

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV
--	--

COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	2,484.134	241.828	188.053	256.307	0.000	256.307	321.807	260.038	300.498	235.024	598.457	4,886.146
675145: RQ-4 Block 30	29.932	206.436	135.557	126.737	0.000	126.737	45.430	26.982	27.799	25.574	0.000	624.447
675146: RQ-4 Block 40	156.455	12.637	4.944	0.089	0.000	0.089	0.138	0.146	0.138	0.145	0.000	174.692
675147: RQ-4 Grnd Segment/ Comm System	53.915	0.000	31.460	0.175	0.000	0.175	0.000	0.000	0.000	0.000	0.000	85.550
675148: Common-Airborne Sense and Avoid (C-ABSAA)	0.000	11.829	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.829
675149: RQ-4 Capability Enhancements	0.000	0.000	0.000	121.838	0.000	121.838	264.338	221.011	260.449	196.975	598.457	1,663.068
67RTIP: MP-RTIP	212.455	10.926	16.092	7.468	0.000	7.468	11.901	11.899	12.112	12.330	0.000	295.183

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

<sup>(+)</sup> The sum of all Prior Years is \$2031.377 million less than the represented total due to several projects ending

**Note**

This program, BA 07 PE 0305220F, project 675149, RQ-4 Capability Enhancements, is a new start.  
 This program, BA 07 PE 0305220F, project 675149, Ground Segment Modernization Program (GSMP), is a new start.  
 This program, BA 07 PE 0305220F, project 675149, Capability Enhancements Government Test and Non-Prime Support, is a new start.

In FY 2017 and beyond, Program 0305220F, RQ-4, Project 675145, RQ-4 Block 30, Project 675146, RQ-4 Block 40, and Project 675147, RQ-4 Ground Segment/Comm System, modernization efforts were transferred to Program 0305220F, RQ-4, Project 675149, RQ-4 Capability Enhancements in order to allow greater visibility into Global Hawk modernization efforts.

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

This program element funds five (5) related Air Force projects sharing the RQ-4 platform in common: the RQ-4 Block 30, the RQ-4 Block 40, the RQ-4 Ground Segment/Communication System, RQ-4 Capability Enhancements, and Multi-Platform Radar Technology Insertion Program (MP-RTIP) in FY17 and forward.

Global Hawk:

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. This funding supports the development of RQ-4 aircraft,

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	
<p>payloads, ground and support segments. The Block 20/30/40 RQ-4B RPA is the successor to the Block 10 RQ-4A, and is designed to employ 3,000 pounds of payload and enable Multi-Intelligence (multi-INT) collecting.</p> <p>Block 30 (Project 675145) employs upgraded Synthetic Aperture Radar (SAR) and Electro-Optical/Infrared (EO/IR) sensors known as the Enhanced Integrated Sensor Suite (EISS), the Airborne Signals Intelligence Payload (ASIP) sensor, and is being upgraded with a modular ISR payload adapter to accommodate Next Gen Sensors. Activities include mission planning development and testing, Mode 5 Automatic Dependent Surveillance-Broadcast (ADS-B), enhanced weather capability development and testing, ice protection system development and testing, airspace and interoperability and communication enhancements and updates, airframe upgrades, sensor upgrades and integration of alternate sensors, risk reduction and integration, periodic Operation Flight Program updates and releases, and resolution of issues with Diminishing Manufacturing Sources (DMS). This will include systems engineering/program management, configuration and data management, test and evaluation, management services, Deficiency Report/Materiel Improvement Project (DR/MIP) Investigations, studies and analysis and fielding support for Projects 675146 (Block 40), 675147 (Ground Segment/Comm System), and 675149 (Capability Enhancements).</p> <p>The Block 40 (Project 675146) employs the MP-RTIP (Project 67RTIP) radar sensor. In FY15 and beyond, this includes the Block 40 costs for the development of enhanced weather capability development and testing, additional sensor modes, mission planning development and testing, airspace integration activities including Mode 5 Automatic Dependent Surveillance-Broadcast (ADS-B), airspace and interoperability and communication enhancements and updates, airframe and sensor enhancements to the Block 40 fleet. Activities also include studies and analysis, providing support to future system enhancements, communication and interoperability enhancements, periodic Operational Flight Program updates and releases, current and future program planning, and project execution.</p> <p>The Ground Segment/Communication System (Project 675147) includes the Ground Segment Modernization Program (GSMP), Communication System Modernization Program (CSMP), and the Next Generation Communication System. The ground segment currently includes the Mission Control Element (MCE), the Launch and Recovery Element (LRE), and the networking resources required to simultaneously disseminate intelligence while remaining compliant with Department of Defense (DoD) cybersecurity network requirements to operate on the Global Information Grid. As a result of the reinstatement of the Block 30s in the FY15 PB, the requirement for ground stations operations significantly increased which increased the need for efforts to address DMS issues. The GSMP supports a 20 year operational lifecycle, and comprises an approach that enhances capability and combines the functionality of legacy MCEs and LREs into a single building-based configuration. It will also enhance interoperability data dissemination and provide a robust training capability. The CSMP will provide enhancements across the RQ-4 communication network.</p> <p>RQ-4 Capability Enhancements (Project 675149) begins in FY17 and is intended to provide greater visibility into Global Hawk modernizations by consolidating the majority of the efforts from Project 675145 (Block 30), Project 675146 (Block 40), and Project 675147 (Ground Segment/Comm System) consistent with the approved acquisition strategy. Activities include airspace and interoperability and communication enhancements and updates, airframe upgrades, sensor upgrades and integration of alternate sensors, risk reduction and integration, ice protection system development and testing, program protection projects, cybersecurity, government furnished equipment repair, legacy data items (technical data packages), resolution of issues with DMS, periodic Operation Flight Program updates and releases, and additional sensor modes. This will include systems engineering/program management, configuration and data management, test and evaluation, management services, DR/MIP Investigations, studies and analysis and fielding support for Projects 675145 (Block 30), 675146 (Block 40), and 675147 (Ground Segment/Comm System). Activities also include the GSMP, CSMP and the Next Generation Communication System. 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</p>		

UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	
<p>systems, and Transport, Processing, Exploitation &amp; Dissemination (T-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.</p> <p>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 System (UAS) Command and Control Initiative (UCI) or the DoD's Unmanned Control Segment standards (UCS) and Open Mission Systems (OMS). GSMP and CSMP will incorporate UCI and UCS standards.</p> <p>Common-Airborne Sense and Avoid (C-ABSAA): In FY 2016, PE 0305220F, RQ-4, Project 675148, Common-Airborne Sense and Avoid (C-ABSAA), efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148 in order to provide greater visibility into this capability and prepares for expanded applications by making the capability program and platform agnostic.</p> <p>C-ABSAA is an analysis and developmental effort in the pre-Material Development Decision phase of the acquisition lifecycle which supports emerging warfighter requirements to fully integrate Group 4-5 RPA into the National Airspace System (NAS), international airspace, other nations' sovereign airspace, and operational combat airspace to conduct the entire range of military operations across all mission environments. C-ABSAA also supports the "Worldwide Operations" Key Performance Parameter (KPP) in larger RPA requirement documents, and Public Law 112-239 directing DoD collaboration with the Federal Aviation Administration (FAA) and the National Air and Space Administration (NASA) to safely integrate RPA in the NAS. Funding in this project supports the development of a Sense and Avoid (SAA) capability set for Group 4-5 RPA and covers analysis, research, and developmental activities as well as infrastructure and other government costs. Activities included support to the development of warfighter requirements and analysis of possible solution alternatives, the collaboration with the FAA, NASA, and the other Services to develop national policy and standards, and SAA related studies, analysis, modeling and simulation, program planning and project execution. RPA platform specific integration and testing is not included.</p> <p>MP-RTIP: 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.</p> <p>This project (67RTIP) includes all MP-RTIP design, development, test, and integration efforts for the RQ-4 Block 40 platform. Integration activities include platform integration of the MP-RTIP sensor and sustainment logistics planning support. MP-RTIP studies and development insertion include the implementation of Maritime Modes (MM) and other radar modes, electronic protection, product improvements and other advanced capabilities.</p> <p>Activities also include studies and analysis supporting current and future program planning and future modes development based on user requirements.</p>		

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2017 Air Force	<b>Date:</b> February 2016
--	----------------------------

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV
--	--

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) C-ABSAA. Prior year funds in the amount of \$2031.377M were accounted for in project 675144.

The Cost to Complete and Total Cost for Major Defense Acquisition Program (MDAP) projects in this program element are documented in the R3. Total Cost on the R2 is not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding for in project 675144.

The FY 2017 funding request was reduced by \$33.19 million to account for the availability of prior year execution balances.

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>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2015</u></b>	<b><u>FY 2016</u></b>	<b><u>FY 2017 Base</u></b>	<b><u>FY 2017 OCO</u></b>	<b><u>FY 2017 Total</u></b>
Previous President's Budget	241.828	208.053	289.497	0.000	289.497
Current President's Budget	241.828	188.053	256.307	0.000	256.307
Total Adjustments	0.000	-20.000	-33.190	0.000	-33.190
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-20.000			
• 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	-33.190	0.000	-33.190

**Change Summary Explanation**

FY16 \$20.0M decrease: Delays in Global Hawk program

FY17 \$33.2M decrease: Reduction to account for the availability of prior year execution balances

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675145: RQ-4 Block 30	29.932	206.436	135.557	126.737	0.000	126.737	45.430	26.982	27.799	25.574	0.000	624.447
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

The RQ-4 Block 40 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 2017 and beyond, Program 0305220F, RQ-4, Project 675145, Block 30, modernization efforts will be transferred to Program 0305220F, RQ-4, Project 675149, Capability Enhancements. The transfer of these efforts will allow greater visibility into Global Hawk upgrade efforts.

