

UNCLASSIFIED

| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | | | | | | | | | Date: February 2018 | | |
|--|-------------|---------|---------|--------------|---|---------------|---------|---------|---------|---------------------|------------------|------------|
| Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development | | | | | R-1 Program Element (Number/Name) PE 1203179F I Integrated Broadcast Service (IBS) | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total | FY 2020 | FY 2021 | FY 2022 | FY 2023 | Cost To Complete | Total Cost |
| Total Program Element | - | 8.833 | 8.747 | 8.568 | 0.000 | 8.568 | 8.728 | 8.880 | 9.064 | 9.229 | Continuing | Continuing |
| 674779: Integrated Broadcast Service (IBS) | - | 8.833 | 8.747 | 8.568 | 0.000 | 8.568 | 8.728 | 8.880 | 9.064 | 9.229 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

In FY2018, PE0305179F Integrated Broadcast System efforts were transferred to PE1203179F, Integrated Broadcast System due to the creation of a new Major Force Program for Space. FY2017 funding is now documented in the exhibits for PE1203179F

A. Mission Description and Budget Item Justification

The IBS fulfills the warfighter's requirements for worldwide threat warning and situational awareness information with timely production and simultaneous dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) derived combat information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined in near real time by strategic, operational and tactical sensors.

IBS is comprised of the following:

- A Common Interactive Broadcast (CIB) on UHF (Ultra High Frequency) satellite channel using a Common Message Format (CMF) and a Military Standard (MIL-STD) Demand Assigned Multiple Access (DAMA) compliant waveform and Line of Sight (LOS) using the Wideband Networking Waveform (WNW) and Joint Tactical Terminal (JTT).
- IBS-Network Services (IBS-NS) includes two Global IBS Network Servers (GINS) and four Theater Interface Nodes (TINs) to support the geographic Combatant Commanders (COCOMs), all built to validated warfighter requirements.
- Two GINS receive data from each theater and integrate this data into a worldwide picture available to all network/broadcast users.
- Four regional TINs allow local and out-of-theater users (not directly receiving IBS broadcast) to receive the CIB information broadcast. Additionally, the TIN will receive and inject data into the CIB for producers without access to the theater CIB.

This PE funds:

- Development/upgrades of IBS (IBS-NS, CIB, and CMF)

This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver IBS weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

UNCLASSIFIED

| | | | | | | |
|---|--|---|---------|---------------------|-------------|---------------|
| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development | | R-1 Program Element (Number/Name) PE 1203179F I Integrated Broadcast Service (IBS) | | | | |
| This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. | | | | | | |
| B. Program Change Summary (\$ in Millions) | | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total |
| Previous President's Budget | | 8.833 | 8.747 | 8.632 | 0.000 | 8.632 |
| Current President's Budget | | 8.833 | 8.747 | 8.568 | 0.000 | 8.568 |
| Total Adjustments | | 0.000 | 0.000 | -0.064 | 0.000 | -0.064 |
| • Congressional General Reductions | | 0.000 | 0.000 | | | |
| • Congressional Directed Reductions | | 0.000 | 0.000 | | | |
| • Congressional Rescissions | | 0.000 | 0.000 | | | |
| • Congressional Adds | | 0.000 | 0.000 | | | |
| • Congressional Directed Transfers | | 0.000 | 0.000 | | | |
| • Reprogrammings | | 0.000 | 0.000 | | | |
| • SBIR/STTR Transfer | | 0.000 | 0.000 | | | |
| • Other Adjustments | | 0.000 | 0.000 | -0.064 | 0.000 | -0.064 |
| C. Accomplishments/Planned Programs (\$ in Millions) | | | | FY 2017 | FY 2018 | FY 2019 |
| Title: Development/upgrades of the Integrated Broadcast Service (IBS-NS, CIB, and CMF) | | | | 7.343 | 7.257 | 7.078 |
| Description: Development/upgrades of the IBS (IBS-NS, CIB, and CMF). | | | | | | |
| FY 2018 Plans: | | | | | | |
| - Continuing to synchronize and integrate with DOD IC Cloud as a potential producer/consumer; the capability will provide a long term searchable data store for IBS information. | | | | | | |
| - Continuing to upgrade the IBS Enterprise-level real-time and analytic views on Global and COCOM watch floors; further integrate uplink sites with associated TIN by reducing equipment overhead and streamlining data flows | | | | | | |
| - Continuing to upgrade volumetric increase to provide ten times performance enhancement to throughput, storage and replay to address message volume; this will increase the enterprise output to 100M messages per day | | | | | | |
| - Continuing to provide resilience to IBS CIB UHF Broadcast by utilizing the MUOS Wideband Code Division Multiple Access SATCOM payload and supporting the receipt of IBS on 1st generation MUOS terminals | | | | | | |
| - Continuing to upgrade and connect the COCOM J2 CIB planning function with the COCOM J6 Integrated Waveform planning function | | | | | | |

