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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	954.123	221.675	191.733	134.589	0.000	134.589	29.283	19.318	30.757	41.307	Continuing	Continuing
675145: <i>RQ-4 Block 30</i>	523.843	0.121	30.761	0.000	0.000	0.000	0.000	0.000	0.474	0.000	0.000	555.199
675149: <i>RQ-4 Capability Enhancements</i>	185.486	221.554	160.472	134.589	0.000	134.589	29.283	19.318	30.283	41.307	Continuing	Continuing
67RTIP: <i>MP-RTIP</i>	244.794	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	245.294

Program MDAP/MAIS Code: 252
Project MDAP/MAIS Code(s): 293

Note

The sum of all Prior Years is actually \$2,291.016 million more than the represented total due to several projects ending.

A. Mission Description and Budget Item Justification

Beginning in FY21, to support the divestiture of the Block 20/30 aircraft, efforts will be pivoted to focus on supporting the Block 40 fleet and closing out Block 30 efforts to maximize value to the USAF and DoD.

This program element funds related Air Force projects sharing the RQ-4 platform in common: the RQ-4 Block 30, the RQ-4 Block 40, RQ-4 Capability Enhancements, and Multi-Platform Radar Technology Insertion Program (MP-RTIP). The RQ-4 Block 30 and Block 40 projects support the development and testing of the ACAT 1C RQ-4 capability and the initiation of the major modification ACAT programs. The majority of the modernization funding was transferred to the Capability Enhancement project (675149) to support upgrades and modifications, including established ACAT I and II programs, to the fielded RQ-4 weapon system to meet evolving threats and warfighter requirements. The MP-RTIP project completes development and testing of the baseline MDAP MP-RTIP sensor capability.

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Studies and activities may be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial Systems (UAS) Command and Control Initiative (UCI) or the DoD's Unmanned Control Segment standards (UCS) and Open Mission Systems (OMS). Ground Segment Modernization Program (GSMP) will incorporate UCI and UCS standards.

Per direction of USD(AT&L), the RQ-4 program was restructured from the original project 675144 (Baseline) into multiple projects: (1) Block 30, (2) Block 40, (3) GroundSegment/Communications System, and (4) Common-Airborne Sense and Avoid (C-ABSAA). In FY17 the Ground Segment/Communications System project (675147) ended. In FY18 the RQ-4 Block 40 project (675146) ended. Prior year funds in the amount of \$2031.377M were accounted for in project 675144, \$85.375M were accounted for in project 675147, and \$174.264M were accounted for in project 675146.

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver RQ-4 UAV capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	221.690	191.733	243.252	0.000	243.252
Current President's Budget	221.675	191.733	134.589	0.000	134.589
Total Adjustments	-0.015	0.000	-108.663	0.000	-108.663
• 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	-0.015	0.000	-108.663	0.000	-108.663

Change Summary Explanation

Beginning in FY21, to support the divestiture of the Block 20/30 aircraft, efforts will be pivoted to focus on supporting the Block 40 fleet and closing out Block 30 efforts to maximize value to the USAF and DoD.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV				Project (Number/Name) 675145 / RQ-4 Block 30			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
675145: RQ-4 Block 30	523.843	0.121	30.761	0.000	0.000	0.000	0.000	0.000	0.474	0.000	0.000	555.199
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The RQ-4 Block 30 Project was directed by an Acquisition Decision Memorandum (ADM) signed 14 Jun 2011 by USD (AT&L). At the time of the ADM signature, and subsequent designation of projects, budgets had already been finalized. Prior budgets for all projects are captured under the RQ-4 Baseline project, as its related Project (675144) was the core project for the RQ-4 program prior to the directed restructure.

In FY 2021, PE 0305220F, RQ-4 UAV, Project 675145, RQ-4 Block 30, efforts were transferred to PE 0305220F, RQ-4 UAV, Project 675149, RQ-4 Capability Enhancements, in order to close out Block 30 efforts and focus on supporting the Block 40 fleet.

