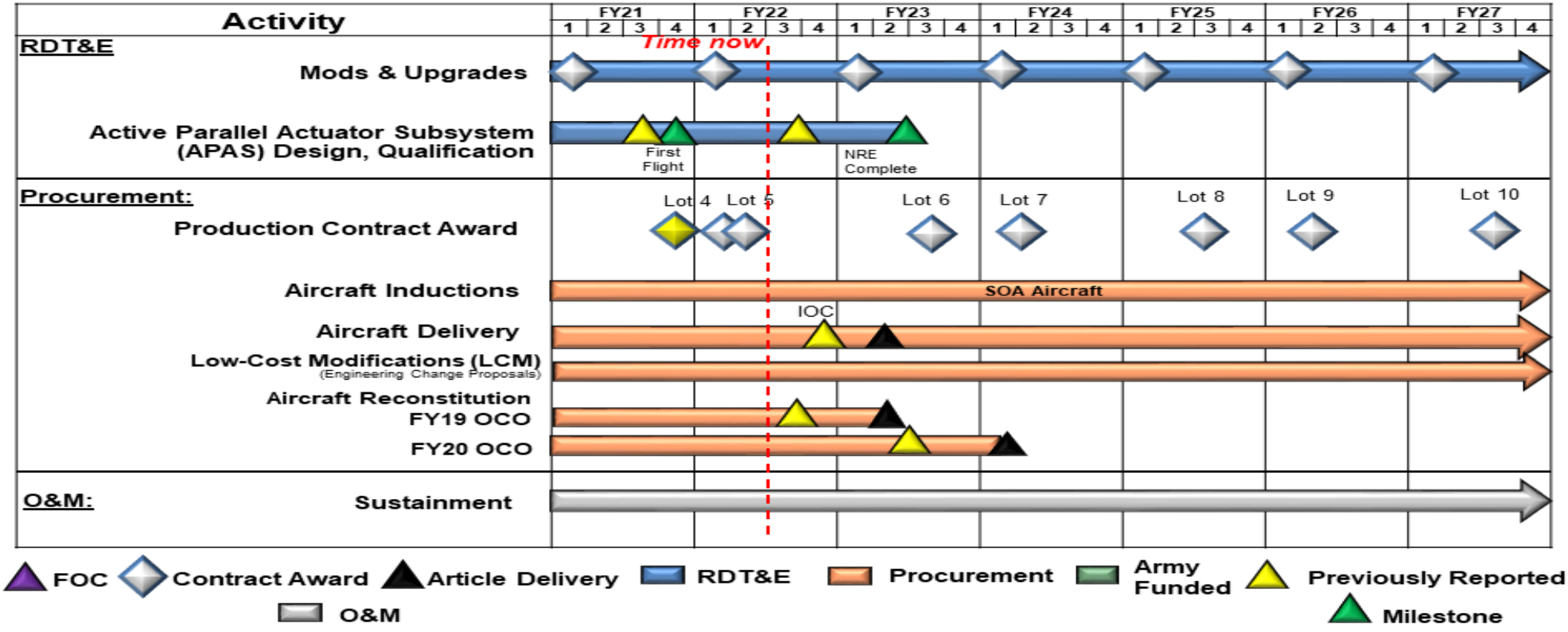
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# Future Vertical Lift Schedule



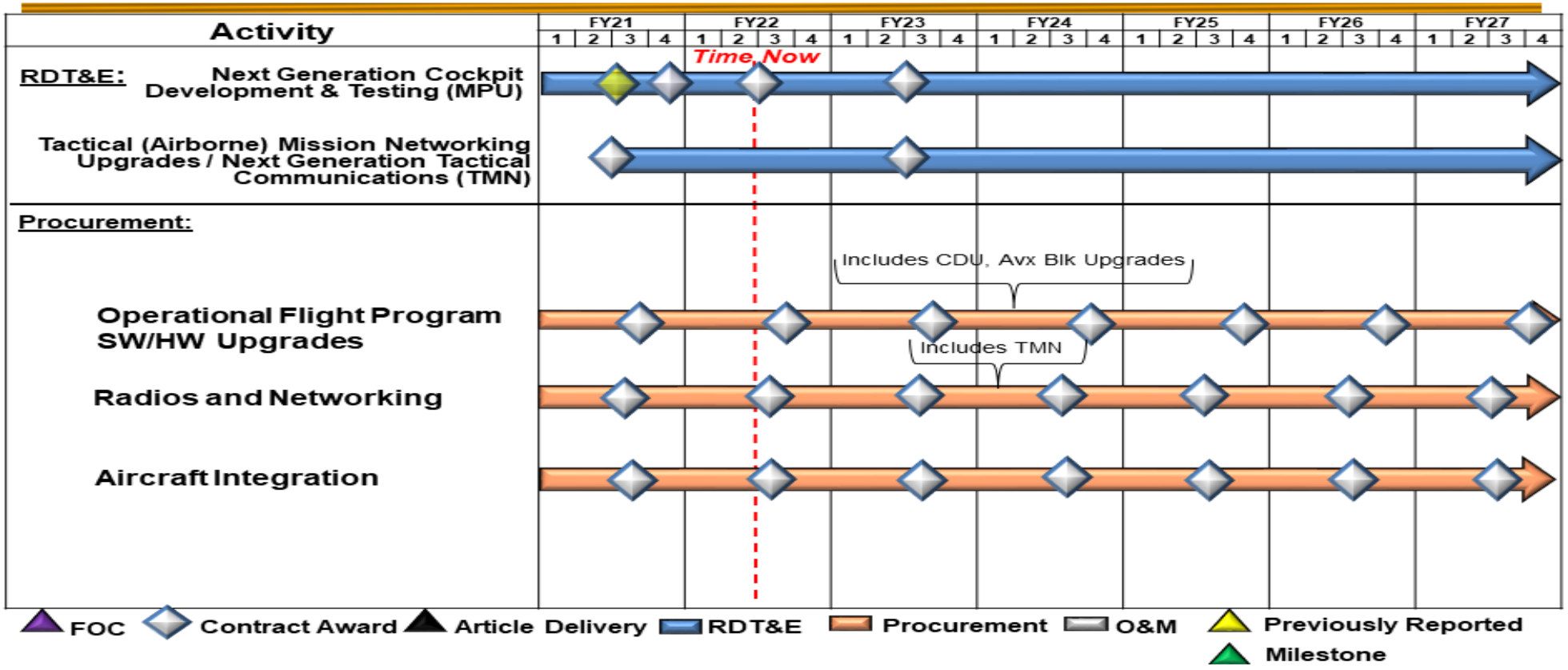
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# MH-47 Program Schedule



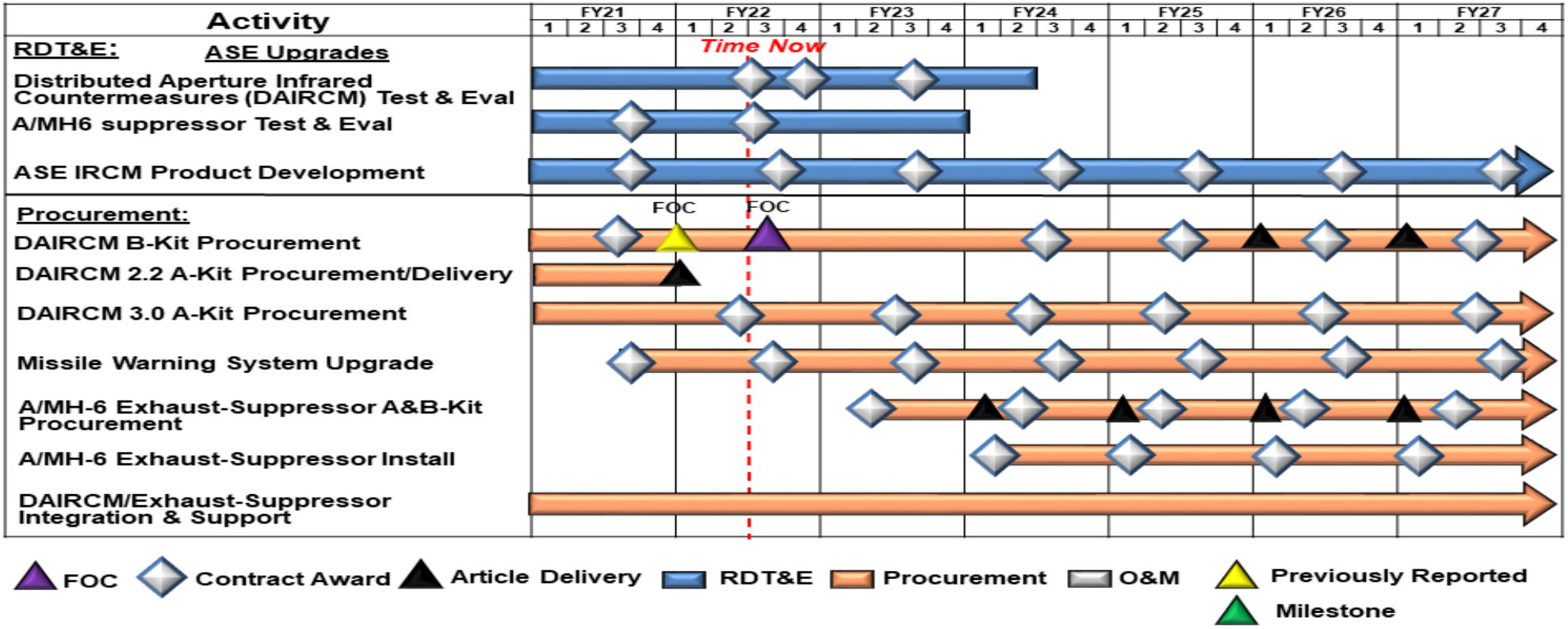
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# Mission Processor Upgrade Schedule



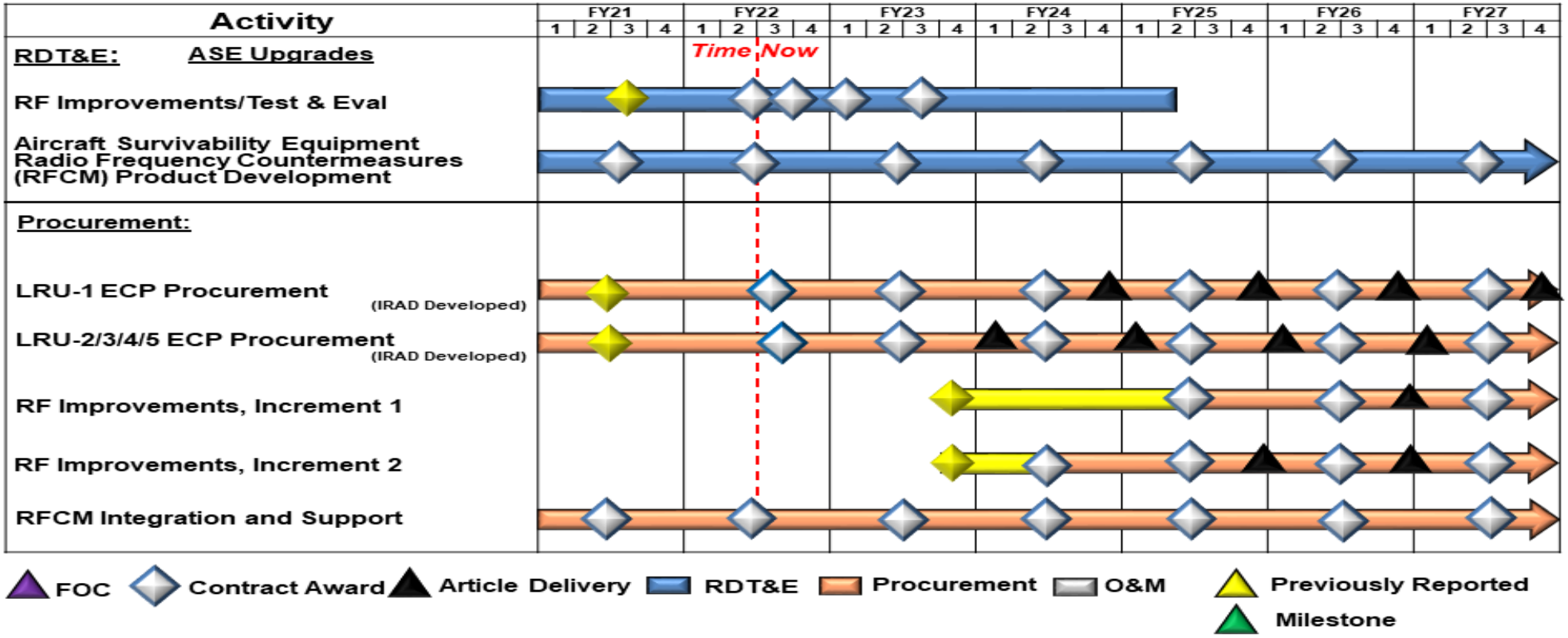
| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# Aircraft Survivability Equipment
# Infrared Countermeasures Schedule



| Exhibit R-4, RDT&E Schedule Profile: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

