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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Air Force **Date:** March 2023

<b>Appropriation/Budget Activity</b> 3620F: <i>Research, Development, Test &amp; Evaluation, Space Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206443SF / <i>Next-Gen OPIR -- GEO</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	1,199.193	1,694.933	719.731	0.000	719.731	509.910	449.160	484.857	508.622	Continuing	Continuing
657120: <i>Next-Gen OPIR Space GEO</i>	-	1,199.193	1,694.933	719.731	0.000	719.731	509.910	449.160	484.857	508.622	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In accordance with Congressional transfer direction in the FY 2023 enacted budget, funds in Program Element (PE) 1206442SF, Project 657120, Next-Gen OPIR Space, Block 0 GEO, have been transferred to 1206443SF, Next-Gen OPIR - GEO. FY 2024 and beyond budget is now included in this PE.

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

Next-Generation Overhead Persistent Infrared (Next-Gen OPIR) 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) in October 2021. Phase 2 was awarded in January 2021 for the manufacturing, assembly, system integration and test, launch, and early on-orbit test through operational acceptance of NGG satellites 1-3.

The Department has assessed the third satellite vehicle is not required as a result of continued positive performance of the SBIRS constellation and the anticipated full operational capability of the Medium Earth Orbit (MEO), Program Element 1206447SF/ Low Earth Orbit (LEO), Program Element 1206446SF missile tracking constellation. The program has removed the third satellite development efforts from the FY 2024 budget request.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) 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, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or re-purpose capabilities.

The Next-Gen OPIR Space Rapid Prototype (RP) Middle Tier of Acquisition (MTA) effort will close NLT 1QFY2024. Beyond the MTA portion, both NGG and NGP activities are expected to be designated as Major Capability Acquisition programs.

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This program element may include necessary civilian pay expenses required to manage, execute, and deliver Next-Gen OPIR GEO system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392SF and 1206398SF.

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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	1,199.193	0.000	0.000	0.000	0.000
Current President's Budget	1,199.193	1,694.933	719.731	0.000	719.731
Total Adjustments	0.000	1,694.933	719.731	0.000	719.731
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-19.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	1,713.933			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	719.731	0.000	719.731

**Change Summary Explanation**

FY 2023: +1,173.933M; in accordance with Congressional direction in the FY 2023 enacted budget, funds in PE 1206442SF, Project 657120, Next-Gen OPIR Space, Block 0 GEO, have transferred to PE 1206443SF.

FY 2023: -19.000M; Congressionally directed reduction for Product Development excess to need.

FY 2024: +719.731M; budget submitted previously in PE 1206442SF, now submitted in PE 1206443SF includes inflation and reduced due to NGG-3 removal and higher USSF priorities.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<p><b>Title:</b> Next-Gen OPIR GEO</p> <p><b>Description:</b> 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 consists of a resilient architecture providing real time persistent global equatorial infrared coverage. The first GEO satellite is required in 2025.</p> <p><b>FY 2023 Plans:</b> Continue Phase 2 efforts to build and deliver 2 GEO space vehicles (SVs). Continue assembly, integration and test of two competing payloads. Complete testing of at least one flight mission payload for SV #1 and delivery for integration into the SV.</p>	1,199.193	1,694.933	719.731

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<b>Appropriation/Budget Activity</b> 3620F: <i>Research, Development, Test &amp; Evaluation, Space Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206443SF / <i>Next-Gen OPIR -- GEO</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<p>Continue efforts to manufacture, build, integrate, and test the GEO SV #1, including the first system-level integrated testing to enable discovery and correction of defects critical to launch. Conduct mission and auxiliary payload integration onto SV #1. Conduct SV #1 acoustic test. Continue critical path flight hardware procurement for SVs #2. Begin efforts to manufacture, build, integrate, and test the GEO SV #2, including early subsystem integration and testing. Rapidly respond to updated intelligence on threats and implement system resiliency and situational awareness necessary to operate in a contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, modeling, simulation, experimentation, prototyping.</p> <p><b><i>FY 2024 Plans:</i></b> FY 2024 funds are required to preserve 2025 initial launch capability (ILC) for SV #1, perform space/ground integration activities, and continue build and integration activities for SV #2. Continue Phase 2 efforts to build and deliver 2 GEO SVs. Conduct system-level assembly and test for the GEO SV #1, including space-to-ground testing to enable discovery and correction of defects critical to launch. Conduct environmental thermal-vacuum testing for the fully assembled SV #1. Continue assembly, integration and test of the second of two competing payloads. Complete testing of the flight mission payload for SV #2 and delivery for integration into the SV. Continue flight hardware procurement for SV #2. Continue efforts to manufacture, build, integrate, and test the GEO SV #2, including subsystem integration and testing. Continue Enterprise Planning and support for secure communications including government-furnished flight cryptologic units, long-haul communications, launch integration efforts, etc., which were carried in the core project cost category in previous years. Rapidly respond to updated intelligence on threats and implement system resiliency and situational awareness necessary to operate in a contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, modeling, simulation, experimentation, prototyping.</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> FY 2024 decreased due to completion of most of the non-recurring engineering and long-lead procurements for the program, delivery of the first mission payload, completion of a significant portion of the build and integration work for SV #1, and the off-ramp of SV #3 scope.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	1,199.193	1,694.933	719.731