A. Mission Description and Budget Item Justification

The RQ-4 Remotely Piloted Aircraft (RPA) provides a high altitude, deep look, long-endurance Intelligence, Surveillance, and Reconnaissance (ISR) capability that complements space and other airborne collectors during peacetime, crisis, and war-fighting scenarios. RDT&E funding in this project supports design, development, integration, and testing of capabilities needed to meet validated requirements for Block 30 aircraft, including continuing aircraft system upgrade for Enhanced Integrated Sensor Suite (EISS) sensors, the Airborne Signals Intelligence Payload (ASIP), and alternate sensor payloads.

This project supports system engineering/program management, test and evaluation, management services, and fielding support for all RQ-4 projects. This reflects contracting/acquisition strategy for these common elements within the Global Hawk program to provide efficiencies.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver RQ-4 UAV weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: RQ-4 Block 30 Development and Demonstration	0.121	11.800	-
Description: Global Hawk Unmanned Aerial Vehicle Development and Demonstration includes enterprise management, test and evaluation, software integration, and fielding support for all RQ-4 projects as well as periodic Operational Flight Program updates and releases, studies and analysis supporting future system enhancements.			
FY 2020 Plans: - Conclude EISS, ASIP, and MAU modification efforts			
FY 2020 to FY 2021 Increase/Decrease Statement:			

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675145 / RQ-4 Block 30
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
- Funding decreased due to Block 20/30 divestiture			
Title: RQ-4 Infrastructure	-	18.961	-
Description: RQ-4 Infrastructure includes systems engineering, program management, test and evaluation, and fielding support for all RQ-4 projects as well as periodic Operational Flight Program updates and releases, studies, development testing, and Other Government Costs (OGC). This funding was previously included in the RQ-4 Block 30 Development and Demonstration and Block 30 Government Test and Non-Prime Support Accomplishments/Planned Programs, including funding for the 412 TW at Edwards AFB, AFOTEC, JTIC DCGS and other interoperability partners.			
FY 2020 Plans: - Continue development of Operational Flight Program updates - Continue program test activities - Continue non-prime engineering and technical support and Other Government Costs			
FY 2020 to FY 2021 Increase/Decrease Statement: - Funding decreased due to Block 20/30 divestiture			
Accomplishments/Planned Programs Subtotals	0.121	30.761	-

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

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• APAF 05 Line Item HAWK00: RQ-4 Mods	123.715	1.704	40.468	-	40.468	41.076	64.433	123.305	8.991	0.000	403.692
• APAF 07 Line Item RQ4DIS: RQ-4 Post Production Support	40.641	47.246	32.585	-	32.585	63.487	66.819	15.962	0.000	0.000	266.740

Remarks

D. Acquisition Strategy
The RQ-4 program uses an evolutionary acquisition strategy to provide the warfighter with a near-term combat capability with increased time-phased capability improvements as technology and risk achieve satisfactory levels. Northrop Grumman Corporation is the prime contractor. A suite of contract vehicles is used for development efforts: primarily, Indefinite Delivery, Indefinite Quantity (IDIQ) contracts cover development, system upgrade, production, retrofit, fielding, and sustainment efforts. MS-177 Sensor Enhancement RDT&E is being contracted directly with the Original Equipment Manufacturer (OEM), Collins Aerospace.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
3600 / 7	PE 0305220F / RQ-4 UAV	675145 / RQ-4 Block 30

The program successfully completed Milestone (MS) C in February 2015 and is transitioning core program activities to the Operations and Support phase of the Defense Acquisition System over the next several years. Future required capabilities beyond the core Acquisition Category (ACAT) IC RQ-4 program will be completed as separate ACAT II and ACAT III modification programs.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675145 / RQ-4 Block 30
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Global Hawk Engineering Manufacturing and Development	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	323.010	0.121	Jun 2019	11.800	Jan 2020	-		-		-	0.000	334.931	346.557
RQ-4 MS-177 Sensor Integration	SS/ Various	Various : Various	121.332	-		-		-		-		-	0.000	121.332	212.033
RQ-4 Infrastructure	Various	Various : Various	18.806	-		13.961	Mar 2020	-		-		-	106.646	139.413	147.214
Subtotal			463.148	0.121		25.761		-		-		-	106.646	595.676	N/A

