| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force | | | | | | | | | | | Date: February 2019 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Appropriation/Budget Activity** 3600: *Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development* | | | | | **R-1 Program Element (Number/Name)** PE 1201017F *I Global Sensor Integrated on Network (GSIN)* | | | | | | | |
| **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 | - | 0.000 | 0.000 | 3.647 | 0.000 | 3.647 | 3.709 | 0.000 | 0.000 | 0.000 | 0.000 | 7.356 |
| 675368: *GSIN (Global Integrated Sensor Network)* | - | 0.000 | 0.000 | 3.647 | 0.000 | 3.647 | 3.709 | 0.000 | 0.000 | 0.000 | 0.000 | 7.356 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

In FY 2020, PE 0301017F, Global Sensor Integrated on Network (GSIN), Project 675368, GSIN (Global Integrated Sensor Network), efforts were transferred to PE 1201017F, Global Sensor Integrated on Network (GSIN), Project Project 675368, GSIN (Global Integrated Sensor Network), for more accurate classification of work.

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

The mission of USSTRATCOM is to establish and provide full-spectrum, global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives and to provide operational space support, integrated missile defense, Global Command Control, Communications, and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter.

The Nation's strategic C2 sensors, and mission planning programs cannot rapidly exchange information across multiple missions creating ambiguity that delays time critical national C2 decision making processes. GSIN developed and established a unified schema that integrates disparate Missile Warning/Missile Defense (MW/MD) data into a single exposed data set providing redundant and unambiguous MW/MD data to national leadership. GSIN also enables existing radars and sensors to provide data in net-centric formats consumable by other authorized systems and mission areas, thus reducing the need to acquire more systems. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

GSIN directly supports USSTRATCOM and other COCOMs and MAJCOM mission sets. GSIN meshes together selected systems and sensors (from tactical to strategic), including the Nation's most modern and capable assets, taking advantage of their larger numbers, improved algorithms, mobility, and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. Repurposing these traditionally stove-piped systems and sensors, GSIN enables the warfighter in several ways. GSIN enables creation of a User Defined Operating Picture (UDOP) to provide a single, unambiguous missile event picture allowing realtime collaboration for nuclear C2 and improved senior leader situational awareness (SA) for effective decision-making. GSIN also improves Space Situational Awareness (SSA) by tapping additional sensor capability and provides this data for the larger space order of battle capabilities. GSIN dramatically improves the ingestion of nontraditional, but readily available, non-US government and commercial data to the Air Force Space Command (AFSPC) catalog managed by the 18SPCC at Vandenberg AFB. GSIN addresses NORTHCOM/STRATCOM's signed Joint Emergent Operational Need (JEON) ST-0010 request for uninterrupted traditional and non-traditional sensor data integration and the Global Threat Characterization Assessment (GTCA) Operational Planning Team report. GSIN provides critical and unique data to the large AFSPC SSA data repositories to facilitate the large Space Battle Management Command and Control (BMC2) suite of capabilities/programs. Finally, GSIN provides Machine Learner and Data Analysis functions to optimize and operate situational awareness in the field.

| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force | Date: February 2019 |
|---|---|
| **Appropriation/Budget Activity**<br>3600: *Research, Development, Test & Evaluation, Air Force I* BA 7:<br>*Operational Systems Development* | **R-1 Program Element (Number/Name)**<br>PE 1201017F *I Global Sensor Integrated on Network (GSIN)* |

This program element may include necessary civilian pay expenses required to manage, execute, and deliver GSIN 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.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is $14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | 0.000 | 0.000 | 3.647 | 0.000 | 3.647 |
| Total Adjustments | 0.000 | 0.000 | 3.647 | 0.000 | 3.647 |
| • 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 | 3.647 | 0.000 | 3.647 |

| C. Accomplishments/Planned Programs ($ in Millions) | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| *Title:* Radar, sensor, technical intelligence (TI), and Allied Systems | 0.000 | 0.000 | 2.200 |
| *Description:* Radar, sensor, technical intelligence and Allied Systems: Designs, develops, exposes and integrates data from radar, sensors and technical intelligence systems in regions of the world where potential GSIN users currently do not have coverage. Provide real time data from systems that previously reported in hours or days after critical events. Conduct studies/ surveys/meetings as necessary to continually identify systems meeting GSIN user data exposure needs. Space Situational Awareness (SSA): Designs, develops, tests, exposes, and integrates SSA data from previously untapped systems into space production systems and the Global Information Grid (GIG). Develop implementation plans to mature data exposure capabilities.<br><br>*FY 2019 Plans:* | | | |

| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force | | Date: February 2019 | | |
|---|---|---|---|---|
| **Appropriation/Budget Activity**<br>3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development* | | **R-1 Program Element (Number/Name)**<br>PE 1201017F *I Global Sensor Integrated on Network (GSIN)* | | |

