Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force											Date: April 2022	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 1206442F / *Next Generation OPIR*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	0.148	0.000	0.148	0.160	0.162	0.164	0.172	Continuing	Continuing
657121: *Next-Gen OPIR Space, Block 0 Polar*	-	0.000	0.000	0.148	0.000	0.148	0.160	0.162	0.164	0.172	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY 2021, PE 1206442F, Next Generation OPIR efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206442SF, Next Generation OPIR from Appropriation 3600, Budget Activity 05 due to the creation of a new Appropriation for Space Force.

The Next-Generation Overhead Persistent Infrared (Next-Gen OPIR) RDT&E FY 2021 budget justification exhibits describe the Next-Gen OPIR Space, Ground, and Space Modernization Initiative (SMI) programs.

1. Next-Gen OPIR Space Modernization Initiative (SMI) (Project 657009): SMI supports Next-Gen OPIR by assessing and demonstrating new technologies better enabling the detection of emerging global missile threats, material obsolescence, designing space and ground modifications focused on affordability and capability,and maximizing the effectiveness of existing system data products. SMI funds engineering activities to reduce both production and future system costs through manufacturing and producibility enhancements, and technology insertion. SMI will also mature potential technology upgrades at the component and system level for space and ground architecture enhancements. SMI includes studies and risk reduction activities to evolve the current Program of Record (PoR) constellation, reduce production timelines, and reduce recurring production costs. SMI activities are balanced and phased to enable an expanded trade space and improve the competitive environment. The three major thrust areas under SMI are Demonstrations, Technology Maturation and Data Exploitation. The Demonstrations mature and demonstrate technologies with ground and on-orbit prototypes. Demonstrations advance system performance and algorithms for tactical and strategic applications to enhance PoR capabilities. Finally, demonstrations reduce program risks for future OPIR systems, whether new systems or evolutions of the current PoR. Technology Maturation assesses and addresses needs to support resiliency of PoR assets and future architectures that must respond to an evolving threat environment. Data Exploitation enables access to OPIR data sources to expand technical intelligence and battlespace awareness processing and data dissemination tools to support warfighters and other data users.

2. Next-Gen OPIR Ground (Project 657106): Next-Gen OPIR Ground, also known as Future Operationally Resilient Ground Evolution (FORGE), will consist of Command and Control (C2) migration to Air Force Space Command's (AFSPC) Enterprise Ground Services (EGS), modernization of Mission Data Processing (MDP) to implement an open framework, and required development and/or upgrades to Relay Ground Stations (RGS) to meet AFSPC guidance on the current and future space domain demands. FORGE and EGS efforts combined will provide the flexibility and scalability to integrate new satellites, sensors and capabilities more rapidly and efficiently in order to meet evolving threats and warfighter needs. The Next-Gen OPIR ground efforts enable cyber enhancements for both space and ground systems. EGS will introduce common ground services such as Telemetry, Tracking and Command (TT&C), mission management, and automation. To support initial Next-Gen OPIR Space satellite launches without driving risks into the FORGE development schedule, the program will establish a risk reduction ground Next-Gen OPIR Interim Operations (NIO) capability based on a limited SBIRS Block 20 solution that can be utilized if FORGE becomes delayed.