**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 funding also supports aircraft systems upgrades to include continuing aircraft operations surety, cybersecurity, information assurance, and mission critical repair of Government Furnished Equipment (GFE).

Activities include mission planning development and testing, completion of Synthetic Aperture Radar (SAR) - Complex Imagery (CI) development testing, enhanced weather capability development and testing, airspace and interoperability enhancements and updates, airframe and software upgrades and deficiency report resolution across RQ-4 fleet, periodic Operation Flight Program updates and releases, sensor interoperability and communication enhancements and alternate sensor upgrades, program protection projects, upgrades to ASIP Signals Intelligence (SIGINT) sensor, Identification Friend or Foe (IFF) Mode 5 Automatic Dependent Surveillance-Broadcast (ADS-B) development and testing, development and testing activities associated with enhancing sensor capability and sensor integration, development and testing of ice protection system, support of demonstration and technology insertion, and studies and analysis supporting future system enhancements.

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.

This program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities will be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial System

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30		
(UAS) Command and Control Initiative (UCI), the DoD's Unmanned Control Segment standards (UCS), or Open Mission Systems (OMS) as well as technology insertion activities in support of Better Buying Power (BBP).				
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Title:</b> RQ-4 Block 30 Development and Demonstration</p> <p><b>Description:</b> RQ-4 Development and Demonstration (includes enterprise management, test and evaluation, software integration, and fielding support for projects 675145, 675146 (Block 40), 675147 (Ground Segment/Comm System), and 675149 (Capability Enhancements) as well as periodic Operational Flight Program updates and releases, studies and analysis supporting future system enhancements)</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Continued enhancement of Enhanced Integrated Sensor Suite (EISS), including completion of Synthetic Aperture Radar (SAR)-Complex Imagery (CI) development</li> <li>- Continued development of Joint Mission Planning System (JMPS) mission planning integration</li> <li>- Began Enhanced Weather Capability effort, Identification Friend or Foe (IFF) Mode 5/Automatic Dependent Surveillance - Broadcast (ADS-B), and Airborne Signals Intelligence Payload (ASIP) enhancements</li> <li>- Submitted Sensor Study</li> <li>- Began engine ice protection trade study</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Begin development activities to support IFF and sensor interoperability communication enhancements</li> <li>- Continue development of system interoperability, IFF Mode 5/ADS-B, enhanced weather capability, JMPS mission planning, cybersecurity and information assurance and reliability &amp; maintainability, and associated testing &amp; evaluation</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue upgrades to ASIP SIGINT and EISS sensors</li> <li>- Will continue airspace integration activities including IFF Mode 5/ADS-B, comm interoperability and upgrades, cybersecurity and information assurance and reliability &amp; maintainability, and associated testing</li> <li>- Will initiate Operational Flight Program updates and releases</li> <li>- Begin development of ice protection system</li> <li>- Operational test and completion of enhanced weather capability and JMPS</li> </ul>		140.322	69.709	93.378
<p><b>Title:</b> MS-177 Sensor Integration</p> <p><b>Description:</b> Integration of MS-177 multispectral sensor into Block 30</p> <p><b>FY 2015 Accomplishments:</b></p>		42.000	40.400	4.000

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
- Completed pre-contract activities for integration contract of MS-177 sensor <b>FY 2016 Plans:</b> - Contract award for MS-177 integration and development activities - Initiate sensor enhancement RDT&E of additional spectral band request for FOC capability <b>FY 2017 Plans:</b> - Will continue the development, integration, and testing of MS-177 on Block 30			
<b>Title:</b> Block 30 Government Test and Non-Prime Support <b>Description:</b> Government test, non-prime technical support and Other Government Costs (OGC) -- Funding supports RQ-4 development testing at the 412 Test Wing at Edwards AFB, CA as well as 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 OGC. <b>FY 2015 Accomplishments:</b> - Continued government test - Continued non-prime engineering and technical support and Other Government Costs <b>FY 2016 Plans:</b> - Continue government test - Continue non-prime engineering and technical support and Other Government Costs <b>FY 2017 Plans:</b> - Will continue government test - Will continue non-prime engineering and technical support and Other Government Costs	24.114	25.448	29.359
<b>Accomplishments/Planned Programs Subtotals</b>	206.436	135.557	126.737

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA04: Line Item # HAEUAV: RQ-4	54.475	29.900	12.966	0.000	12.966	0.000	0.000	0.000	0.000	0.000	3,810.159
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	21.354	50.022	32.045	0.000	32.045	55.305	81.078	40.029	155.662	642.863	1,481.419
• APAF: BA07: Line Item # RQ4DIS: RQ-4 Post Production Support	0.000	0.000	0.099	0.000	0.099	58.547	68.177	46.654	0.000	0.000	173.477

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force	<b>Date:</b> February 2016
---	----------------------------

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

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

**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 through FY 2020. MS-177 Sensor Enhancement RDT&E is being contracted directly with the Original Equipment Manufacturer (OEM), UTAS.