UNCLASSIFIED

| | | | | |
|---|--|---|----------------|----------------|
| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i> | | R-1 Program Element (Number/Name) PE 1203179F / <i>Integrated Broadcast Service (IBS)</i> | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2017 | FY 2018 | FY 2019 |
| <ul style="list-style-type: none"> - Continuing to upgrade the CIB Planning Tool and IBS-NS capability at the COCOMs to allow automated planning to occur for active producers - Continuing development of the IBS Thin Client, which provides a light weight application to receive IBS information on mobile devices - Continuing development of the CIB MUOS Group Integration - Many to Many, which achieves IBS Over the Air requirements on the MUOS, WCDMA payload - Continuing to upgrade the P5 system health and welfare status at the COCOMs to include Alt-Path -- Continuing to upgrade the resiliency of IBS to include polar coverage - Continuing to upgrade and transition current classified dissemination path to new architecture and enable SCI-level dissemination of data - Continuing enhancement of uplink sites to handle operational surge increases - Continuing to upgrade the monitoring and control tools to assist in assured dissemination tasks at COCOM uplink watches, development and fielding of Downlink Monitoring Element (DME) FY 2019 Plans: <ul style="list-style-type: none"> - Will continue to synchronize and integrate with DOD IC Cloud as a potential producer/consumer; the capability will provide a long term searchable data store for IBS information. - Will continue to upgrade the IBS Enterprise-level real-time and analytic views on Global and COCOM watch floors; further integrate uplink sites with associated TIN by reducing equipment overhead and streamlining data flows - Will continue to upgrade volumetric increase to provide ten times performance enhancement to throughput, storage and replay to address message volume; this will increase the enterprise output to 100M messages per day - Will continue to provide resilience to IBS CIB UHF Broadcast by utilizing the MUOS Wideband Code Division Multiple Access SATCOM payload and supporting the receipt of IBS on 1st generation MUOS terminals | | | | |

UNCLASSIFIED

| | | | | |
|---|--|---|----------------|----------------|
| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i> | | R-1 Program Element (Number/Name) PE 1203179F <i>I Integrated Broadcast Service (IBS)</i> | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2017 | FY 2018 | FY 2019 |
| - Will continue to upgrade and connect the COCOM J2 CIB planning function with the COCOM J6 Integrated Waveform planning function - Will continue to upgrade the CIB Planning Tool and IBS-NS capability at the COCOMs to allow automated planning to occur for active producers - Will continue development of the IBS Thin Client, which provides a light weight application to receive IBS information on mobile devices - Will continue development of the CIB MUOS Group Integration - Many to Many, which achieves IBS Over the Air requirements on the MUOS, WCDMA payload - Will continue to upgrade the P5 system health and welfare status at the COCOMs to include Alt-Path -- Will continue to upgrade the resiliency of IBS to include polar coverage - Will continue to upgrade and transition current classified dissemination path to new architecture and enable SCI-level dissemination of data - Will continue enhancement of uplink sites to handle operational surge increases - Will continue to upgrade the monitoring and control tools to assist in assured dissemination tasks at COCOM uplink watches, development and fielding of DME FY 2018 to FY 2019 Increase/Decrease Statement: Funding decreased due to level of effort | | | | |
| Title: Enterprise Systems Engineering Description: Enterprise Systems Engineering/CMF Integration/CIB Integration. FY 2018 Plans: - Continuing Enterprise Systems Engineering/CMF Integration/CIB Integration FY 2019 Plans: - Will continue Enterprise Systems Engineering/CMF Integration/CIB Integration FY 2018 to FY 2019 Increase/Decrease Statement: | | 0.700 | 0.700 | 0.700 |

