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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force **Date:** February 2016

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 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	0.000	5.974	3.470	0.000	3.470	3.539	3.605	3.672	3.737	Continuing	Continuing
675368: <i>GSIN (Global Integrated Sensor Network)</i>	-	0.000	5.974	3.470	0.000	3.470	3.539	3.605	3.672	3.737	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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. This mission has been defined by the 2011 Unified Command Plan (UCP) change 1, the CJCS GSIN Planning Order (PLANORD) dated 06/1400Z Mar 10, the USSTRATCOM GSIN PLANORD dated 29/1943Z Jan 10 and a memorandum from the Senior Warfighter Forum (SWarF) to the VCJCS dated 13 October 2011 documenting data and information sharing deficiencies and recommendations to address them. This guidance continues to receive senior level attention as recently reiterated in the AFSPC/CC memo "Commander's Intent on On-going Material Decisions" dated 29 July 2015.

GSIN directly supports the above mission. It nets 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. Using these traditionally stove-piped systems and sensors, GSIN enables the warfighter in several ways. First it will enable creation of a User Defined Operating Picture (UDOP) to provide a single, unambiguous missile event picture allowing real-time collaboration for nuclear C2 and improved senior leader situational awareness (SA) for effective decision-making. Secondly, it will improve Space Situational Awareness (SSA) by tapping additional sensor capability. Finally, GSIN will dramatically improve the ingestion of non-traditional, but readily available non-US government and commercial data to the space catalog.

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 will develop and establish a unified schema that will integrate 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 sensors to provide data in net-centric formats consumable by other authorized systems and mission areas, thus reducing the need to acquire more sensors. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

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.

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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	5.974	3.505	0.000	3.505
Current President's Budget	0.000	5.974	3.470	0.000	3.470
Total Adjustments	0.000	0.000	-0.035	0.000	-0.035
• 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	-0.035	0.000	-0.035
C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017		
Title: GSIN Sensor Data Exposure: NDPP, TPY-2, MASINT	0.000	4.407	1.635		
Description: Non traditional Data Pre Processor (NDPP): Designs, develops, exposes and integrates Space Situational Awareness (SSA) data from Commercial, Owner-Operator, and Allied non-traditional sensors into space production systems and Space Catalog via the Global Information Grid. Develops implementation plans to mature data exposure capabilities. Army Navy Transportable Radar (AN/TPY-2): Designs, develops, tests, exposes, and integrates SSA data from the missile defense AN/TPY-2 sensor into space production systems and the Global Information Grid. Develops implementation plans to mature data exposure capabilities. Measurement and Signals (MASINT)/Technical Intelligence (TI): Designs, develops, exposes, and integrates data from MASINT and Technical Intelligence sensors in regions of the world where we currently do not have coverage. Provides near real time data from sensors that previously reported hours or days after events.					
FY 2015 Accomplishments:					
- Accomplished under PE 0101313F Strategic War Planning System					
FY 2016 Plans:					
- Test and field NDPP to enable outbound SSA data sharing and make data available to authorized users for consumption. Integrate with Joint Space Operations Center (JSpOC) Mission System (JMS)					
- Begin development and testing of SSA Data Sharing Strategy to enhance NDPP					
- Finalize development of TPY-2 and begin testing of the exposure of SSA data from the missile defense AN/TPY-2 sensor					
- Continue development of C2BMC SSA capability, to include development of Net Centric Command and Control capability to enable exposure of PACOM, CENTCOM, and EUCOM data via C2BMC, providing them with same capability as NORTHCOM/PACOM					

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Begin exposure of MASINT Phase 2 <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Complete testing and fielding of SSA Data Sharing Strategy enabling automatic ingestion and exposure of SSA data to authorized users - Finalize C2BMC SSA development to accommodate AN/TPY-2 radar and enter operational testing - Test and field Net Centric Command and Control capability as a part of overall C2BMC SSA effort - Complete exposure of MASINT Phase 2. 				
<p>Title: GSIN Data Integration: Launch Characterization Data Services Net Centric Data Integration Schema Configuration Control Technical Outreach</p> <p>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, launch event characterization and assessment services for risk reduction evaluations.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Accomplished under PE 0101313F Strategic War Planning System <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Continue to develop common XML net-enabled data schemas to integrate additional sensor data, and continue to develop configuration control processes, technical outreach processes for new GSIN data consumers and providers - Upgrade GSIN capabilities as DISA Enterprise Services evolve - Continue modifications to data services - Begin design and development of MASINT Phase 2 - Test and delivery schema to correspond to NDPP delivery (Spiral 3), and begin initial schema updates/development for TPY-2 SSA capability (Spiral 4) <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> - Complete and deliver Common XML net-enabled schemas. - Continue developing and releasing periodic configuration control processes - Continue technical outreach processes for new GSIN data consumers and providers - Deliver new GSIN capabilities to match evolving DISA Enterprise Service updates 		0.000	1.567	1.835

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
- Continue development of new and improved data services			
- Complete development of MASINT Phase 2 (including operational testing and fielding activities)			
- Complete and test schema changes for TPY-2 SSA and data service updates (TPY-2 Spiral 4)			
Accomplishments/Planned Programs Subtotals	0.000	5.974	3.470

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 Space Situational Awareness/Missile Warning/Missile Defense data exposure architecture and solution. The contracts are managed by the relevant organizations contracting office. GSIN does not award or manage any contracts.

