| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 United States Special Operations Command | Date: March 2019 |
|---|---|
| **Appropriation/Budget Activity**<br>0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development* | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* |

| COST ($ in Millions) | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Program Element | 43.226 | 5.488 | 6.286 | 6.359 | - | 6.359 | 6.487 | 6.621 | 6.757 | 6.915 | Continuing | Continuing |
| S400A: *Distributed Common Ground/Surface Systems* | 43.226 | 5.488 | 6.286 | 6.359 | - | 6.359 | 6.487 | 6.621 | 6.757 | 6.915 | Continuing | Continuing |

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

This program element is part of the Military Intelligence Program (MIP). The Distributed Common Ground/Surface System Special Operations Forces (DCGS-SOF) is part of a family of systems providing Intelligence, Surveillance, and Reconnaissance Processing, Exploitation, Dissemination (PED), and analytical capabilities at the Component/TSOC level and below through a combination of reach back, forward support, and collaboration. The mission tailored infrastructure interconnects the warfighters, analysts, and sensors to find and fix High Value Targets and provides a network-enabled, interoperable construct allowing continual, unimpeded sharing of intelligence data, information and services with SOF and between the Services, other national intelligence agencies, combatant commands and multi-national partners. It connects the SOF warfighters and support analysts with essential intelligence information and provides situational awareness information to SOF leadership at all echelons. The three components of DCGS-SOF include the following: The Enterprise All Source Information Fusion (ENT/ASIF) provides infrastructure, processing and intelligence analytical tools capabilities to allow for worldwide SOF intelligence information sharing via a globally connected cloud based architecture as well as a forward disconnected capability. SOF Geospatial Intelligence Processing Exploitation, and Dissemination (SGIP) provides capabilities in garrison and deployed environments of manned and unmanned sensors. SOF Signals Intelligence (SIGINT) Processing, Exploitation, Dissemination (PED) provides SIGINT exploitation capability in both garrison and deployed environments. Middle-Tier Acquisition (2016 NDAA Section 804) to accommodate rapid prototyping, may be utilized.

| B. Program Change Summary ($ in Millions) | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 5.496 | 6.286 | 6.388 | - | 6.388 |
| Current President's Budget | 5.488 | 6.286 | 6.359 | - | 6.359 |
| Total Adjustments | -0.008 | 0.000 | -0.029 | - | -0.029 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | -0.008 | - | | | |
| • SBIR/STTR Transfer | - | - | | | |
| • Other Adjustments | - | - | -0.029 | - | -0.029 |

**Change Summary Explanation**

Funding:

| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 United States Special Operations Command | Date: March 2019 |
|---|---|
| **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 0305208BB *I Distributed Common Ground/Surface Systems* |

FY 2018: Decrease of -$0.008 is due to a minor reprogramming.

FY 2019: None.

FY 2020: Decrease of -$0.029 is due to minor adjustments.

Schedule: Market research results and the pivot to the National Reconnaissance Office (NRO) Fusion Analysis and Development Effort (FADE) platform modifies technology development objectives and timelines.

Technical: Usability testing and requirements refinement led to market research and technology shift to partner with NRO to utilize their fielded Government/ Commercial off the Shelf FADE system after making SOF enhancements.

| Exhibit R-2A, RDT&E Project Justification: PB 2020 United States Special Operations Command | | | Date: March 2019 |
|---|---|---|---|
| Appropriation/Budget Activity<br>0400 / 7 | R-1 Program Element (Number/Name)<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | Project (Number/Name)<br>S400A / *Distributed Common Ground/ Surface Systems* | |