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3. Next-Gen OPIR Space: Is a transition from the legacy SBIRS program. Next-Gen OPIR implements the direction of the Joint Requirements Oversight Council Memorandum (JROCM) 130-17, dated 21 December 2017, by developing the next generation of strategically survivable space-based missile warning OPIR platforms in both GEO and Polar orbits. This program will deliver improved core missile warning capabilities that are more survivable against emerging threats. The full Next-Gen OPIR constellation will consist of a minimum of GEO and Polar satellites in sufficient number to meet global warning coverage with no exploitable holes (5 GEO + 2 Polar) plus required backup and attrition and reconstitution reserve. The Air Force intends to acquire Next-Gen systems in block procurements. The Block 0 acquisition strategy consists of three GEO and two Polar satellites. The first GEO satellite is required no later than FY 2025 and the first Polar satellite is required in FY2027. All five Block 0 satellites need to be on orbit by FY2029. Follow-on blocks will be addressed in future acquisition strategies. Next-Gen OPIR Space, Block 0 Geosynchronous Earth Orbit (GEO)(NGG) (Project 657120): The Program Office intends to acquire the NGG capability in two contract actions. Phase 1 was awarded in August 2018 and encompasses requirements analysis, design/development, critical path flight hardware procurement, and risk reduction efforts leading to a System CDR. Phase 2 will be awarded in FY2021 for the manufacturing, assembly, system integration and test, launch and early on-orbit test through the delivery of NGG satellites 1-3 for operational acceptance of each space vehicle.

The Program Office is acquiring the NGP capability through three contract phases. Phase 0 awarded in June 2018, encompassed system requirements analysis and risk reduction efforts, which led to a March 2020 System Requirements Review (SRR). Phase 1 awarded May 2020, encompasses design and development, critical path flight hardware procurement, and risk reduction efforts leading to a System Critical Design Review (CDR) in FY 2025. Phase 2 will be awarded in FY 2025 for the manufacturing, assembly, integration and test, and early on orbit test, through operational acceptance of NGP satellites 1 and 2.

Next-Gen OPIR Space, Block 1 (Project 657122): The Air Force plans to acquire subsequent blocks in a competitive environment. The Block 1 satellites will be based on the Enterprise OPIR Capability Development Document (CDD), validated by the Joint Requirements Oversight Council (JROC) in May 2019. The Next Gen OPIR Block 1 program acquisition will begin in FY 2023 in time to deliver its first satellite by FY 2030.

Space acquisition must respond with speed and agility to emerging adversary threats. Space & Missile Systems Center (SMC) has transformed 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 Next-Gen OPIR weapon system capabilities. 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 the majority of Projects under PE 1206442F have been declared Section 804 Rapid Prototype efforts 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	0.148	0.000	0.148
Total Adjustments	0.000	0.000	0.148	0.000	0.148
• 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	0.148	0.000	0.148

Change Summary Explanation

FY 2020: +$75M Congressional plus-up to support Next-Gen OPIR Space, Block 0 GEO to support 2025 launch timeline of first SV.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
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COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
657121: *Next-Gen OPIR Space, Block 0 Polar*	-	0.000	0.000	0.148	0.000	0.148	0.160	0.162	0.164	0.172	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY 2021, PE 1206442F, Next Generation OPIR efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206442SF, Next Generation OPIR from Appropriation 3600, Budget Activity 05 due to the creation of a new Appropriation for Space Force.

Next-Generation Overhead Persistent Infrared (OPIR) Space, Block 0 Polar (NGP) (Project 657121): The primary mission is to provide initial missile warning of a ballistic missile attack on the US, its deployed forces, and its allies. Next-Gen OPIR Space enhances detection and improves reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. Development consists of the Next-Gen OPIR Polar missile warning satellites with new payloads in a highly resilient bus, providing real-time persistent global infrared coverage to meet validated Joint Requirements Oversight Council (JROC) requirements on current and future space domain demands.

The Program Office is acquiring the NGP capability through three contract phases. Phase 0 awarded in June 2018, encompassed system requirements analysis and risk reduction efforts, which led to a March 2020 System Requirements Review (SRR). Phase 1 awarded May 2020, encompasses design and development, critical path flight hardware procurement, and risk reduction efforts leading to a System Critical Design Review (CDR) in FY 2025. Phase 2 will be awarded in FY 2025 for the manufacturing, assembly, integration and test, and early on orbit test, through operational acceptance of NGP satellites 1 and 2.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Next-Gen OPIR Space, Block 0 Polar	0.000	0.000	0.148
Description: Development of the Next-Gen OPIR Polar missile warning satellites using a proven bus with modifications, auxiliary payloads for improved resiliency, and new hardened sensors. The Polar space segment will consist of two Next-Gen OPIR Polar satellites in a resilient architecture, providing real time persistent infrared coverage of the northern hemisphere.			
FY 2022 Plans: N/A			
FY 2023 Plans: Continue development of the Next-Gen OPIR Polar missile warning satellites.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continue develepment			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.148