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.

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

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

<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 & Development	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	28.982	138.902	Jul 2015	69.609	May 2016	93.378	Jul 2017	0.000		93.378	110.928	441.799	459.930
MS-177	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	0.000	42.000	Nov 2015	40.400	Jul 2016	4.000	Nov 2016	0.000		4.000	0.000	86.400	86.400
<b>Subtotal</b>			28.982	180.902		110.009		97.378		0.000		97.378	110.928	528.199	546.330

**Remarks**  
Target Value of the Global Hawk EMD, IDIQ, and EPIC Contracts are not segregated by Budget Project Number.

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	1.420	Jan 2015	0.100	Feb 2016	0.423	Jan 2016	0.000		0.423	0.396	2.339	-
<b>Subtotal</b>			0.000	1.420		0.100		0.423		0.000		0.423	0.396	2.339	-

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

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.950	16.522	Oct 2014	17.008	Oct 2015	23.604	Oct 2016	0.000		23.604	8.145	66.229	-
<b>Subtotal</b>			0.950	16.522		17.008		23.604		0.000		23.604	8.145	66.229	-

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

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

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

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	5.270	Nov 2014	5.064	Nov 2015	3.200	Nov 2015	0.000		3.200	5.090	18.624	-
PMA: Other Government Costs	Various	Various : Dayton, OH	0.000	2.322	Oct 2014	3.376	Oct 2015	2.132	Oct 2015	0.000		2.132	1.226	9.056	-
<b>Subtotal</b>			0.000	7.592		8.440		5.332		0.000		5.332	6.316	27.680	-

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

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	29.932	206.436	135.557	126.737	0.000	126.737	125.785	624.447	-

**Remarks**

**UNCLASSIFIED**

**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force** **Date:** February 2016

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

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
SAR Complex Imagery Development																												
Enhanced Weather Capability Development																												
Mode 5/ADS-B Development																												
ASIP Inc 1 Development																												
Mission Planning Development																												
Sensor Enhancements & Upgrades (MS-177) Development																												
Operational Flight Program Updates & Releases																												
Test Support																												

**UNCLASSIFIED**

**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Air Force **Date:** February 2016

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SAR Complex Imagery Development	3	2015	2	2016
Enhanced Weather Capability Development	2	2015	1	2017
Mode 5/ADS-B Development	4	2015	4	2017
ASIP Inc 1 Development	4	2015	1	2017
Mission Planning Development	1	2015	3	2016
Sensor Enhancements & Upgrades (MS-177) Development	4	2015	4	2016
Operational Flight Program Updates & Releases	3	2017	4	2021
Test Support	1	2015	4	2017

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675146: RQ-4 Block 40	156.455	12.637	4.944	0.089	0.000	0.089	0.138	0.146	0.138	0.145	0.000	174.692
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

The RQ-4 Block 40 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 2017 and beyond, Program 0305220F, RQ-4, Project 675146, Block 40, modernization efforts will be transferred to Program 0305220F, RQ-4, Project 675149, Capability Enhancements. The transfer of these efforts will allow greater visibility into Global Hawk modernization efforts.

**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 items needed to meet validated requirements for Block 40 aircraft, including further development, integration and test of the Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor capabilities. The Block 40 program provides critical Synthetic Aperture Radar (SAR) and Ground Moving Target Indicator (GMTI) data to the warfighter. This funding also supports continued aircraft/communications systems upgrade to include Identification Friend of Foe (IFF) Mode 5/ADS-B, program protection projects, mission planning upgrade development and testing, airspace and interoperability and communication enhancements and updates, enhanced weather capability, development and testing of ice protection system, additional radar modes, sensor enhancements, reliability and maintainability improvements, and support of demonstration and technology insertion. Funding continues RQ-4 unique development and integration of upgraded capabilities.

This program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities will be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI), the DoD's Unmanned Control Segment standards (UCS), or Open Mission Systems (OMS) as well as technology insertion activities in support of Better Buying Power (BBP).

The RQ-4 program will maintain capability and interoperability for Block 40 including efforts 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.

Activities also include studies and analysis, support to future system enhancements, communication and interoperability enhancements, current and future program planning, and project execution.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Title:</b> RQ-4 Block 40 Development and Demonstration</p> <p><b>Description:</b> RQ-4 Block 40 Payload and Aircraft/Communications Development and Demonstration as well as periodic Operational Flight Program updates and releases</p> <p><b>FY 2015 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Continued RQ-4 unique development and integration of MP-RTIP upgraded capabilities</li> <li>- Continued Aircraft/ Communication systems modernization to include IFF Mode 5/ADS-B, mission planning upgrade, and program protection</li> <li>- Continued aircraft operations surety, cybersecurity and information assurance, and reliability &amp; maintainability and associated testing &amp; evaluation</li> <li>- Established and utilized second operational location</li> </ul> <p><b>FY 2016 Plans:</b></p> <ul style="list-style-type: none"> <li>- Conduct IOT&amp;E</li> <li>- Begin development activities to support airspace integration activities including IFF Mode 5/ADS-B</li> <li>- Continue development of mission planning, sensor software, and integration of additional MP-RTIP radar modes</li> <li>- Continue enhancements to system interoperability, cybersecurity, comms, information assurance, and reliability &amp; maintainability improvements and associated testing &amp; evaluation.</li> </ul> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will initiate Operational Flight Program updates and releases</li> </ul>	12.637	4.944	0.089
<b>Accomplishments/Planned Programs Subtotals</b>	12.637	4.944	0.089