The Air Force Life Cycle Management Center 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force **Date:** February 2016

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>	Project (Number/Name) 675368 / <i>GSIN (Global Integrated Sensor Network)</i>
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GSIN MW, MD Space, Common Schema, Configuration and Control	C/CPFF	BAH : Omaha, NE	-	0.000		0.680	Oct 2015	0.680	Oct 2016	0.000		0.680	Continuing	Continuing	-
GSIN Non-traditional Space Situational Awareness Data Exposure	C/CPAF	Lockheed Martin : Colorado Springs, CO	-	0.000		1.800	Nov 2015	0.000		0.000		0.000	Continuing	Continuing	-
GSIN Non-traditional Space Situational Awareness Data Exposure (R)	C/CPAF	Raytheon : Woburn, MA	-	0.000		0.200	Nov 2015	0.000		0.000		0.000	Continuing	Continuing	-
GSIN Space Situational Awareness Data Exposure - C2BMCEExpose Space Situational Awareness Data - AN/TPY-2 Sensor (2)	C/CPAF	Lockheed Martin : Huntsville, AL	-	0.000		1.893	Oct 2015	1.180	Oct 2016	0.000		1.180	Continuing	Continuing	-
GSIN Space Situational Awareness Data Exposure - MASINT/TI	C/CPAF	MIT/LL : Boston, MA	-	0.000		0.514	Jan 2016	0.435	Jan 2017	0.000		0.435	Continuing	Continuing	-
Subtotal			-	0.000		5.087		2.295		0.000		2.295	-	-	-

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Test and Evaluation (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GSIN Developmental Testing	C/CPFF	Various : Omaha, NE	-	0.000		0.212	May 2016	0.500	May 2017	0.000		0.500	Continuing	Continuing	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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 (Sharing Strategy-NDPP) Development					█	█	█	█																				
GSIN Data Exposure (Sharing Strategy-NDPP) Operational Testing									█	█	█	█																
GSIN Data Exposure (Sharing Strategy-NDPP) Capability Fielded (Jan 16)													█															
GSIN Data Exposure (TPY-2) Design and Development					█	█	█	█																				
GSIN Data Exposure (TPY-2) Operational Testing													█	█	█	█												
GSIN Data Exposure (TPY-2) Capability Fielded (Dec 18)																	█											
GSIN Data Exposure (NC2) Design and Development					█	█	█	█																				
GSIN Data Exposure (NC2) Operational Testing													█															
GSIN Data Exposure (NC2) Capability Fielded																	█											
GSIN Data Exposure (MASINT Phase 2) Design and Development					█	█	█	█																				
GSIN Data Exposure (MASINT Phase 2) Operational Testing													█	█	█	█												
GSIN Data Exposure (MASINT Phase 2) Capability Fielded (Sep 17)																	█											
GSIN Data Exposure (MASINT Phase 3) Design and Development													█	█	█	█												
GSIN Data Exposure (MASINT Phase 3) Operational Testing																					█	█	█	█				

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GSIN Data Exposure (Sharing Strategy-NDPP) Development	1	2016	4	2016
GSIN Data Exposure (Sharing Strategy-NDPP) Operational Testing	4	2016	2	2017
GSIN Data Exposure (Sharing Strategy-NDPP) Capability Fielded (Jan 16)	2	2017	2	2017
GSIN Data Exposure (TPY-2) Design and Development	1	2016	1	2017
GSIN Data Exposure (TPY-2) Operational Testing	2	2017	1	2018
GSIN Data Exposure (TPY-2) Capability Fielded (Dec 18)	1	2018	1	2018
GSIN Data Exposure (NC2) Design and Development	1	2016	1	2017
GSIN Data Exposure (NC2) Operational Testing	1	2017	1	2017
GSIN Data Exposure (NC2) Capability Fielded	2	2017	2	2017
GSIN Data Exposure (MASINT Phase 2) Design and Development	2	2016	3	2017
GSIN Data Exposure (MASINT Phase 2) Operational Testing	3	2017	4	2017
GSIN Data Exposure (MASINT Phase 2) Capability Fielded (Sep 17)	4	2017	4	2017
GSIN Data Exposure (MASINT Phase 3) Design and Development	4	2018	1	2020
GSIN Data Exposure (MASINT Phase 3) Operational Testing	2	2020	3	2020
GSIN Data Exposure (MASINT Phase 3) Capability Fielded (Jun 20)	3	2020	3	2020
GSIN Data integration (Schema) Spiral 3 Operational Testing	1	2016	2	2016
GSIN Data Integration (Schema) Spiral 3 Delivery (tied to NDPP)	2	2016	2	2016
GSIN Data Integration (Schema) Spiral 4 Design and Development	2	2016	3	2017
GSIN Data integration (Schema) Spiral 4 Operational Testing	4	2017	1	2018
GSIN Data Integration (Schema) Spiral 4 Delivery (tied to TPY-2)	1	2018	1	2018
GSIN Data Integration (Schema) Spiral 5 Design and Development	1	2018	1	2019
GSIN Data integration (Schema) Spiral 5 Operational Testing	2	2019	3	2019

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Events	Start		End	
	Quarter	Year	Quarter	Year
GSIN Data Integration (Schema) Spiral 5 Delivery (Maintenance)	3	2019	3	2019
GSIN Data Integration (Schema) Spiral 6 Design and Development	3	2019	2	2020
GSIN Data integration (Schema) Spiral 6 Operational Testing	2	2020	3	2020
GSIN Data Integration (Schema) Spiral 6 Delivery (tied to MASINT/TI)	3	2020	3	2020