| COST ($ in Millions) | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S400A: *Distributed Common Ground/Surface Systems* | 43.226 | 5.488 | 6.286 | 6.359 | - | 6.359 | 6.487 | 6.621 | 6.757 | 6.915 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This program element is part of the Military Intelligence Program (MIP). The Distributed Common Ground/Surface System Special Operations Forces (DCGS-SOF) is part of a family of systems providing Intelligence, Surveillance and Reconnaissance (ISR) Processing, Exploitation, Dissemination (PED), and analytical capabilities at the Component/TSOC level and below through a combination of reach back, forward support, and collaboration. The mission tailored infrastructure interconnects the warfighters, analysts, and sensors to find and fix High Value Targets and provides a network-enabled, interoperable construct allowing continual, unimpeded sharing of intelligence data, information and services with SOF and between the Services, other national intelligence agencies, combatant commands and multi-national partners. It connects the SOF warfighters and support analysts with essential intelligence information and provides situation awareness information to SOF leadership at all echelons. The three components of DCGS-SOF include the following: The Enterprise All Source Information Fusion (ENT/ASIF) provides infrastructure, processing and intelligence analytical tools capabilities to allow for worldwide SOF intelligence information sharing via a globally connected cloud based architecture as well as a forward disconnected capability. SOF Geospatial Intelligence Processing Exploitation, and Dissemination (SGIP) provides capabilities in garrison and deployed environments of manned and unmanned sensors. SOF Signals Intelligence (SIGINT) Processing, Exploitation, Dissemination (PED) provides SIGINT exploitation capability in both garrison and deployed environments.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| ***Title:*** DCGS | 5.488 | 6.286 | 6.359 |
| ***FY 2019 Plans:***<br>Continue integration of emerging technologies and enhanced capabilities for ENT/ASIF in partnership with Fusion Analysis Development Effort (FADE) such as: Advanced analytics, user interface (UI), natural language processing (NLP), cloud, language translations and disconnected operations into the DCGS-SOF baseline. Continues refining and integration of SOF SIGINT PED/ SGIP emerging technologies and capabilities such as: over-watch/compound monitoring, develop analyst trip wire tools, next generation analytics processing, upgrading imaging and video exploitation tools, patterns of movement characterization and detection for single mission, upgrade speech to text capabilities. Continues DCGS-SOF Limited Objective Events and exercise participation to test integration efforts. Continues development of the interoperability with Coalition partners, Defense Intelligence Information Environment (DI2E), and Joint Information Environment. | | | |
| ***FY 2020 Plans:***<br>Continues development of rapid prototyping and integration of emerging technologies and enhanced capabilities for DCGS-SOF requirements such as: Advanced analytics, UI, NLP, cloud, language translations and deliver disconnected operations capability into the DCGS-SOF baseline. Continues refining and integration of SOF SIGINT PED/SGIP emerging technologies | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2020 United States Special Operations Command | | Date: March 2019 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| and capabilities such as: over-watch/compound monitoring, develop analyst trip wire tools, next generation analytics processing, upgrading imaging and video exploitation tools, patterns of movement characterization and detection for single mission, upgrade speech to text capabilities. Continues DCGS-SOF Limited Objective Events and exercise participation to test integration efforts. Continues development of the interoperability with Coalition partners, DI2E, and Joint Information Environment.<br>***FY 2019 to FY 2020 Increase/Decrease Statement:***<br>Increase of $0.073 million due to inflation and other minor adjustments. | | | |
| **Accomplishments/Planned Programs Subtotals** | 5.488 | 6.286 | 6.359 |

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

| Line Item | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PROC/020401INTL: *Distributed Common Ground/Surface System* | 15.685 | 17.863 | 12.522 | - | 12.522 | 11.645 | 13.677 | 14.690 | 15.117 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

DCGS-SOF leverages SOF programs, DoD and Intelligence Community partners, National labs, and other Government Agencies to integrate Commercial Off The Shelf /Government Off The Shelf (COTS/GOTS), and other mature technologies into the Program of Record which will reside partially within the SOF Information Enterprise combined with Web-Client tools in a global cloud. These alliances enable more agile access to (searchable, discoverable) and sharing of larger data domains and services to meet SOF-peculiar documented requirements. The technology allows for seamless integration and federation with DoD, Interagency, and Coalition tactical Intelligence, Surveillance and Reconnaissance (ISR) PED systems. The DCGS-SOF program office employs an agile development process with capability insertions into the development baseline for assessment and future deployment into the operational baseline. All development requirements are prioritized through the DCGS Requirements Working Group (DRWG) chaired by J2. Once approved, the requirements are evaluated and scheduled by engineering development teams for SOF and National Reconnaissance Office (NRO) FADE. Using this methodology allows capabilities to be inserted in a fast and agile manner based on user requirements and priorities. All evolutionary technology insertions (ETIs) in the R-4 schedule are based on current program office projections. If requirements change based on the DRWG, the ETI and version capabilities identified may change.