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA04: Line Item # HAEUAV: RQ-4	54.475	29.900	12.966	0.000	12.966	0.000	0.000	0.000	0.000	0.000	3,810.159
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	21.354	50.022	32.045	0.000	32.045	55.305	81.078	40.029	155.662	642.863	1,481.419
• APAF: BA07: Line Item # RQ4DIS: RQ-4 Post Production Support	0.000	0.000	0.099	0.000	0.099	58.547	68.177	46.654	0.000	0.000	173.477
• RDTE: BA07: PE 0305238F: NATO AGS	232.851	138.400	38.904	0.000	38.904	0.000	0.000	0.000	0.000	0.000	765.541

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force	<b>Date:</b> February 2016
---	----------------------------

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
--	--	--

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

**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: a legacy EMD "C" contract is being phased out with the completion of current efforts; IDIQ contracts cover development, upgrade, production, retrofit, fielding, and sustainment efforts through FY 2020.

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.

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
--	--	--

<b>Product Development (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Global Hawk Engineering Manufacturing & Development	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	121.403	12.637	Nov 2014	4.944	Nov 2015	0.089	Nov 2015	0.000		0.089	0.567	139.640	139.640
<b>Subtotal</b>			121.403	12.637		4.944		0.089		0.000		0.089	0.567	139.640	139.640

**Remarks**  
Target Value of the RQ-4 EMD, IDIQ, and EPIC contracts are not segregated by Budget Project Number.

<b>Support (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Non-Prime Technical Support	Various	Various : Dayton, OH	1.369	0.000		0.000		0.000		0.000		0.000	0.000	1.369	-
<b>Subtotal</b>			1.369	0.000		0.000		0.000		0.000		0.000	0.000	1.369	-

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

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	23.231	0.000		0.000		0.000		0.000		0.000	0.000	23.231	-
<b>Subtotal</b>			23.231	0.000		0.000		0.000		0.000		0.000	0.000	23.231	-

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

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
--	--	--

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	7.040	0.000		0.000		0.000		0.000		0.000	0.000	7.040	-
PMA: Other Gov't Cost	Various	Various : Dayton, OH	3.412	0.000		0.000		0.000		0.000		0.000	0.000	3.412	-
<b>Subtotal</b>			10.452	0.000		0.000		0.000		0.000		0.000	0.000	10.452	-

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

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	156.455	12.637	4.944	0.089	0.000	0.089	0.567	174.692	-

**Remarks**

**UNCLASSIFIED**

**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
--	--	--

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
Block 40 IOT&E																												
Block 40 IOC June 2016																												
Block 40 FOC June 2017																												
RTIP Enhancements Development																												
Enhanced Weather Capability Development																												
Mode 5/ADS-B Development																												
Mission Planning Development																												
Sensor Integration/Modes Development																												
Operational Flight Program Updates and Releases																												

**UNCLASSIFIED**

**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Air Force **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
--	--	--

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 40 IOT&E	4	2015	2	2016
Block 40 IOC June 2016	3	2016	3	2016
Block 40 FOC June 2017	3	2017	3	2017
RTIP Enhancements Development	1	2015	4	2016
Enhanced Weather Capability Development	2	2015	1	2017
Mode 5/ADS-B Development	4	2015	4	2017
Mission Planning Development	1	2015	3	2016
Sensor Integration/Modes Development	1	2017	4	2017
Operational Flight Program Updates and Releases	1	2017	4	2021

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675147: RQ-4 Grnd Segment/Comm System	53.915	0.000	31.460	0.175	0.000	0.175	0.000	0.000	0.000	0.000	0.000	85.550
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

The RQ-4 Ground Segment/Communications System Sub-Program 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 sub-program projects, budgets had already been finalized. The 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 2017 and beyond, Program 0305220F, RQ-4, Project 675147, Ground Segment/Comm System, modernization efforts will transfer to Program 0305220F, RQ-4, Project 675149, Capability Enhancements. The transfer of these efforts will allow greater visibility into Global Hawk modernization efforts.

**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 the weapon system's ground elements and communications capabilities to enhance functionality and maintain interoperability, as well as support for demonstration and technology insertion. 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 on the Global Information Grid.