Remarks

Target Value of the Global Hawk EMD, IDIQ, and EPIC Contracts are not segregated by Budget Project Number.
 Target Value of MS-177 contract includes \$90.602M of funding in Budget Project Number 675149, RQ-4 Capability Enhancements.
 Target Value of RQ-4 Infrastructure Contracts are not segregated by Budget Project Number.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Non Prime Technical Support	Various	Various : Dayton, OH	3.516	-		-		-		-		-	0.000	3.516	3.516
Subtotal			3.516	-		-		-		-		-	0.000	3.516	N/A

Remarks

Target Value of the Global Hawk effort is not segregated by Budget Project Number.

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	40.626	-		5.000	Jan 2020	-		-		-	0.000	45.626	50.789
Subtotal			40.626	-		5.000		-		-		-	0.000	45.626	N/A

Remarks

Target Value of the Global Hawk effort is not segregated by Budget Project Number.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675145 / RQ-4 Block 30
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
PMA: A&AS	Various	Various : Dayton, OH	12.526	-		-		-		-		-	0.000	12.526	12.526
PMA: Other Government Costs	Various	Various : Dayton, OH	4.027	-		-		-		-		-	0.000	4.027	6.060
Subtotal			16.553	-		-		-		-		-	0.000	16.553	N/A

Remarks
Target Value of the Global Hawk effort is not segregated by Budget Project Number.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	523.843	0.121	30.761	-	-	-	106.646	661.371	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675145 / RQ-4 Block 30
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FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

RQ-4 Block 30	
Enhanced Weather Capability Development	
ASIP Inc 1 Development	
RQ-4 Infrastructure & Test	

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675145 / RQ-4 Block 30
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
RQ-4 Block 30				
Enhanced Weather Capability Development	1	2019	2	2020
ASIP Inc 1 Development	1	2019	3	2020
RQ-4 Infrastructure & Test	1	2019	4	2020

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Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV				Project (Number/Name) 675149 / RQ-4 Capability Enhancements			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
675149: RQ-4 Capability Enhancements	185.486	221.554	160.472	134.589	0.000	134.589	29.283	19.318	30.283	41.307	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The RQ-4 Remotely Piloted Aircraft (RPA) provides a high altitude, deep look, long-endurance Intelligence, Surveillance, and Reconnaissance (ISR) capability that complements space and other airborne collectors during peacetime, crisis, and war-fighting scenarios. RDT&E funding in this project supports design, development, integration, and testing of capabilities needed to meet validated requirements for RQ-4 aircraft, including continuing aircraft system upgrade for current and alternate sensor payloads.

This funding also supports aircraft systems upgrades to include continuing airframe updates, aircraft operations surety, cybersecurity, airspace and interoperability enhancements, information assurance, and mission critical repair of Government Furnished Equipment (GFE). This project will include systems engineering/program management, configuration and data management, test and evaluation, management services, Deficiency Report (DR)/Military Intelligence Program (MIP) Investigations, studies and analysis and fielding support for Block 30, Block 40, and Ground Segment/Communication Systems.