| C. Accomplishments/Planned Programs ($ in Millions) | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| N/A<br><br>***FY 2020 Plans:***<br>- Begin Implementing Strategic Study<br>- Complete deployment and testing of Radar/Sensor/TI Project 4 and transition to PoR<br>- Identify and begin development of Radar/Sensor/TI Project 5.<br><br>***FY 2019 to FY 2020 Increase/Decrease Statement:***<br>Efforts transferred from PE 0301017F to this PE in FY2020. | | | |
| ***Title:*** Data Services, Net Centric Integration and Configuration Control, and program outreach<br><br>***Description:*** Develop common XML net-enabled data schemas and configuration management processes and procedures for Missile Warning, Missile Defense, Space, MASINT/Technical Intelligence, and Sensor data to manage the XML schema and associated XML messaging and services. Develop technical outreach for potential new GSIN data consumers and providers who require GSIN sensor data. Upgrade GSIN capabilities as DISA Enterprise Services evolve. Continue modifications to data services. Support integration of GSIN sensor data into appropriate registries/catalogs. Continue development of GSIN data services to enable visualization in a common operating picture. Conduct studies and demonstrations of SSA capabilities, data correlation, and assessment services for risk reduction evaluations.<br><br>***FY 2019 Plans:***<br>N/A<br><br>***FY 2020 Plans:***<br>- Continue developing plans to address NORTHCOM/USSTRATCOM JEON GTCA. Advocate and secure additional RDT&E funding if necessary.<br>- Begin development of a record capability of GSIN exposed data and play it back in real time through a visualization tool.<br>- Continue developing and releasing periodic configuration control processes.<br>- Continue technical outreach processes for new GSIN data consumers and providers.<br>- Deliver new GSIN capabilities to match evolving DISA Enterprise Service updates.<br>- Continue development of new and improved data services.<br>-- Complete deployment and integration of Radar/Sensor/TI Project 4 into DISA Enterprise Services.<br>-- Begin development and integration of Radar/Sensor/TI Project 5 into DISA Enterprise Services.<br>-- Begin development and integration of Radar/Sensor/TI Project 6 into DISA Enterprise Services.<br><br>***FY 2019 to FY 2020 Increase/Decrease Statement:*** | 0.000 | 0.000 | 1.447 |

| **Exhibit R-2**, **RDT&E Budget Item Justification:** PB 2020 Air Force | **Date:** February 2019 |
|---|---|
| **Appropriation/Budget Activity**<br>3600: *Research, Development, Test & Evaluation, Air Force I* BA 7:<br>*Operational Systems Development* | **R-1 Program Element (Number/Name)**<br>PE 1201017F *I Global Sensor Integrated on Network (GSIN)* |

| **C. Accomplishments/Planned Programs ($ in Millions)** | **FY 2018** | **FY 2019** | **FY 2020** |
|---|---|---|---|
| Efforts transferred from PE 0301017F to this PE in FY2020. | | | |
| **Accomplishments/Planned Programs Subtotals** | 0.000 | 0.000 | 3.647 |

**D. Other Program Funding Summary ($ in Millions)**
 N/A
**Remarks**


**E. Acquisition Strategy**
 GSIN uses existing government contract vehicles,from agencies such as Missile Defense Agency (MDA) or Air Force Life Cycle Management Center (AFLCMC), to develop and modernize the combined SSA/MW/MD/MASINT/TI data exposure architecture and solution. The contracts are managed by the relevant organizations contracting office. GSIN does not award or manage any contracts.  The AFLCMC at Hanscom AFB, (AFLCMC/HB) provides necessary program management, financial management, and other support as may be applicable for GSIN.

**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.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force | | | | | | | | | | | | | Date: February 2019 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | | | | | | **R-1 Program Element (Number/Name)**<br>PE 1201017F / Global Sensor Integrated on Network (GSIN) | | | | | | **Project (Number/Name)**<br>675368 / GSIN (Global Integrated Sensor Network) | | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GSIN Space Situational Awareness Data Exposure - Radar/Sensor/TI Project 5 | C/CPAF | Raytheon : Colorado Springs, CO : TBD | - | - | | - | | 1.417 | Jan 2020 | - | | 1.417 | Continuing | Continuing | - |
| GSIN Space Situational Awareness Data Exposure - Radar/Sensor/TI Project 6 | TBD | Raytheon : Boston, MA : TBD | - | - | | - | | 1.200 | Jan 2020 | - | | 1.200 | Continuing | Continuing | - |
| Strategic Study | C/CPAF | KBR Wyle : Omaha, ND : TBD | - | - | | - | | 0.500 | Nov 2019 | - | | 0.500 | Continuing | Continuing | - |
| **Subtotal** | | | - | - | | - | | 3.117 | | - | | 3.117 | Continuing | Continuing | N/A |