The RDT&E funding in this project also supports the Ground Segment Modernization Program (GSMP) and Communication System Modernization Program(CSMP) 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. CSMP resolves critical DMS and obsolescence issues in the RQ-4 communication infrastructure and provides enhancements across the RQ-4 communication network. Both GSMP and CSMP will employ the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI), the DoD's Unmanned Control Segment standards (UCS), and Open Mission Systems (OMS) using a service-oriented, open architecture approach. Prior to GSMP/CSMP fielding, funding from this project supports modifications to the legacy system to support operations.

This program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities will be initiated to explore the utility of next-generation communications technologies, as well as emerging architectural standards such as UCI and UCS as well as technology insertion activities in support of Better Buying Power (BBP).

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System		
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.				
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> RQ-4 Ground Segment / Communications System- Critical Obsolescence Issues & Modernization		0.000	2.373	0.175
<b>Description:</b> RQ-4 Ground Segment/ Communications System Development				
<b>FY 2015 Accomplishments:</b>				
<ul style="list-style-type: none"> <li>- With prior year funding:</li> <li>- Continued to resolved critical DMS and obsolescence issues with ground and comms segment equipment and software</li> <li>- Maintained and upgraded interoperability and cybersecurity with system of systems partners</li> <li>- Explored and incorporated applicable synergies with other platforms, such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation &amp; Dissemination (PED) elements</li> <li>- Incorporated Air Vehicle (AV) modifications/upgrades into the ground segment architecture</li> </ul>				
<b>FY 2016 Plans:</b>				
<ul style="list-style-type: none"> <li>- Continue to resolve critical DMS and obsolescence issues with ground and comms segment equipment and software</li> <li>- Begin interoperability upgrades and cybersecurity with system of systems partners</li> <li>- Incorporate applicable synergies with other platforms, such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation &amp; Dissemination (PED) elements</li> <li>- Incorporate Air Vehicle (AV) modifications/upgrades into the ground segment architecture</li> </ul>				
<b>FY 2017 Plans:</b>				
<ul style="list-style-type: none"> <li>- Will continue to resolve critical DMS and obsolescence issues with ground and comms segment equipment and software</li> <li>- Will maintain and upgrade interoperability and cybersecurity with system of systems partners</li> <li>- Will continue to incorporate applicable synergies with other platforms, such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation &amp; Dissemination (PED) elements</li> <li>- Will continue Air Vehicle (AV) modifications/upgrades into the ground segment architecture</li> </ul>				
<b>Title:</b> Ground Segment Modernization Program (GSMP)		0.000	28.412	0.000
<b>Description:</b> 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.				
<b>FY 2015 Accomplishments:</b>				

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
- N/A			
<b>FY 2016 Plans:</b> - Complete Acquisition Strategy Panel (ASP) and award development contract - Design and develop GSMP, leveraging earlier efforts which developed a modern aircraft command and control capability and an open-system architecture			
<b>FY 2017 Plans:</b> - N/A, effort is funded in Project 675149, RQ-4 Capability Enhancements			
<b>Title:</b> Government Test and Non-Prime support <b>Description:</b> Government test, non-prime technical support and Other Government Costs (OGC) -- The majority of this funding supports Global Hawk 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 and cybersecurity partners and OGC.	0.000	0.675	0.000
<b>FY 2015 Accomplishments:</b> N/A			
<b>FY 2016 Plans:</b> - Continue government test and non-prime engineering and technical support and Other Government Costs for Ground Segment / Comm systems			
<b>FY 2017 Plans:</b> N/A, effort is funded in Project 675145, RQ-4 Block 30			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	31.460	0.175

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA04: Line Item # HAEUAV: RQ-4	54.475	29.900	12.966	0.000	12.966	0.000	0.000	0.000	0.000	0.000	3,810.159
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	21.354	50.022	32.045	0.000	32.045	55.305	81.078	40.029	155.662	642.863	1,481.419
• APAF: BA07: Line Item # RQ4DIS: RQ-4 Post Production Support	0.000	0.000	0.099	0.000	0.099	58.547	68.177	46.654	0.000	0.000	173.477

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<b>Remarks</b>											

**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: a legacy EMD "C" contract is being phased out with the completion of current efforts; and IDIQ contracts cover development, upgrade, production, retrofit, fielding, and sustainment efforts through FY 2020.

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 IC (ACAT) RQ-4 program are planned to be added over time as separate ACAT II and ACAT III modification programs.

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

**UNCLASSIFIED**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2017 Air Force</b>											<b>Date: February 2016</b>				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System							

<b>Product Development (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Global Hawk Engineering, Manufacturing & Development/IDIQ Ground Segment and Communication Systems	SS/CPIF	Northrop Grumman Integrated Systems : San Diego, CA	48.076	0.000		2.373	Nov 2015	0.000		0.000		0.000	0.000	50.449	50.449
Ground Segment Modernization Program (GSMP)	SS/CPIF	Northrop Grumman Integrated Sytems : San Diego, CA	0.000	0.000		28.412	Mar 2016	0.175	Apr 2017	0.000		0.175	0.000	28.587	28.587
<b>Subtotal</b>			48.076	0.000		30.785		0.175		0.000		0.175	0.000	79.036	79.036

**Remarks**  
 Target Value of the RQ-4 EMD, IDIQ, and EPIC Contracts is not segregated by Budget Project Number. FY16 and beyond budget necessary for RQ-4 fleet support with Northrop Grumman is contained in Budget Project Number 675145, RQ-4 Block 30, Budget Project Number 675146, RQ-4 Block 40, and Budget Project Number 675149, RQ-4 Capability Enhancements.