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 United States Special Operations Command | | Date: March 2019 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2018 Cost | FY 2018 Award Date | FY 2019 Cost | FY 2019 Award Date | FY 2020 Base Cost | FY 2020 Base Award Date | FY 2020 OCO Cost | FY 2020 OCO Award Date | FY 2020 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capabilities Modernization - SOF Geospatial Intelligence Processing Exploitation, and Dissemination (SGIP) | Various | Various : Various | 15.847 | 0.734 | Jan 2018 | 0.749 | Jan 2019 | 2.500 | Jan 2020 | - | | 2.500 | Continuing | Continuing | - |
| Development and Integration - Enterprise / All Source Information Fusion (ENT/ASIF) | Various | Various : Various | 8.347 | 2.301 | Jan 2018 | 2.347 | Jan 2019 | 1.459 | Jan 2020 | - | | 1.459 | Continuing | Continuing | - |
| Independent Verification and Validation - SOF Signals Intelligence Processing Exploitation, and Dissemination (SOF SIGINT PED) | MIPR | MITRE : Bedford, MA | 1.725 | 0.295 | Mar 2018 | 0.301 | Mar 2019 | 0.615 | Mar 2020 | - | | 0.615 | Continuing | Continuing | - |
| Prior Year Funding - Completed Efforts | Various | Various : Various | 1.788 | - | | - | | - | | - | | - | 0.000 | 1.788 | - |
| | | **Subtotal** | 27.707 | 3.330 | | 3.397 | | 4.574 | | - | | 4.574 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2018 Cost | FY 2018 Award Date | FY 2019 Cost | FY 2019 Award Date | FY 2020 Base Cost | FY 2020 Base Award Date | FY 2020 OCO Cost | FY 2020 OCO Award Date | FY 2020 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program Support | C/FFP | SITEC : Various | 4.138 | 0.939 | Mar 2018 | 1.646 | Mar 2019 | 0.259 | Mar 2020 | - | | 0.259 | Continuing | Continuing | - |
| Prior Year Funding - Completed Efforts | Various | Various : Various | 0.576 | - | | - | | - | | - | | - | 0.000 | 0.576 | - |
| | | **Subtotal** | 4.714 | 0.939 | | 1.646 | | 0.259 | | - | | 0.259 | Continuing | Continuing | N/A |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 United States Special Operations Command | | | Date: March 2019 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* | |

