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OFFICE OF PREPUBLICATION AND SECURITY REVIEW

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# RQ-4 GROUND SEGMENT MODERNIZATION PROGRAM (RQ-4 GSMP)

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Selected Acquisition Report (SAR)



AS OF THE FY 2023 PRESIDENT'S BUDGET  
U.S. AIR FORCE

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## Program Manager

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**Date Assigned:** June 18, 2020

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## Mission and Description

The RQ-4 Ground Segment Modernization Program (RQ-4 GSMP) provides for the engineering design, development, integration and field installation effort to replace the current RQ-4B ground segment. This effort will provide a building-based ground segment solution capable of supporting command and control requirements and sensor operator requirements for all RQ-4B air-vehicle variants. The system is being designed as a service oriented open architecture.

The RQ-4 GSMP mission control segments will be fielded at three bases at the conclusion of the engineering and manufacturing development phase: Edwards Air Force Base (AFB), California; Grand Forks AFB, North Dakota; and Beale AFB, California.

## Executive Summary

This is the initial SAR submission for RQ-4 GSMP. The Service Acquisition Executive (SAE) reclassified the program from an Acquisition Category (ACAT) II to an ACAT IB program on October 22, 2021 due to program cost growth.

The RQ-4 GSMP completed the first of two increments of developmental testing in February 2021. The second increment of developmental testing began on December 13, 2021 and is projected to be complete in 3<sup>rd</sup> Quarter Fiscal Year 2022. Installation and integration of the mission control segment at Beale AFB initiated in December 2020 and is projected to be delivered to the Air Force in in 4<sup>th</sup> quarter Fiscal Year 2022. Installation and integration of the mission control segment at Grand Forks AFB initiated in August 2021 and is projected to be delivered to the Air Force in 4<sup>th</sup> Quarter Fiscal Year 2022.

### *History of Significant Developments Since Program Initiation*

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
June 2016	The Milestone Decision Authority approved Milestone B on June 30, 2016
February 2017	The program conducted a Preliminary Design Review (PDR) on February 14-15, 2017
February 2017	The program completed PDR on February 16, 2017
August 2017	The program conducted a Critical Design Review (CDR) on August 24, 2017
August 2017	The program completed CDR on August 31, 2017.
February 2021	The program completed Developmental Test (DT), Increment 1 of 2 on February 10, 2021.
October 2021	The program was reclassified by the SAE as an ACAT IB program.

## Schedule

### *Schedule Events*

Schedule Events					
Events	ACAT II APB Objective	Current APB (Proposed ACAT I) Objective/Threshold		Current Estimate/Actual	Deviation
PDR	Jan 2017	Jan 2017	Jul 2017	February 16, 2017	
CDR	Aug 2017	Aug 2017	Feb 2018	August 31, 2017	
DT Complete	Oct 2021	Oct 2021	Apr 2022	Apr 2022	
Operational Test (OT) Readiness Review	Jun 2022	Jun 2022	Nov 2022	Aug 2022	
Milestone C	Jun 2023	Removed	Removed	N/A	

### Schedule Notes

Acquisition Program Baseline is in coordination to reflect ACAT I program; the current estimates presented in the SAR align with this updated APB. The Milestone C event is being removed from the Acquisition Program Baseline in coordination as the Air Force has decided to not procure any production units, and will only field those developed under the Engineering, Manufacturing, and Development contract.

### *Significant Schedule Risks*

Significant Schedule and Technical Risks	
Current Estimate (December 2021)	
1.	There were no significant schedule risks with this program at this time.