<b>Support (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Non-Prime Technical Support	Various	Various : Dayton, OH	2.738	0.000		0.675	Dec 2015	0.000		0.000		0.000	0.000	3.413	-
<b>Subtotal</b>			2.738	0.000		0.675		0.000		0.000		0.000	0.000	3.413	-

**Remarks**  
 Target Value of the RQ-4 Non-Prime Technical Support is not segregated by Budget Project Number.

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	2.500	0.000		0.000		0.000		0.000		0.000	0.000	2.500	-
<b>Subtotal</b>			2.500	0.000		0.000		0.000		0.000		0.000	0.000	2.500	-

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System
--	--	--

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			

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

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.401	0.000		0.000		0.000		0.000		0.000	0.000	0.401	-
PMA: Other Gov't Cost	Various	Various : Dayton, OH	0.200	0.000		0.000		0.000		0.000		0.000	0.000	0.200	-
<b>Subtotal</b>			0.601	0.000		0.000		0.000		0.000		0.000	0.000	0.601	-

**Remarks**  
Target Value of the RQ-4 contracts is not segregated by Budget Project Number. FY16 and beyond budget necessary for RQ-4 fleet management services support and other government cost is contained in Budget Project Number 675145, RQ-4 Block 30, Budget Project 675146, RQ-4 Block 40, and Budget Project Number 675149, RQ-4 Capability Enhancements.

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	53.915	0.000	31.460	0.175	0.000	0.175	0.000	85.550	-

**Remarks**

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2017 Air Force</b>		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
Ground Segment Maintenance/Upgrades Development	████████████████																											
Ground Segment Modernization Program (GSMP) Development					████████████████																							
Comm Systems Maintenance/Upgrades Development					████████████████																							
Communication Interoperability/Enhancements Development									████																			

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Segment Maintenance/Upgrades Development	1	2015	1	2017
Ground Segment Modernization Program (GSMP) Development	1	2016	1	2017
Comm Systems Maintenance/Upgrades Development	1	2016	1	2017
Communication Interoperability/Enhancements Development	1	2017	1	2017

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense and Avoid (C-ABSAA)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675148: <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>	0.000	11.829	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.829
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Common-Airborne Sense and Avoid (C-ABSAA) is an analysis and developmental effort in the pre-Material Development Decision phase of the acquisition lifecycle which supports emerging warfighter requirements to fully integrate Group 4-5 RPA into the National Airspace System (NAS), international airspace, other nations' sovereign airspace, and operational combat airspace to conduct the entire range of military operations across all mission environments. C-ABSAA also supports the "Worldwide Operations" Key Performance Parameter (KPP) in larger Remotely Piloted Aircraft (RPA) requirement documents, and Public Law 112-239 directing DoD collaboration with the Federal Aviation Administration (FAA) and the National Air and Space Administration (NASA) to safely integrate RPA in the NAS. Funding in this project supports the development of a Sense and Avoid (SAA) capability set for Group 4-5 RPA and covers analysis, research, and developmental activities as well as infrastructure and other government costs. Ongoing activities include support to the development of warfighter requirements and analysis of possible solution alternatives, the collaboration with the FAA, NASA, and the other Services to develop national policy and standards, and SAA related studies, analysis, modeling and simulation, program planning and project execution. RPA platform specific integration and testing is not included.

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

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> SAA-Related Requirements Development and Analysis, National Policy Standards Development, and Technology Development and Demonstration	11.829	0.000	0.000
<p><b>Description:</b> Support development and analysis of warfighter requirements and analysis of possible solution alternatives. Develop Sense and Avoid (SAA) technology and capabilities for Group 4-5 RPA. Collaborate with the FAA, NASA, and the other Services to develop national policy and standards. Conduct SAA related studies, analysis, modeling and simulation, demonstrations, program planning and project execution.</p> <p><b>FY 2015 Accomplishments:</b> Supported Air Combat Command with Initial Capabilities Document development and approval, and conducted Developmental Planning/Pre-Analysis of Alternatives activity. Continued to collaborate with FAA, NASA, and the other Services on national policy and standards, and built and exercised modeling and simulation capabilities to support requirements, policy/standards, and technology development. Continued SAA science and technology research and development with the AFRL.</p> <p><b>FY 2016 Plans:</b> In FY 2016, PE 0305220F, RQ-4, Project 675148, C-ABSAA, will transfer to PE 0305206F, Airborne Reconnaissance Systems, Project 675148, C-ABSAA.</p> <p><b>FY 2017 Plans:</b></p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
In FY 2017, efforts will transfer from PE 0305206F, Airborne Reconnaissance Systems, Project 675148, C-ABSAA, to PE 0604257F, Advanced Technology and Sensors, Project 645148, C-ABSAA.				
<b>Accomplishments/Planned Programs Subtotals</b>		11.829	0.000	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
C-ABSAA will integrate Better Buying Power 3.0 initiatives throughout its acquisition lifecycle and rely upon acquisition of government data rights to maximize contractor competition from Technology Development through Production. The program uses an incremental acquisition strategy to provide the warfighter with SAA capability for Group 4-5 RPA with increased, time-phased capability improvements as technology and risks achieve satisfactory levels. Group 4-5 RPA platforms will be expected to integrate the C-ABSAA provided capability into their unique systems via retrofit or in production.				
<b>E. Performance Metrics</b>				
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.				