Activities include airspace and interoperability and communication enhancements and updates, periodic Operational Flight Program updates and releases, airframe and software upgrades, effort to bring early production aircraft to current operational configurations, deficiency report resolution across RQ-4 fleet, sensor enhancements including data distribution and storage, and alternate sensor upgrades including the MS-177, ISR Payload Adapter, enhanced communications capabilities, support for demonstration and technology insertion, development and testing of ice protection system, enhanced mission flexibility to accommodate changes to mission objectives in-flight, enhancements to support multi-domain contested environment operations, and studies and analysis supporting future system enhancements. Additionally, this project supports design, development, integration, and testing of items needed to meet validated requirements for Block 20/30/40 aircraft, including further development, mode creation, integration and test of the Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor capabilities, continued aircraft/communications systems upgrade, increased power generation, additional radar modes, reliability and maintainability improvements, Ground Segment Modernization Program (GSMP) efforts, as well as next-generation communications capabilities. GSMP resolves fleet grounding Diminishing Manufacturing Sources (DMS) and obsolescence issues associated with ground segment equipment and provides critical warfighter capabilities such as building-based multi-aircraft control. It will also enhance interoperability data dissemination as well as provide training capability. This funding also addresses DMS resolution for other mission critical equipment.

RDT&E funding in this project also supports design, development, integration and testing of the weapon system's legacy ground elements and communications capabilities to enhance functionality and maintain interoperability prior to GSMP fielding. The ground segment currently includes the Mission Control Elements (MCE), the Launch and Recovery Elements (LRE), and the networking resources required to simultaneously disseminate intelligence information while remaining compliant with DoD cybersecurity network requirements to operate in the DoD Information Network (DoDIN).

This project supports system engineering/program management, test and evaluation, management services and fielding support for all RQ-4 projects. This reflects contracting/acquisition strategy for these common elements within the Global Hawk program to provide efficiencies.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675149 / RQ-4 Capability Enhancements
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The RQ-4 program will maintain and upgrade interoperability for Blocks 20/30/40 with system of systems partners and continue to incorporate applicable synergies with other platforms such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation & Dissemination (PED) elements. The networking capability for intelligence dissemination is required to provide the data transport interface between the Weapons System, Operations Centers, and external Intelligence Community customers.

Beginning in FY21, to support the divestiture of the Block 20/30 aircraft, efforts will be pivoted to focus on supporting the Block 40 fleet and closing out Block 30 efforts to maximize value to the USAF and DoD.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver RQ-4 UAV weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605831F.

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Studies and activities may be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial Systems (UAS) Command and Control Initiative (UCI) or the DoD's Unmanned Control Segment standards (UCS) and Open Mission Systems (OMS). Ground Segment Modernization Program (GSMP) will incorporate UCI and UCS standards.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
<p>Title: RQ-4 Capability Enhancements</p> <p>Description: RQ-4 Development and Demonstration (includes development, system integration, software integration, development test, and fielding support for RQ-4 projects including reliability and maintainability (R&M), diminishing manufacturer sourcing (DMS) as well as studies and analysis supporting future system enhancements). Also supports RQ-4 development testing at the 412 Test Wing at Edwards AFB, CA and also includes funding for support from Air Force Operational Test and Evaluation Center (AFOTEC), Joint Interoperability Test Command (JITC), Distributed Common Ground System (DCGS), other interoperability partners and Other Government Costs (OGC).</p> <p>FY 2020 Plans: - N/A</p> <p>FY 2021 Plans: - N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: - N/A</p>	7.107	0.000	0.000
<p>Title: Integrated Functional Capability 9 (IFC 9)</p>	7.771	0.000	0.000