## Performance

Performance Characteristics					
ACAT II APB Objective	Current APB (Proposed ACAT I) Objective/Threshold	Demonstrated Performance (Include Date of Demonstration)	Current Estimate/Actual	Deviation	
<b>KPP-1 Worldwide Operations</b>					
The RQ-4B Block 30/40 system must be equipped to allow worldwide operations in all classes of airspace with minimal procedural workarounds, air traffic control (ATC) agreements and special use airspace.	The RQ-4B Block 30/40 system must be equipped to allow worldwide operations in all classes of airspace with minimal procedural workarounds, ATC agreements and special use airspace.	The RQ-4B Block 30/40 system must be equipped to allow worldwide operations in all classes of airspace using procedural workarounds, ATC agreements, and special use airspace.	TBD	The RQ-4B Block 30/40 system shall be equipped to allow worldwide operations in all classes of airspace with minimal procedural workarounds, ATC agreements and special use airspace.	
<b>KPP-2 Dynamic Re-Tasking</b>					
The RQ-4B Block 30/40 ground segment must allow operators to perform Near Real Time (NRT) mission control, mission monitoring, and mission updates and modifications for dynamic aircraft and payload control and re-tasking.	The RQ-4B Block 30/40 ground segment must allow operators to perform NRT mission control, mission monitoring, and mission updates and modifications for dynamic aircraft and payload control and re-tasking.	The RQ-4B Block 30/40 ground segment must allow operators to perform NRT mission control and payload control and monitoring, manual aircraft override control and manual target changes to accomplish ad-hoc mission re-tasking.	TBD	The RQ-4B Block 30/40 ground segment shall allow operators to perform NRT mission control, mission monitoring, and mission updates and modifications for dynamic aircraft and payload control and re-tasking.	
<b>KPP-3 Net-Ready</b>					
The RQ-4B Block 30/40 system must support military operations, be able to enter and be managed in the network, and exchange information.	The RQ-4B Block 30/40 system must support military operations, be able to enter and be managed in the network, and exchange information.	The RQ-4B Block 30/40 system must support military operations, be able to enter and be managed in the network, and exchange information.	TBD	The RQ-4B Block 30/40 system shall support military operations, be able to enter and be managed in the network, and exchange information.	
<b>KSA-1 Materiel Availability Rate</b>					
The Mission Control Element (MCE) must	The MCE must achieve an	The MCE must achieve an	TBD	The MCE shall achieve an	

Performance Characteristics					
ACAT II APB Objective	Current APB (Proposed ACAT I) Objective/Threshold		Demonstrated Performance (include Date of Demonstration)	Current Estimate/Actual	Deviation
achieve an availability rate of 95% and the Launch and Recovery Element (LRE) 95% and the LRE must achieve a materiel availability rate of 90%.The ground segment must enable the air crew to control three RQ-4B Block 30/40 aircraft to effectively meet mission requirements.	availability rate of 95% and the LRE 95% and the LRE must achieve a materiel availability rate of 90%.	availability rate of 95% and the LRE 95% and the LRE must achieve a materiel availability rate of 90%.		availability rate of 95% and the LRE 95% and the LRE must achieve a materiel availability rate of 90%.	
<b>KSA-2 Operational Availability Rate</b>					
The MCE must achieve a Mission Capable (MC) rate of 98% and the LRE must achieve an MC rate of 95%.	The MCE must achieve an MC rate of 98% and the LRE must achieve an MC rate of 95%.	N/A	TBD	The MCE shall achieve an MC rate of at least 98% and the LRE shall achieve an MC rate of at least 95%.	
<b>KSA-3 Aircraft Control</b>					
The ground segment must enable the air crew to control three RQ-4B Block 30/40 aircraft to effectively meet mission requirements.	The ground segment must enable the air crew to control three RQ-4B Block 30/40 aircraft to effectively meet mission requirements.	The ground segment must enable the air crew to control a single RQ-4B Block 30/40 aircraft to effectively meet mission requirements.	TBD	The ground segment shall enable the air crew to control at least three RQ-4B Block 30/40 aircraft.	

**Requirements Source**

Capability Production Document (CPD) for Block 30 (July 30, 2014) and CPD for Block 40 (January 13, 2015)

**Acquisition Budget Estimate**

*Total Acquisition Cost*

Category	ACAT II APB		APB (Proposed ACAT I)		Budget Estimate PB 2023		Deviation
	Base	Objective (BY\$)	Objective	Threshold	BY\$	TY\$	

	Year		(BY\$)	(BY\$)			
RDT&E	2015	454.1M	503.2M	528.0M	503.2M	\$551.8M	
Procurement	2015	54.8M	\$1.1M	\$1.1M	\$1.1	\$1.3	
<b>Total</b>		<b>508.9M</b>	<b>504.3M</b>	<b>529.1M</b>	<b>504.3</b>	<b>553.1</b>	
PAUC	2015	N/A	N/A	N/A	N/A	N/A	
APUC	2015	N/A	N/A	N/A	N/A	N/A	

### *Total End Item Quantity*

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	0	0
Procurement	0	0

### **Budget Notes:**

The Service Acquisition Executive (SAE) reclassified the program from an Acquisition Category (ACAT) II to an ACAT IB program on October 22, 2021 due to program cost growth. This is the initial SAR for this program; therefore, the current estimate is comprised of the FY 2023 PB and the proposed ACAT I APB estimate.