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Space Force intends to acquire Next-Gen systems in block developments to deliver the required constellation. The first block, Block 0, consists of three Next-Gen Geosynchronous Earth Orbit (GEO) and two Next-Gen Polar satellites. The Next-Gen OPIR Space program has been declared a Section 804 Rapid Prototype effort under the 2016 National Defense Authorization Act (NDAA). The first GEO satellite is required by FY 2025, and the first Polar satellite is required in FY 2027. The program office awarded two sole source contracts (one to a GEO prime and one to a Polar prime) under the authority of two Justification & Authorization documents. The Next-Gen Polar Phase 0 was awarded in FY 2018, consisting of requirements development and culminated in a March 2020 SRR. Phase 1 was awarded May 2020, encompassing requirements review, design, development, critical path flight hardware procurement, and risk reduction efforts leads to a System CDR in FY 2025 for Next-Gen Polar Satellite Vehicles (SV) 1 and 2. Phase 2 will be awarded in FY 2025, encompassing build, integration, test, launch, and transition to operations for Next-Gen Polar SVs 1 and 2. The Space Force plans to acquire subsequent blocks in a competitive environment. The Block 1 satellites will be based on the Missile Warning and Missile Defense OPIR Capability Development Document (CDD), validated by the Joint Requirements Oversight Council (JROC) in May 2019.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC	RO	Aerospace Corp. : El Segundo, CA	-	-		-		0.148		-		0.148	0.000	0.148	-
A&AS	Various	Various : Various	-	-		-		-		-		-	0.000	0.000	-
Other Support	Various	Various : Various	-	-		-		-		-		-	0.000	0.000	-
		Subtotal	-	-		-		0.148		-		0.148	0.000	0.148	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		0.148		-		0.148	0.000	0.148	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1206442F / *Next Generation OPIR*	**Project (Number/Name)** 657121 / *Next-Gen OPIR Space, Block 0 Polar*

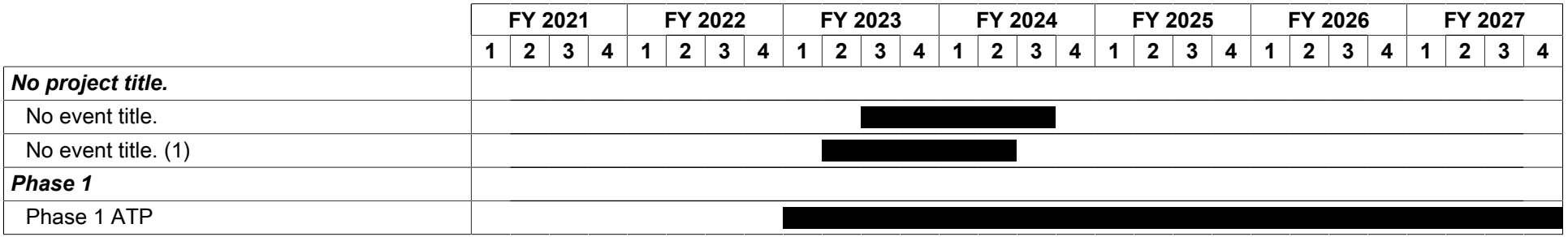

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 1206442F / *Next Generation OPIR*	**Project (Number/Name)** 657121 / *Next-Gen OPIR Space, Block 0 Polar*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
No project title.				
No event title.	3	2023	3	2024
No event title. (1)	2	2023	2	2024
Phase 1				
Phase 1 ATP	1	2023	4	2027

Note

Next-Gen OPIR Polar efforts continue past 2020