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675149 / RQ-4 Capability Enhancements		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
<p>Description: IFCs are periodic hardware and software capability, releases similar to an Operational Flight Program (OFF). IFC 9 provides, radar Software Development (RSD) 1.5, Nose Wheel Steering enhancement, in flight Waypoint Modification as well as numerous software enhancement and deficiency resolutions, and Other Government Costs (OGC).</p> <p>FY 2020 Plans: - N/A</p> <p>FY 2021 Plans: - N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: - N/A</p>				
<p>Title: RQ-4 Ground Segment Modernization Program (GSMP)</p> <p>Description: GSMP resolves fleet grounding DMS and obsolescence issues associated with ground segment equipment and provides critical warfighter capabilities such as building-based multi-aircraft control. It will also enhance interoperability data dissemination as well as provide training capability.</p> <p>FY 2020 Plans: - Continue hardware purchase and installation for OT locations - Continue development technical publications, courseware and a trainer for the GSMP - Begin Developmental Test and Evaluation of GSMP.</p> <p>FY 2021 Plans: - Will conclude Developmental Test of GSMP. - Will prepare system for entry into Initial Operational Test and Evaluation.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: - Funding decreased due to completion of system integration.</p>		130.897	101.381	81.500
<p>Title: RQ-4 MS-177 Sensor Integration</p> <p>Description: Integration of MS-177 multispectral sensor into Block 30</p> <p>FY 2020 Plans: - Reduce MS-177A development and integration to minimal, demonstration for potential use on other DOD platforms.</p> <p>FY 2021 Plans:</p>		19.305	18.140	0.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
- N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: - Funding decreased due to FY21 funding being eliminated as part of Block 20/30 divestiture.			
Title: RQ-4 Infrastructure	56.474	40.951	53.089
Description: RQ-4 Infrastructure includes system engineering, program management, test and evaluation, and fielding support for all RQ-4 projects as well as periodic Operational Flight Program (OFP) updates and releases, development testing, and Other Government Costs (OGC). This funding was previously included in the RQ-4 Capability Enhancements Accomplishment/Planned Program, including funding for the 412th TW at Edwards AFB, AFOTEC, JTIC DCGS and other interoperability partners.			
FY 2020 Plans: - Continue to develop OFP releases - Perform government test and non-prime engineering and technical support and OGC - Continue to perform Contractor Test supporting MS-177, GSMP, and other capabilities being developed - Conduct risk reduction and analysis of ice protection solutions, continued system interoperability and upgrades, cybersecurity and information assurance and reliability & maintainability, and associated testing			
FY 2021 Plans: - Will begin to support the divestiture of the Block 20/30 aircraft, efforts will be pivoted to focus on supporting the Block 40 fleet and closing out Block 30 efforts to maximize value to the USAF and DoD			
FY 2020 to FY 2021 Increase/Decrease Statement: - Funding increased due to transfer of funds from Project 675145. Funds required to fulfill existing contractual obligations.			
Accomplishments/Planned Programs Subtotals	221.554	160.472	134.589

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 Line Item HAWK00: RQ-4 Mods	123.715	1.704	40.468	-	40.468	41.076	64.433	123.305	8.991	0.000	403.692
• APAF 07 Line Item RQ4DIS: RQ-4 Post Production Support	40.641	47.246	32.585	-	32.585	63.487	66.819	15.962	0.000	0.000	266.740

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D. Acquisition Strategy

The RQ-4 program uses an evolutionary acquisition strategy to provide the warfighter with a near-term combat capability with increased time-phased capability improvements as technology and risk achieve satisfactory levels. Northrop Grumman Corporation is the prime contractor. A suite of contract vehicles is used for development efforts: primarily, Indefinite Delivery, Indefinite Quantity (IDIQ) contracts cover development, system upgrade, production, retrofit, fielding, and sustainment efforts. MS-177 Sensor Enhancement RDT&E is being contracted directly with the Original Equipment Manufacturer (OEM), Collins Aerospace.

The program successfully completed Milestone (MS) C in February 2015 and is transitioning core program activities to the Operations and Support phase of the Defense Acquisition System over the next several years. Future required capabilities beyond the core Acquisition Category (ACAT) IC RQ-4 program will be completed as separate ACAT II and ACAT III modification programs.