### *Risk and Sensitivity Analysis*

Risks and Sensitivity Analysis	
<b>Current Procurement Cost (December 2021)</b>	
1.	There are not risks and issues with this program at this time.
<b>Milestone B ACAT I Baseline (Proposed)</b>	
1.	There are not risks and issues with this baseline estimate.



## Unit Cost

### *Current Baseline Compared with Current Estimate*

Unit Cost reporting does not apply to this program as it does not have any defined unit cost.

### *Original Baseline Compared with Current Estimate*

Unit Cost reporting does not apply to this program as it does not have any defined unit cost.

## Contracts

Contract Data (\$TYM)		
Contract Number	FA8620-15-D-3009	
Effort Number	N/A	
Contract Type	CPIF	
Modification Number	N/A	
Award Date	July 1, 2016	
Definitization Date	July 1, 2016	
Order Number	0003	
CAGE Code/CAGE Legal Name	78002 / Northrop Grumman Aerospace Systems	
Contract Title	GSMP	
Contract Address	17066 Goldentop Rd, San Diego CA 92127	
Contracts/Effort Price, Quantity, and Performance (\$TYM)		
Initial Target Price	Current Target Price	
197.4	471.4	
Initial Ceiling Price	Current Ceiling Price	
199.7	471.4	
Contract's EAC	PM's EAC	
386.8	387.1	
Initial Quantity	Current Quantity	Delivered Quantity
N/A	N/A	N/A
BAC	BCWP	ACWP
398.9	372.4	361.2
BCWS	Cost Variance	Schedule Variance
373.7	11.1	-\$1.4

### Contract Notes

Contract performance data is as of February 28, 2022. Program Office provided the contractor formal approval to begin the Over Target Baseline/Over Target Schedule (OTB/OTS) process on December 17, 2019. The OTB/OTS process completed in October 2020, with a formal contract modification awarded June 1, 2021.

#### Cost Variance:

The favorable cost variance drivers are: 1) increased use of modeling tools, 2) increased use of parallel dry run efforts in integration testing, 3) subcontractor staffing efficiencies, and 4) increased early coordination in RDT&E requiring less staffing and rework.

#### Schedule Variance:

The unfavorable schedule variance is primarily hardware configuration changes at the test location and Main Operating Bases and late Government Furnished Property.

## Technologies and Systems Engineering

### Significant Technical Risks

Significant Technical Risks
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**Current Estimate (December 2021)**

1. There are no technical risks with this program at this time.

## Deliveries and Expenditures

Deliveries do not apply to this program as there is no defined unit of measure.

### *Expended and Appropriated (TY \$M)*

Total Acquisition Cost: \$553.1

Expended to Date: \$462.7

Percent Expended: 83.66%

Total Funding Years: 9

Years Appropriated: 7

Percent Years Appropriated: 77.78%

Appropriated to Date: \$518.7

Percent Appropriated: 93.78%

## Low Rate Initial Production

There is no LRIP associated with this program.

The approved acquisition strategy for GSMP includes the development of mission control segments at Edwards AFB, Beale AFB, and Grand Forks AFB that will be used for development and operational test and then transition to operational CONUS assets. Limited production of additional mission control segments were originally planned to be procured, however Air Combat Command decided to forego this procurement and will only field the systems delivered in the Engineering, Manufacturing, and Development contract.

## Operating and Support Costs

### *Total Program O&S Cost Compared with Baseline*

	Current APB Objective (BY\$)	Current APB Threshold (BY\$)	Current Estimate (BY\$)	Current Estimate (TY\$)	Deviation
Total O&S (\$Millions)	0	0	0	0	

### O&S Cost Note

Operating and support costs are not included in the RQ-4 GSMP; they are included in the Core RQ-4 program which covers overall RQ-4 sustainment.

### *O&S Cost Breakdown*

Category (BY\$ Million)	[Replace w System Name]
Unit-Level Manpower	
Unit Operations	
Maintenance	
Sustaining Support	
Continued System Improvements	
Other	
Total O&S	