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

**Remarks**

**E. Acquisition Strategy**  
The Space Force intends to rapidly acquire Next-Gen systems in order to out-pace adversary missile and counterspace threats while maintaining survivable, global missile warning capability sufficient to enable a transition to the future Force Design architecture. Next-Gen OPIR GEO consists of 2 Next-Gen GEO satellites. The

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Next-Gen OPIR Space program is designated a Middle Tier Acquisition (MTA) Rapid Prototype effort under Section 804 of the 2016 National Defense Authorization Act (NDAA). The Next-Gen OPIR GEO program portion of the MTA is expected to be re-designated an Acquisition Category (ACAT)-1B Major Capability Acquisition program in 2023. The first GEO satellite is required by 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 an October 2021 System Critical Design Review (CDR). The Next-Gen GEO Phase 2 modification was awarded in January 2021, and includes scope for parts procurement, assembly, integration, test, launch, and checkout of 3 GEO space vehicles. The third space vehicle will be de-scoped from the contract as a result of continued positive performance of the SBIRS constellation and the anticipated operational capability of the Medium Earth Orbit (MEO), Program Element 1206447SF/ Low Earth Orbit (LEO), Program Element 1206446SF missile tracking constellation.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 3620F / 5	<b>R-1 Program Element (Number/Name)</b> PE 1206443SF / Next-Gen OPIR -- GEO	<b>Project (Number/Name)</b> 657120 / Next-Gen OPIR Space GEO
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<b>Product Development (\$ in Millions)</b>				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 GEO (Phase 1 & 2)	Various	Lockheed Martin; Various : Various	-	1,144.922	Oct 2021	1,625.859	Oct 2022	614.264	Oct 2023	-		614.264	Continuing	Continuing	-
Enterprise Crypto	Various	General Dynamics; Various : Various	-	-		-		10.991	Oct 2023	-		10.991	Continuing	Continuing	-
Comm GFP	C/CPFF	Sev1 Tech : El Segundo, CA	-	-		-		2.097	Oct 2023	-		2.097	Continuing	Continuing	-
Launch Support	Various	Various : Various	-	-		-		16.492	Oct 2023	-		16.492	Continuing	Continuing	-
SE&I	Various	Various : Various	-	16.589	Nov 2021	18.441	Dec 2022	23.033	Nov 2023	-		23.033	Continuing	Continuing	-
Technical Mission Analysis	RO	Aerospace Corporation : El Segundo, CA	-	15.201	Oct 2021	20.555	Oct 2022	17.505	Oct 2023	-		17.505	Continuing	Continuing	-
<b>Subtotal</b>			-	1,176.712		1,664.855		684.382		-		684.382	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	12.621	Oct 2022	10.267	Oct 2023	-		10.267	Continuing	Continuing	-
A&AS	Various	Various : TBD	-	14.266	Feb 2022	17.051	Feb 2023	24.666	Feb 2024	-		24.666	Continuing	Continuing	-
Other Support	Various	Various : TBD	-	0.459	Oct 2021	0.406	Oct 2022	0.416	Oct 2023	-		0.416	Continuing	Continuing	-
<b>Subtotal</b>			-	22.481		30.078		35.349		-		35.349	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	1,199.193	1,694.933	719.731	719.731	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2024 Air Force		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 3620F / 5	<b>R-1 Program Element (Number/Name)</b> PE 1206443SF / <i>Next-Gen OPIR -- GEO</i>	<b>Project (Number/Name)</b> 657120 / <i>Next-Gen OPIR Space GEO</i>

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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

<b>Next-Gen OPIR GEO Phase 1</b>																												
Bus Development	████████																											
Payload Development	████████																											
SV 1 Critical Path Flight Hardware	████████████████																											
System CDR	██████																											
<b>Next-Gen OPIR GEO Phase 2</b>																												
SV 2 Critical Flight Hardware Purchases	██																											
SV 1 Mission Payload Integration & Testing	██																											
SV 2 Mission Payload Integration & Testing	██																											
SV 1 Bus Build Integration & Testing	██																											
SV 2 Bus Build Integration & Testing									██																			
SV 1 Launch Support									██																			
SV 1 Ready for Launch															██████													
SV 1 On-Orbit Testing															██													
SV 2 Ready for Launch																					██████							
SV 2 On-Orbit Testing																					██							

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2024 Air Force **Date:** March 2023

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Next-Gen OPIR GEO Phase 1</i></b>				
Bus Development	1	2022	2	2022
Payload Development	1	2022	2	2022
SV 1 Critical Path Flight Hardware	1	2022	3	2022
System CDR	1	2022	1	2022
<b><i>Next-Gen OPIR GEO Phase 2</i></b>				
SV 2 Critical Flight Hardware Purchases	1	2022	2	2024
SV 1 Mission Payload Integration & Testing	1	2022	4	2023
SV 2 Mission Payload Integration & Testing	1	2022	3	2024
SV 1 Bus Build Integration & Testing	1	2022	3	2025
SV 2 Bus Build Integration & Testing	1	2024	3	2027
SV 1 Launch Support	1	2024	3	2025
SV 1 Ready for Launch	4	2025	4	2025
SV 1 On-Orbit Testing	1	2026	1	2027
SV 2 Ready for Launch	4	2027	4	2027
SV 2 On-Orbit Testing	1	2028	4	2028