# Aircraft Survivability Equipment
# Radio Frequency Countermeasures Schedule



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***A/MH-6M Block 3.0 and Modifications*** | | | | |
| Modifications and Upgrades | 1 | 2021 | 4 | 2027 |
| ***MH-60M Modifications and Block Upgrades*** | | | | |
| Modifications and Upgrades | 1 | 2021 | 4 | 2027 |
| Upturned Exhaust System (UES) II Test & Eval | 1 | 2021 | 1 | 2021 |
| UES II Integration | 1 | 2021 | 3 | 2021 |
| ***Degraded Visual Environment (DVE)*** | | | | |
| DVE Systems & Sensor Fusion Design, Development, and Qualification Test | 1 | 2021 | 4 | 2027 |
| Airworthiness Release (AWR) Support | 1 | 2021 | 4 | 2027 |
| ***Future Vertical Lift (FVL)*** | | | | |
| SOF Future Attack Reconnaissance Aircraft (FARA) Engineering Study | 1 | 2021 | 4 | 2027 |
| SOF Future Long-Range Assault Aircraft (FLRAA) Engineering Study | 1 | 2021 | 4 | 2027 |
| Modular Open Systems Architecture | 1 | 2021 | 4 | 2027 |
| Air Launched Effects (ALE) | 1 | 2021 | 4 | 2021 |
| Mission Equipment Package (MEP) | 1 | 2022 | 4 | 2027 |
| ***MH-47 Program*** | | | | |
| Modifications and Upgrades | 1 | 2021 | 4 | 2027 |
| Active Parallel Actuator Subsystem (APAS) Design, Qualification | 1 | 2021 | 2 | 2023 |
| ***Mission Processor Upgrade (MPU)*** | | | | |
| Next Generation Cockpit Development and Testing | 1 | 2021 | 4 | 2027 |
| Tactical Mission Networking Upgrades / Next Generation Tactical Communications | 2 | 2021 | 4 | 2027 |
| ***Aircraft Survivability Equipment (ASE) Infrared Countermeasures (IRCM)*** | | | | |
| Distributed Aperture IRCM Test and Evaluation | 1 | 2021 | 2 | 2024 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 United States Special Operations Command | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1160403BB / *Aviation Systems* | **Project (Number/Name)**<br>D615 / *Rotary Wing Aviation* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| A/MH-6 Suppressor Test and Evaluation | 1 | 2021 | 4 | 2023 |
| ASE IRCM Product Development | 1 | 2021 | 4 | 2027 |
| ***Aircraft Survivability Equipment (ASE) Radio Frequency Countermeasures (RFCM)*** | | | | |
| RF Improvements Test and Evaluation | 1 | 2021 | 2 | 2025 |
| ASE RFCM Product Development | 1 | 2021 | 4 | 2027 |