UNCLASSIFIED

| | | | |
|--|----------------|---|-------------------------|
| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | Date: February 2018 | |
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i> | | R-1 Program Element (Number/Name) PE 1203179F <i>I Integrated Broadcast Service (IBS)</i> | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2017 | FY 2018 |
| N/A | | | |
| Title: Test & Evaluation | | 0.790 | 0.790 |
| Description: Tests & Evaluates the IBS system. | | | |
| FY 2018 Plans: - Continuing test and evaluation of the IBS system | | | |
| FY 2019 Plans: - Will continue test and evaluation of the IBS system | | | |
| FY 2018 to FY 2019 Increase/Decrease Statement: N/A | | | |
| Accomplishments/Planned Programs Subtotals | | 8.833 | 8.747 |
| D. Other Program Funding Summary (\$ in Millions) | | | |
| Line Item | FY 2017 | FY 2018 | FY 2019 Base |
| • OPAF 03 Line Item 832070: <i>Intelligence Comm Equipment</i> | 16.452 | 17.283 | 16.580 |
| | | | FY 2019 OCO |
| | | | - |
| | | | FY 2019 Total |
| | | | 16.580 |
| | | | FY 2020 |
| | | | 16.875 |
| | | | FY 2021 |
| | | | 17.179 |
| | | | FY 2022 |
| | | | 17.490 |
| | | | FY 2023 |
| | | | - |
| | | | Cost To Complete |
| | | | Continuing |
| | | | Total Cost |
| | | | Continuing |
| Remarks | | | |
| E. Acquisition Strategy | | | |
| IBS is in the PEO Battle Management portfolio and executed by AFLCMC/HBG. | | | |
| IBS uses an Adaptive Life-cycle approach that provides incremental improvement and new capability in 90-day cycles. | | | |
| For contracting efforts, a Single Award IDIQ contract with multiple task orders was awarded to CACI International Inc. | | | |
| F. Performance Metrics | | | |
| Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission. | | | |

UNCLASSIFIED

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force | | | | | | | | | | | | Date: February 2018 | | | |
|---|------------------------|--|-------------|---------|------------|---|------------|--------------|------------|--|------------|---------------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity 3600 / 7 | | | | | | R-1 Program Element (Number/Name) PE 1203179F / Integrated Broadcast Service (IBS) | | | | Project (Number/Name) 674779 / Integrated Broadcast Service (IBS) | | | | | |
| Product Development (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| IBS (IBS-NS, CIB, and CMF) Development/ Upgrades | Various | CACI International Inc/Other Government Agency : Various | - | 7.183 | Oct 2016 | 7.097 | Oct 2017 | 6.918 | Oct 2018 | - | | 6.918 | Continuing | Continuing | - |
| Subtotal | | | - | 7.183 | | 7.097 | | 6.918 | | - | | 6.918 | Continuing | Continuing | N/A |
| Test and Evaluation (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Interoperability and Development Testing | MIPR | JITC : Ft Huachuca, AZ | - | 0.500 | Oct 2016 | 0.500 | Oct 2017 | 0.500 | Oct 2018 | - | | 0.500 | Continuing | Continuing | - |
| Responsible Test Organization (RTO) | PO | 46th Test Squadron : Eglin AFB, FL | - | 0.290 | Oct 2016 | 0.290 | Oct 2017 | 0.290 | Oct 2018 | - | | 0.290 | Continuing | Continuing | - |
| Subtotal | | | - | 0.790 | | 0.790 | | 0.790 | | - | | 0.790 | Continuing | Continuing | N/A |
| Management Services (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Program Management/ Engineering Support | C/FFP | Creedence : Warner Robins, GA | - | 0.160 | Nov 2016 | 0.160 | Nov 2017 | 0.160 | Nov 2018 | - | | 0.160 | Continuing | Continuing | - |
| Enterprise Engineering/ CMF Integration/CIB Integration | SS/CPFF | L3 Comm, IS : Greenville, TX | - | 0.700 | Jan 2017 | 0.700 | Nov 2017 | 0.700 | Nov 2018 | - | | 0.700 | Continuing | Continuing | - |
| Subtotal | | | - | 0.860 | | 0.860 | | 0.860 | | - | | 0.860 | Continuing | Continuing | N/A |
| | | | Prior Years | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals | | | - | 8.833 | | 8.747 | | 8.568 | | - | | 8.568 | Continuing | Continuing | N/A |