**Management Services ($ 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GSIN Program Management Administration | C/FFP | Various : Omaha, NE : TBD | - | - | | - | | 0.530 | Oct 2019 | - | | 0.530 | Continuing | Continuing | - |
| **Subtotal** | | | - | - | | - | | 0.530 | | - | | 0.530 | 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** | | | - | - | | 0.000 | | 3.647 | | - | | 3.647 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force | | Date: February 2019 |
|---|---|---|
| Appropriation/Budget Activity<br>3600 / 7 | R-1 Program Element (Number/Name)<br>PE 1201017F / Global Sensor Integrated on Network (GSIN) | Project (Number/Name)<br>675368 / GSIN (Global Integrated Sensor Network) |

| | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | | FY 2023 | | | | FY 2024 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| **GSIN Data Exposure** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (MASINT 4) Production/Fielding | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | |
| (MASINT 4) Integration and Testing | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | |
| (MASINT 4) Operational | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | |
| (MASINT 5) Design and Development | | | | | | | | | | █ | █ | | | | | | | | | | | | | | | | | |
| (MASINT 5) Production/Fielding | | | | | | | | | | | | █ | █ | | | | | | | | | | | | | | | |
| (MASINT 5) Integration and Testing | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | |
| (MASINT 5) Operational | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | |
| (Radar/MASINT 6) Design and Development | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | |
| (Radar/MASINT 6) Production/Fielding | | | | | | | | | | | | █ | █ | | | | | | | | | | | | | | | |
| (Radar/MASINT 6) Integration and Testing | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | |
| (Radar/MASINT 6) Operational | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | |
| (Radar/MASINT 7) Design and Development | | | | | | | | | | | | | | | | | █ | █ | | | | | | | | | | |
| (Radar/MASINT 7) Production/Fielding | | | | | | | | | | | | | | | | | | | █ | █ | | | | | | | | |
| (Radar/MASINT 7) Integration and Testing | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | |
| (Radar/MASINT 7) Operational | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | |
| **GSIN Publisher** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Recorder Design/Development | | | | | | | | | █ | █ | | | | | | | | | | | | | | | | | | |
| Recorder Production/Fielding | | | | | | | | | | | █ | █ | █ | | | | | | | | | | | | | | | |
| Recorder Integration and Testing | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | |
| **GSIN Complete** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deployment of Publisher Recorder | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | |

| Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force | | | Date: February 2019 | |
|---|---|---|---|---|
| **Appropriation/Budget Activity**<br>3600 / 7 | **R-1 Program Element (Number/Name)**<br>PE 1201017F / *Global Sensor Integrated on Network (GSIN)* | | **Project (Number/Name)**<br>675368 / *GSIN (Global Integrated Sensor Network)* | |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| *GSIN Data Exposure* | | | | |
| (MASINT 4) Production/Fielding | 1 | 2020 | 1 | 2020 |
| (MASINT 4) Integration and Testing | 3 | 2020 | 3 | 2020 |
| (MASINT 4) Operational | 4 | 2020 | 4 | 2020 |
| (MASINT 5) Design and Development | 3 | 2020 | 4 | 2020 |
| (MASINT 5) Production/Fielding | 1 | 2021 | 2 | 2021 |
| (MASINT 5) Integration and Testing | 3 | 2021 | 3 | 2021 |
| (MASINT 5) Operational | 4 | 2021 | 4 | 2021 |
| (Radar/MASINT 6) Design and Development | 4 | 2021 | 4 | 2021 |
| (Radar/MASINT 6) Production/Fielding | 1 | 2021 | 2 | 2021 |
| (Radar/MASINT 6) Integration and Testing | 3 | 2021 | 3 | 2021 |
| (Radar/MASINT 6) Operational | 4 | 2021 | 4 | 2021 |
| (Radar/MASINT 7) Design and Development | 1 | 2022 | 2 | 2022 |
| (Radar/MASINT 7) Production/Fielding | 3 | 2022 | 4 | 2022 |
| (Radar/MASINT 7) Integration and Testing | 3 | 2022 | 3 | 2022 |
| (Radar/MASINT 7) Operational | 4 | 2022 | 4 | 2022 |
| *GSIN Publisher* | | | | |
| Recorder Design/Development | 2 | 2020 | 4 | 2020 |
| Recorder Production/Fielding | 4 | 2020 | 2 | 2021 |
| Recorder Integration and Testing | 2 | 2021 | 2 | 2021 |
| *GSIN Complete* | | | | |
| Deployment of Publisher Recorder | 3 | 2021 | 3 | 2021 |