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675149 / RQ-4 Capability Enhancements
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
RQ-4 Capability Enhancements	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	1.297	1.083	Dec 2019	-		-		-		-	Continuing	Continuing	2.380
Integrated Functional Capability 9	SS/CPIF	Northrop Grumman Integrated Systems : San Diego, CA	0.000	7.771	Feb 2020	-		-		-		-	Continuing	Continuing	7.771
RQ-4 Ground Segment Modernization Program (GSMP)	SS/CPIF	Northrop Grumman Integrated Systems : San Diego, CA	74.614	130.897	Nov 2018	101.381	Jan 2020	81.500	Jan 2021	-		81.500	Continuing	Continuing	414.785
RQ-4 MS-177 Sensor Integration	SS/ Various	Various : San Diego, CA	53.158	19.305	Feb 2019	18.140	Jan 2020	-		-		-	Continuing	Continuing	212.033
RQ-4 Infrastructure	Various	Various : Various	26.282	53.045	Mar 2019	22.751	Mar 2020	35.600	Mar 2021	-		35.600	Continuing	Continuing	203.878
RQ-4 Block 40 ISR Payload Adapter Design Study	SS/TBD	NGAS : San Diego, CA	8.000	-		-		-		-		-	Continuing	Continuing	8.000
Subtotal			163.351	212.101		142.272		117.100		-		117.100	Continuing	Continuing	N/A

Remarks
 Target Value of the RQ-4 EMD, IDIQ, and EPIC Contracts is not segregated by Budget Project Number.
 Target Value of IFC 9 is \$7.771M, paying for proposal prep costs only.
 Target Value of GSMP contract includes \$43.414M of funding in Budget Project Number 675147, RQ-4 Grnd Segment/Comm System
 Target Value of MS-177 contract includes \$121.431M of funding in Budget Project Number 675145, RQ-4 Block 30
 Target Value of RQ-4 Infrastructure is not segregated by Budget Project Number.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Non Prime Technical Support	Various	Various : Dayton, OH	0.527	1.590	Jan 2019	0.900	Jan 2020	1.290	Jan 2021	-		1.290	Continuing	Continuing	-
Subtotal			0.527	1.590		0.900		1.290		-		1.290	Continuing	Continuing	N/A

Remarks
 Target Value of the RQ-4 effort is not segregated by Budget Project Number.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675149 / RQ-4 Capability Enhancements
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	16.421	5.134	Mar 2019	5.360	Jan 2020	5.562	Jan 2021	-		5.562	Continuing	Continuing	-
Subtotal			16.421	5.134		5.360		5.562		-		5.562	Continuing	Continuing	N/A

Remarks
Target Value of the RQ-4 effort is not segregated by Budget Project Number.

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
PMA: A&AS	Various	Various : Dayton, OH	4.829	0.655	Jan 2019	4.700	Nov 2019	4.200	Nov 2020	-		4.200	Continuing	Continuing	-
PMA: Other Government Costs	Various	Varous : Dayton, OH	0.358	2.074	Oct 2018	7.240	Oct 2019	6.437	Oct 2020	-		6.437	Continuing	Continuing	-
Subtotal			5.187	2.729		11.940		10.637		-		10.637	Continuing	Continuing	N/A

Remarks
Target Value of the RQ-4 effort is not segregated by Budget Project Number.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	185.486	221.554	160.472	134.589	-	134.589	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675149 / RQ-4 Capability Enhancements
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	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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>RQ-4 Capability Enhancements</i>																												
Sensor Enhancements & Upgrades (MS-177) Development																												
Ice Protection System Risk Reduction & Analysis																												
Ground Segment Maintenance/Upgrades Development																												
Ground Segment Modernization Program Development																												
Comms Systems Maintenance/Upgrades Development																												
RQ-4 Infrastructure & Test																												
Block 40 ISR Payload Adapter Design Study																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 675149 / RQ-4 Capability Enhancements

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
RQ-4 Capability Enhancements				
Sensor Enhancements & Upgrades (MS-177) Development	1	2019	4	2020
Ice Protection System Risk Reduction & Analysis	1	2019	4	2020
Ground Segment Maintenance/Upgrades Development	1	2019	4	2019
Ground Segment Modernization Program Development	1	2019	1	2023
Comms Systems Maintenance/Upgrades Development	1	2019	4	2025
RQ-4 Infrastructure & Test	1	2019	4	2025
Block 40 ISR Payload Adapter Design Study	4	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 67RTIP / MP-RTIP
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
67RTIP: MP-RTIP	244.794	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	245.294
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 293

Note

Beginning in FY09, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) funding was transferred to program 0305220F (RQ-4) Global Hawk (GH). Therefore, the data in this package includes only FY09 and subsequent funding related to program 0305220F.