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

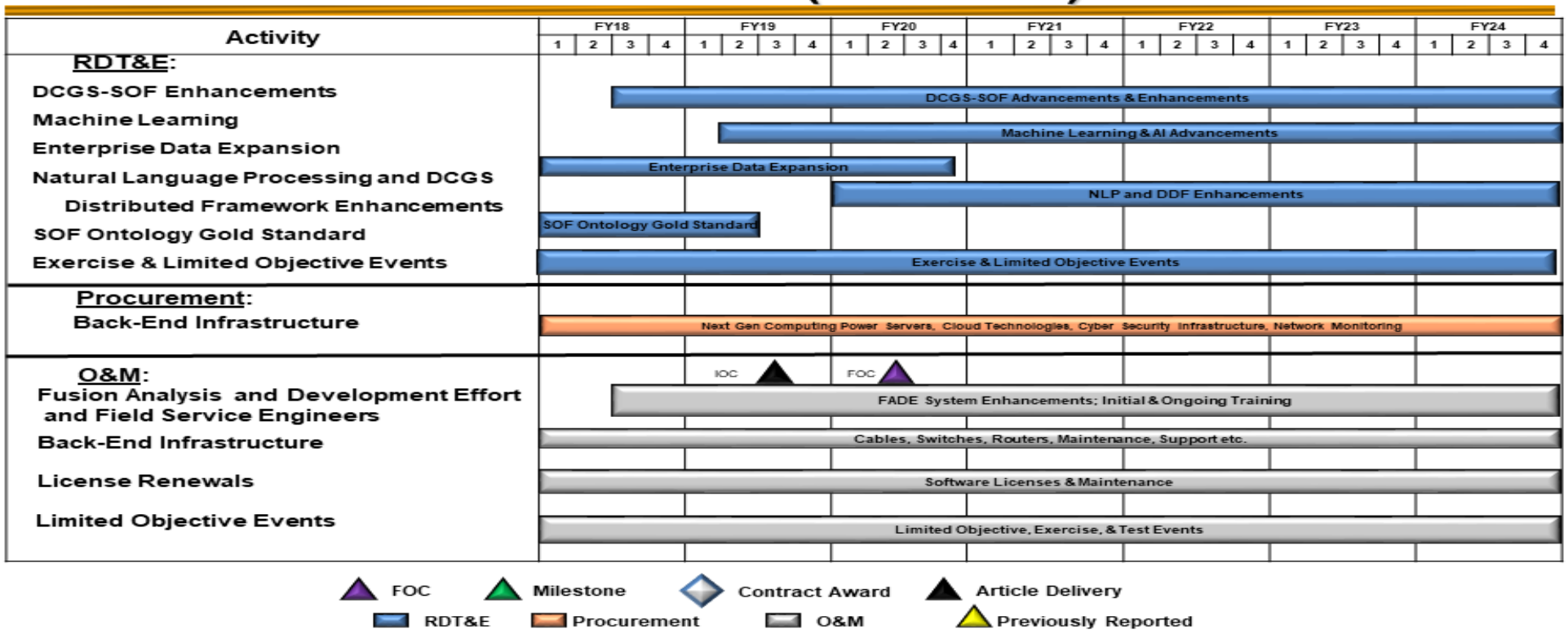
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2018 Cost | FY 2018 Award Date | FY 2019 Cost | FY 2019 Award Date | FY 2020 Base Cost | FY 2020 Base Award Date | FY 2020 OCO Cost | FY 2020 OCO Award Date | FY 2020 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test and Evaluation | MIPR | SPAWAR : Charleston, SC | 1.956 | - | | - | | 0.854 | Oct 2019 | - | | 0.854 | Continuing | Continuing | - |
| Independent Verification and Validation | MIPR | MITRE : Bedford, MA | 2.880 | 0.295 | Oct 2017 | 0.295 | Oct 2018 | 0.210 | Oct 2019 | - | | 0.210 | Continuing | Continuing | - |
| Interoperability Support | MIPR | JITC : Ft Huachuca, AZ | 1.639 | 0.221 | Feb 2018 | 0.225 | Feb 2019 | 0.232 | Feb 2020 | - | | 0.232 | Continuing | Continuing | - |
| Interoperability Testing | C/FFP | SITEC : Various | 4.330 | 0.703 | Mar 2018 | 0.723 | Mar 2019 | 0.230 | Mar 2020 | - | | 0.230 | Continuing | Continuing | - |
| | | **Subtotal** | 10.805 | 1.219 | | 1.243 | | 1.526 | | - | | 1.526 | Continuing | Continuing | N/A |

| | Prior Years | FY 2018 | | FY 2019 | | FY 2020 Base | | FY 2020 OCO | | FY 2020 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 43.226 | 5.488 | | 6.286 | | 6.359 | | - | | 6.359 | Continuing | Continuing | N/A |

