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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 1206443SF / <i>Next-Gen OPIR -- GEO</i>
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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
Total Program Element	-	0.000	1,199.193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
657120: <i>Next-Gen OPIR Block0-GEO</i>	-	0.000	1,199.193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 In accordance with Congressional direction in the FY22 enacted budget, funds in Program Element 1206442SF, Project 657120, Next-Gen OPIR Space, Block 0 GEO, have been transferred to 1206443SF.

A. Mission Description and Budget Item Justification

Next-Generation Overhead Persistent Infrared (Next-Gen OPIR) Space Block 0 Geosynchronous Earth Orbit (GEO) (Project 657120): The primary mission is to provide initial missile warning of a ballistic missile attack on the US, deployed forces and allies. The Next-Gen OPIR GEO (NGG) missile warning satellites enhance detection and improve reporting of intercontinental ballistic missile launches, submarine ballistic missile launches, and tactical ballistic missile launches. Development consists of 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 NGG capability in two contract actions. Phase 1 awarded in August 2018 encompasses requirements analysis, design/development, critical path flight hardware procurement, and risk reduction efforts leading to a System Critical Design Review (CDR). Phase 2 was awarded in Jan 2021 for the manufacturing, assembly, system integration and test, launch, and early on-orbit test through operational acceptance of NGG satellites 1-3.

The total cost of the Next-Gen OPIR Middle Tier of Acquisition effort is 8,074.5 million, including RDT&E and procurement of prototype units. Next-Gen OPIR is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways

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 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	1,199.193	0.000	0.000	0.000
Total Adjustments	0.000	1,199.193	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	1,199.193			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

In accordance with Congressional direction in the FY22 enacted budget, funds in Program Element 1206442SF, Project 657120, Next-Gen OPIR Space, Block 0 GEO, have been transferred to 1206443SF.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
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Title: Next-Gen OPIR Space, Block 0 GEO	-	1,199.193	0.000
Description: Development of the Next-Gen OPIR GEO missile warning satellites with a proven bus, new hardened sensors, and auxiliary payloads for increased resilience. The space segment for GEO missile warning satellites consist of a resilient architecture providing real time persistent global equatorial infrared coverage. The first GEO satellite is required in FY 2025.			
FY 2022 Plans: Complete Phase 1 development on spacecraft bus and up to two competitive flight mission payloads designs. Continue development of ground and spacecraft flight software and mission data processing algorithms. Continue communication system early integration risk reduction demonstrations. Continue component and subsystem integration testing. Complete mission model and simulation development and begin government integration and requirement verification. Complete critical path flight hardware procurement for SV #1. Continue assembly, integration, and test of up to two competitive flight mission payloads for SVs #1 & 2. Continue Phase 2 efforts to manufacture, build, integrate, test, and launch of the GEO SV #1. Continue critical path flight hardware procurement for SVs #2 & 3. Additionally, FY 2022 funding will allow the program to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, experimentation, and prototyping.			
FY 2023 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
FY23 Budget Year Plans are captured in Program Element 1206442SF. They will be captured in Program Element 1206440SF per direction in the FY22 Appropriations Bill in the next budget cycle.			
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> The FY 2023 funding in PE 1206442SF increased by \$514.74M compared to the FY 2022 funding in this PE due to concurrent engineering, production, integration and test activity supporting all three Next Gen OPIR GEO Space Vehicles and two new-development OPIR mission payloads. Funds are required to preserve FY25 initial launch capability (ILC) for SV #1, place flight hardware material and vendor orders for SV 1-3, and perform space/ground integration activities. Funds required to enable the essential integration, test, and find/fix activity necessary to deliver SV #1 and two competitively produced OPIR mission payloads on the accelerated schedule necessary to maintain FY25 ILC.			
Accomplishments/Planned Programs Subtotals	-	1,199.193	0.000

D. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

E. 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 3 Next-Gen GEO satellites. The Next-Gen OPIR Space program has been designated a Middle Tier Acquisition (MTA) Rapid Prototype effort under Section 804 of the 2016 National Defense Authorization Act (NDAA). The purpose of the MTA is to develop and qualify up to two competitive mission payloads. Upon approval by the SAE to complete MTA activity, the Next Gen OPIR Block 0 program development will transition to Major Capability Acquisition program. The first GEO satellite is required by FY 2025. The program office awarded a sole source contract under the authority of a Justification & Authorization document. The Next-Gen GEO Phase 1 contract was awarded in FY 2018, consisting of requirements development, critical path flight hardware procurement, and risk reduction efforts culminating in a Sept 2021 Critical Design Review (CDR). The Next-Gen GEO Phase 2 modification was awarded in Jan 2021, and includes scope for parts procurement, assembly, integration, test, launch, and checkout of all 3 GEO space vehicles.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206443SF / Next-Gen OPIR -- GEO	Project (Number/Name) 657120 / Next-Gen OPIR Block0-GEO
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Next-Gen OPIR Space, Block 0 GEO (Phase 1 & 2)	Various	Lockheed Martin : Various	-	-		1,144.922	Oct 2021	-		-		-	Continuing	Continuing	-
SE&I	Various	Various : TBD	-	-		16.589	Nov 2021	-		-		-	Continuing	Continuing	-
Technical Mission Analysis	RO	Aerospace Corporation : El Segundo, CA	-	-		15.201	Oct 2021	-		-		-	Continuing	Continuing	-
Subtotal			-	-		1,176.712		-		-		-	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
FFRDC	RO	Aerospace Corporation : El Segundo, CA	-	-		7.756	Oct 2021	-		-		-	Continuing	Continuing	-
A&AS	Various	Various : TBD	-	-		14.266	Feb 2022	-		-		-	Continuing	Continuing	-
Other Support	Various	Various : TBD	-	-		0.459	Oct 2021	-		-		-	Continuing	Continuing	-
Subtotal			-	-		22.481		-		-		-	Continuing	Continuing	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			-	-	1,199.193	-	-	-	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206443SF / <i>Next-Gen OPIR -- GEO</i>	Project (Number/Name) 657120 / <i>Next-Gen OPIR Block0-GEO</i>
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	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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

<i>Next Gen OPIR Space, Blk 0 GEO Phase 1</i>	
Bus Development	
Payload Development	
SV 1 Critical Path Flight Hardware	
Payload CDR	
System CDR	
<i>Next Gen OPIR Space, Blk 0 GEO Phase 2</i>	
SV 2/3 Critical Flight Hardware Purchases	
SV 1 Mission Payload Integration & Testing	
SV 2 Mission Payload Integration & Testing	
SV 1 Bus Build Integration & Testing	
SV 3 Mission Payload Integration & Testing	
SV 2 Bus Build Integration & Testing	
SV 1 Ready for Launch	
SV 3 Bus Build Integration & Testing	

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3620F / 5	R-1 Program Element (Number/Name) PE 1206443SF / <i>Next-Gen OPIR -- GEO</i>	Project (Number/Name) 657120 / <i>Next-Gen OPIR Block0-GEO</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Next Gen OPIR Space, Blk 0 GEO Phase 1</i>				
Bus Development	1	2021	2	2022
Payload Development	1	2021	2	2022
SV 1 Critical Path Flight Hardware	1	2021	3	2022
Payload CDR	3	2021	3	2021
System CDR	1	2022	1	2022
<i>Next Gen OPIR Space, Blk 0 GEO Phase 2</i>				
SV 2/3 Critical Flight Hardware Purchases	2	2021	2	2024
SV 1 Mission Payload Integration & Testing	4	2021	4	2023
SV 2 Mission Payload Integration & Testing	4	2021	4	2023
SV 1 Bus Build Integration & Testing	4	2021	3	2025
SV 3 Mission Payload Integration & Testing	1	2024	3	2026
SV 2 Bus Build Integration & Testing	1	2024	4	2027
SV 1 Ready for Launch	4	2025	4	2025
SV 3 Bus Build Integration & Testing	1	2025	4	2027