UNCLASSIFIED

| | | | | | | | | | | |
|---|-------------|---------|---------|---|-------------|---------------|--|------------|--------------------------|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force | | | | | | | Date: February 2018 | | | |
| Appropriation/Budget Activity 3600 / 7 | | | | R-1 Program Element (Number/Name) PE 1203179F / Integrated Broadcast Service (IBS) | | | Project (Number/Name) 674779 / Integrated Broadcast Service (IBS) | | | |
| | Prior Years | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total | Cost To Complete | Total Cost | Target Value of Contract | |
| Remarks | | | | | | | | | | |

UNCLASSIFIED

| | | | | | |
|---|--|---|----------------------------|--|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force | | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600 / 7 | | R-1 Program Element (Number/Name) PE 1203179F / <i>Integrated Broadcast Service (IBS)</i> | | | Project (Number/Name) 674779 / <i>Integrated Broadcast Service (IBS)</i> |

| | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | | FY 2023 | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| IBS-NS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Initiate developing the IBS Thin Client | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Initiate developing the CIB MUOS Group Integration - Many to Many | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Upgrade and transition of current classified dissemination path to new architecture and enabling SCI-level dissemination of data | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Upgrade the uplink sites to handle operational surge increases | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop the monitoring and control tools to assist in assured dissemination | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Integrate CMF updates into IBS-NS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Enterprise Systems Engineering of IBS (IBS-NS, CIB, and CMF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Testing and Evaluation of IBS (IBS-NS, CIB, and CMF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

UNCLASSIFIED

| | | | |
|--|---|--|----------------------------|
| Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force | | | Date: February 2018 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 1203179F / <i>Integrated Broadcast Service (IBS)</i> | Project (Number/Name) 674779 / <i>Integrated Broadcast Service (IBS)</i> | |

Schedule Details

| Events by Sub Project | Start | | End | |
|--|----------------|-------------|----------------|-------------|
| | Quarter | Year | Quarter | Year |
| IBS-NS | | | | |
| Initiate developing the IBS Thin Client | 1 | 2017 | 1 | 2017 |
| Initiate developing the CIB MUOS Group Integration - Many to Many | 1 | 2017 | 1 | 2017 |
| Upgrade and transition of current classified dissemination path to new architecture and enabling SCI-level dissemination of data | 1 | 2017 | 4 | 2019 |
| Upgrade the uplink sites to handle operational surge increases | 1 | 2017 | 4 | 2019 |
| Develop the monitoring and control tools to assist in assured dissemination | 1 | 2017 | 4 | 2019 |
| Integrate CMF updates into IBS-NS | 1 | 2017 | 4 | 2022 |
| Enterprise Systems Engineering of IBS (IBS-NS, CIB, and CMF) | 1 | 2017 | 4 | 2023 |
| Testing and Evaluation of IBS (IBS-NS, CIB, and CMF) | 1 | 2017 | 4 | 2022 |