**Remarks**

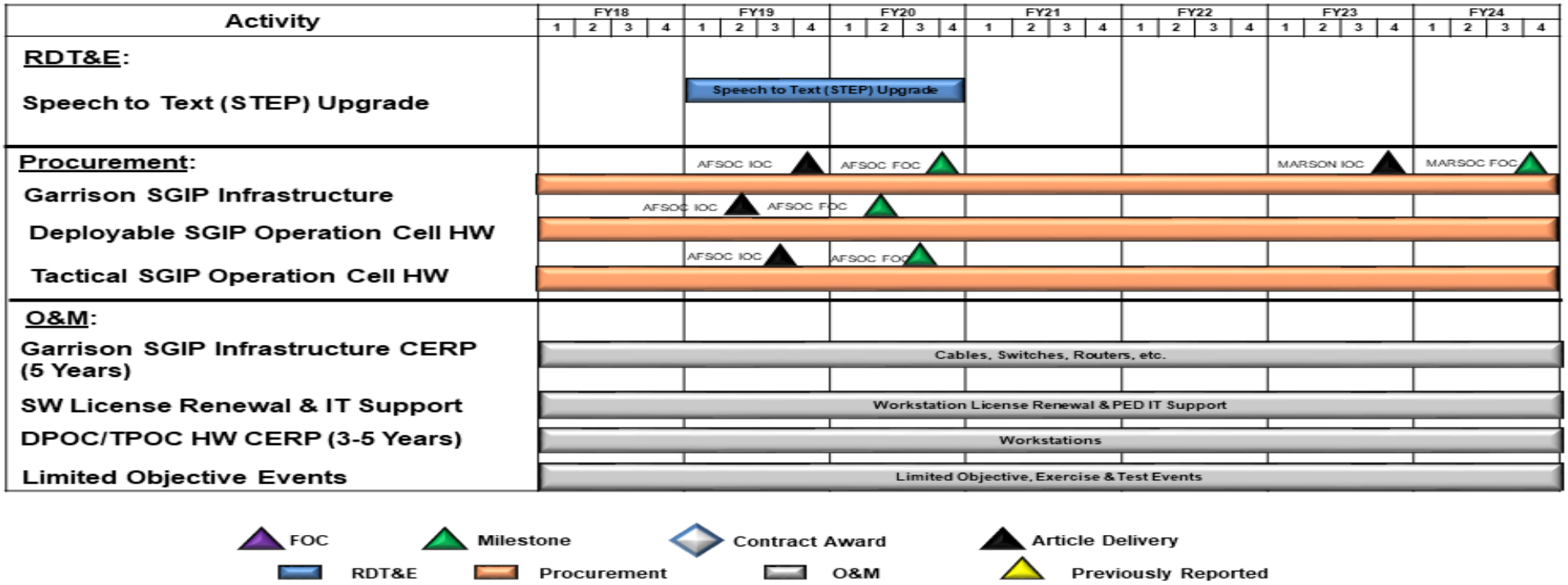
| Exhibit R-4, RDT&E Schedule Profile: PB 2020 United States Special Operations Command | | Date: March 2019 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* |

# DCGS-SOF
# ENTERPRISE/ ALL SOURCE INFORMATION FUSION (ENT/ASIF)



| Exhibit R-4, RDT&E Schedule Profile: PB 2020 United States Special Operations Command | | Date: March 2019 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* |

