Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force											Date: May 2021	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 1203940F / *Space Situation Awareness Operations*							
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	-	51.749	0.000	0.000	0.000	0.000	-	-	-	-	-	-
65A037: *Ground Based Optical Sensor System (GBOSS)*	-	51.749	0.000	0.000	0.000	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY2021, PE 1203940F, Space Situational Awareness Operations efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1203940SF Space Situation Awareness Operations from Appropriation 3600, Budget Activity 05 due to the creation of a new Appropriation for Space Force.

Space Situational Awareness (SSA) is knowledge of all aspects of space related to operations. As the foundation for space control, SSA encompasses surveillance of all space objects and activities; detailed surveillance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; gathering indications and warning on adversary space operations; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. This program element fields, upgrades, operationalizes, operates and maintains Air Force sensors and information integration capabilities within the SSA network while companion program element 1206425F, Space Situational Awareness Systems, develops new network sensors and improved information integration capabilities across the network. Funds also support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, modernization initiatives, systems engineering, system development, and test & evaluation, and may include prototyping and technology demonstration. Activities funded in this program element (1203940F) focus on surveillance of objects in earth orbit to aid tasks including satellite tracking; space object identification; tracking and cataloging; satellite attack warning; notification of satellite flyovers to U.S. forces; space treaty monitoring; and technical intelligence gathering.

Space acquisition must respond with speed and agility to emerging adversary threats. Space & Missile Systems Center (SMC) is transforming the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SMC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Ground Based Optical Sensor System (GBOSS) capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	56.829	0.000	0.000	0.000	0.000
Current President's Budget	51.749	0.000	0.000	0.000	0.000
Total Adjustments	-5.080	0.000	0.000	0.000	0.000
• 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	-3.000	0.000			
• SBIR/STTR Transfer	-2.080	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

FY 2020: -$3.000M decrease for higher Air Force Space priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Ground Based Optical Sensor System (GBOSS)	51.749	0.000	0.000
Description: GBOSS provides global ground based optical sensor capability for Space Situational Awareness (SSA). GBOSS improves sensitivity, search rate, tracking of non-cooperative launches, precise tagging of clustered objects, and detection of closely spaced dim objects. This effort includes fielding GBOSS capabilities in optimal global locations, upgrading existing Ground-based Electro-Optical Deep Space Surveillance (GEODSS) sensors to improve sensitivity and search rates, and may acquire new advanced technology sensor(s) to improve global electro-optical sensor resilience and persistence. The effort will coordinate with Combined Space Operations Center (CSpOC), National Space Defense Center (NSDC), and National Air and Space Intelligence Center (NASIC) efforts to ensure enterprise data fusion and dissemination supporting Enterprise Space Battle Management Command, and Control (ESBMC2). ***FY 2021 Plans:*** N/A ***FY 2022 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	51.749	0.000	0.000

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D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

Program established as an FY 2018 new start to address ground-based optical SSA gaps and shortfalls in supporting the Space Warfighting Construct (SWC). The acquisition strategy approved by AFPEO/SP in March 2018 accelerates the development and fielding of the solution, minimizing the time to address the requirements in light of current and emerging threats. Initial technology maturation and risk reduction will be executed using existing DoD, IC, and lab contracts. TMRR and EMD effort will be executed on a new contract awarded through full and open competition. The approved acquisition strategy supports fielding Initial Operational Capability (IOC) in the European theater in 2023 and Final Operational Capability (FOC) of the global capability in 2024.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1203940F / *Space Situation Awareness Operations*	Project (Number/Name) 65A037 / *Ground Based Optical Sensor System (GBOSS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBOSS design, development and life extension	Various	Multiple : Colorado Springs, CO	-	43.720	Mar 2020	-		-		-		-	-	-	-
GBOSS Technical Mission Analysis	C/CPIF	NASA/JPL : Pasadena, CA	-	1.000	Mar 2020	-		-		-		-	-	-	-
		Subtotal	-	44.720		-		-		-		-	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Multiple: Various : Various	-	2.000	Apr 2020	-		-		-		-	-	-	-
FFRDC	Various	Multiple: Various : Various	-	4.929	Apr 2020	-		-		-		-	-	-	-
Other Support	C/CPAF	Various: Various : Various	-	0.100	Nov 2019	-		-		-		-	-	-	-
		Subtotal	-	7.029		-		-		-		-	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	51.749		0.000		-		-		-	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1203940F / *Space Situation Awareness Operations*	**Project (Number/Name)** 65A037 / *Ground Based Optical Sensor System (GBOSS)*

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
GBOSS Phase I Development																												
GBOSS TMRR																												

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1203940F / *Space Situation Awareness Operations*	**Project (Number/Name)** 65A037 / *Ground Based Optical Sensor System (GBOSS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
GBOSS Phase I Development				
GBOSS TMRR	1	2020	4	2020