A. Mission Description and Budget Item Justification

The MP-RTIP sensor was designed as a family of modular, scalable sensors to provide next generation capabilities to support sustainable network centric operations with integrated Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) capability. MP-RTIP provides the RQ-4 Block 40 aircraft with advanced Synthetic Aperture Radar (SAR) and Moving Target Indicator (MTI) sensor capabilities.

This project (67RTIP) includes MP-RTIP modernization and integration efforts for the RQ-4 Block 40 Platform. MP-RTIP modernization studies and development insertion include the implementation of Maritime Modes (MM), Maritime Inverse SAR (MISAR), product improvements and other advanced capabilities. GH Program Office will continue integration of radar capabilities to include Maritime Modes integration into RQ-4 aircraft and ground systems.

Activities also include studies and analysis supporting current and future program planning and future modes development based on user requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver MPRTIP weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605831F.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Multi-Platform Radar Tech Insertion Program (MP-RTIP)	0.000	0.500	-
Description: MP-RTIP development and integration			
FY 2020 Plans: - Complete close-out actions for Prime contract.			
FY 2020 to FY 2021 Increase/Decrease Statement: Funding decreased due to completion of project 67RTIP.			
Accomplishments/Planned Programs Subtotals	0.000	0.500	-

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 67RTIP / MP-RTIP
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 Line Item HAWK00: RQ-4 Mods	123.715	1.704	40.468	-	40.468	41.076	64.433	123.305	8.991	0.000	403.692
• APAF 07 Line Item RQ4DIS: RQ-4 Post Production Support	40.641	47.246	32.585	-	32.585	63.487	66.819	15.962	0.000	0.000	266.740
• RDTE 07 PE 0305238F: NATO AGS	51.745	33.322	37.675	-	37.675	1.745	1.784	1.826	1.869	0.000	129.966

Remarks

D. Acquisition Strategy

- Will complete transition to sustainment and GH Program Office will have responsibility for future radar development.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 67RTIP / MP-RTIP
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Product Development	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
MP-RTIP	SS/CPFF	Northrop Grumman Integrated Systems : El Segundo, CA	196.996	0.000		0.500		-		-		-	0.000	197.496	-
Subtotal			196.996	0.000		0.500		-		-		-	0.000	197.496	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Support	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
IRT Study	Various	Various : Various, NV	0.105	-		-		-		-		-	0.000	0.105	-
Logistics Planning	SS/CPFF	Northrop Grumman Integrated Systems : El Segundo, CA	3.667	-		-		-		-		-	0.000	3.667	-
Subtotal			3.772	-		-		-		-		-	0.000	3.772	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Test and Evaluation	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
Flight Test & Evaluation	MIPR	Various : Various, NV	9.536	-		-		-		-		-	0.000	9.536	-
Subtotal			9.536	-		-		-		-		-	0.000	9.536	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Management Services	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 67RTIP / MP-RTIP
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
PMA: A&AS	C/CPFF	Various : Various, NV	30.698	-		-		-		-		-	0.000	30.698	-
PMA: Other Gov't Cost	Various	Various : Boston, MA	3.792	-		-		-		-		-	0.000	3.792	-
Subtotal			34.490	-		-		-		-		-	0.000	34.490	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	244.794	0.000	0.500	-	-	-	0.000	245.294	N/A

Remarks
Funds are required in FY20 to close out the entire MP-RTIP SDD contract #F19628-00-C-0100.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 67RTIP / MP-RTIP
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FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

MP-RTIP	
SDD Contract Close Out	[REDACTED]

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305220F / RQ-4 UAV	Project (Number/Name) 67RTIP / MP-RTIP
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MP-RTIP				
SDD Contract Close Out	2	2020	3	2020