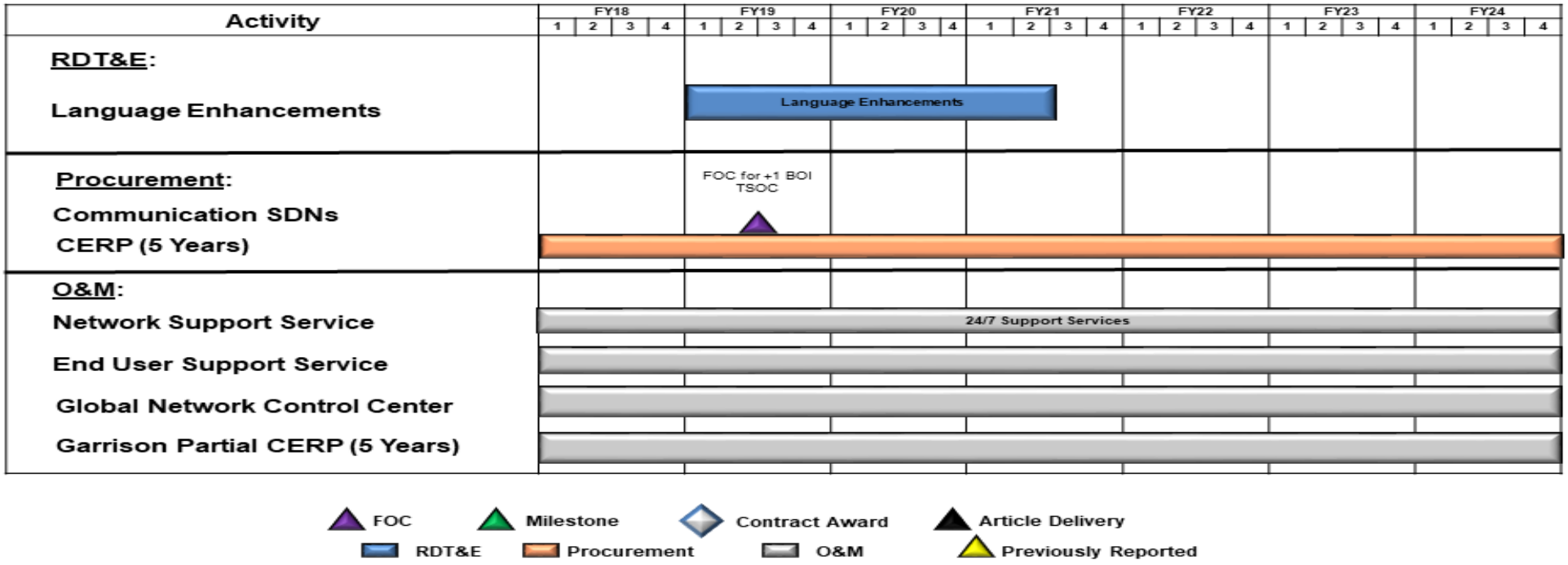
# DCGS-SOF
# SOF GEOSPATIAL INTELLIGENCE PROCESSING, EXPLOITATION, & DISSEMINATION (SGIP)



| Exhibit R-4, RDT&E Schedule Profile: PB 2020 United States Special Operations Command | | Date: March 2019 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* |

# DCGS-SOF

## SOF SIGNALS INTELLIGENCE PROCESSING, EXPLOITATION, & DISSEMINATION (SOF SIGINT PED)



| Exhibit R-4A, RDT&E Schedule Details: PB 2020 United States Special Operations Command | | Date: March 2019 |
|---|---|---|
| **Appropriation/Budget Activity**<br>0400 / 7 | **R-1 Program Element (Number/Name)**<br>PE 0305208BB / *Distributed Common Ground/Surface Systems* | **Project (Number/Name)**<br>S400A / *Distributed Common Ground/ Surface Systems* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Distributed Common Ground/Surface Systems*** | | | | |
| DCGS-SOF enhancements in partnership with FADE develop, integrate, and test emerging technologies and capabilities to include: advanced analytics, user interface, disconnected operations into baseline | 3 | 2018 | 4 | 2024 |
| Develop, integrate, test next gen DCGS-SOF machine learning and artificial intelligence seeking to automatically identify and tag objects from ingested images and documents | 2 | 2019 | 4 | 2024 |
| Partner with FADE to integrate and test SOF and external aggregated Data Layers and Sources sharing DCGS-SOF FADE information with Coalition partners and refine back end design and infrastructure | 1 | 2018 | 4 | 2020 |
| Develop, integrate, test next gen DCGS-SOF tech, capabilities: Natural Language Processing (NLP), speech-to-text, language enhancements, upgrade imaging, human/ object detection & characterization | 1 | 2019 | 4 | 2024 |
| DCGS Distributed Framework (DDF) improvements with FADE and DISR/ICSR/ DI2E to develop, integrate, & test next gen DDF architecture to comply with content discovery, retrieval data & IdAM/PKI standards | 1 | 2020 | 4 | 2024 |
| Develop, integrate, and test next gen DCGS-SOF ontologies utilizing a Gold Standard Data Set to improve object identification and tagging across the advanced analytics enterprise | 1 | 2018 | 2 | 2019 |
| Participate in Exercise and Limited Objective events to include: Trident Spectre, Enterprise Challenge, Storm Force, and DI2E Plugfest (annually); United Vision (even fiscal years) | 1 | 2018 | 4 | 2024 |