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force												Date: February 2016				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0305220F / RQ-4 UAV				675148 / Common-Airborne Sense and Avoid (C-ABSAA)								
<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
C-ABSAA Technology Development	C/Various	Various : Various	0.000	11.088	Oct 2014	0.000		0.000		0.000		0.000	0.000	11.088	TBD	
<b>Subtotal</b>			0.000	11.088		0.000		0.000		0.000		0.000	0.000	11.088	-	
<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Management Administration (PMA)	Various	Various : Dayton, OH	0.000	0.741	Oct 2014	0.000		0.000		0.000		0.000	0.000	0.741	TBD	
<b>Subtotal</b>			0.000	0.741		0.000		0.000		0.000		0.000	0.000	0.741	-	
<b>Remarks</b>																
The Target supports multiple technology development contracts.																
<b>Project Cost Totals</b>			0.000	11.829		0.000		0.000		0.000		0.000	0.000	11.829	-	

**UNCLASSIFIED**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2017 Air Force							<b>Date:</b> February 2016			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV			<b>Project (Number/Name)</b> 675148 / <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>				
	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**  
 In FY 2016, PE 0305220F, RQ-4, Project 675148, Common-Airborne Sense & Avoid (C-ABSAA), transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148, Common-Airborne Sense and Avoid (C-ABSAA). This transfer will provide greater visibility into this capability and prepares for expanded applications by making the capability program platform agnostic.

The Target Value supports multiple technology development contracts.

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2017 Air Force</b>		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense and Avoid (C-ABSAA)

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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

Initial Capabilities Document (ICD)	[REDACTED]																											
Decvelopment Planning/Pre-Analysis of Alternatives	[REDACTED]																											

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Capabilities Document (ICD)	1	2015	3	2015
Decvelopment Planning/Pre-Analysis of Alternatives	3	2015	1	2016

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675149: RQ-4 Capability Enhancements	0.000	0.000	0.000	121.838	0.000	121.838	264.338	221.011	260.449	196.975	598.457	1,663.068
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
<b>Project MDAP/MAIS Code:</b> 293												

**Note**

This program, BA 07 PE 0305220F, project 675149, RQ-4 Capability Enhancements, is a new start.  
 This program, BA 07 PE 0305220F, project 675149, Ground Segment Modernization Program (GSMP), is a new start.  
 This program, BA 07 PE 0305220F, project 675149, Capability Enhancements Government Test and Non-Prime Support, is a new start.

In FY 2017 and beyond, Program 0305220F, RQ-4, Project 675145, Block 30, Project 675146, RQ-4 Block 40, and Project 675147, Ground Segment/Comm System, modernization efforts were transferred to Program 0305220F, RQ-4, Project 675149, Capability Enhancements. The transfer of these efforts will allow greater visibility into Global Hawk modernization efforts.

**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 supports aircraft systems upgrade to include continuing aircraft operations surety, cybersecurity, information assurance, and mission critical repair of Government Furnished Equipment (GFE).

Activities include airspace and interoperability and communication enhancements and updates, periodic Operational Flight Program updates and releases, airframe and software upgrades, deficiency report resolution across RQ-4 fleet, sensor enhancements and alternate sensor upgrades, enhanced comms capabilities, program protection projects, support for demonstration and technology insertion, development and testing of ice protection system, program protection projects, 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 40 aircraft, including further development, integration and test of the Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor capabilities, continued aircraft/communications systems upgrade, additional radar maritime modes, reliability and maintainability improvements, Ground Segment Modernization Program (GSMP) and Communication System Modernization Program (CSMP) 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. CSMP resolves critical DMS and obsolescence issues in the RQ-4 communication infrastructure and provides enhancements across the RQ-4 communication network.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force	<b>Date:</b> February 2016
---	----------------------------

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements
--	--	---

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/CSMP 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 on the Global Information Grid.

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.

This program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities will be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI), the DoD's Unmanned Control Segment standards (UCS), or Open Mission Systems (OMS) as well as technology insertion activities in support of Better Buying Power (BBP).

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

	FY 2015	FY 2016	FY 2017
<p><b>Title:</b> RQ-4 Capability Enhancements</p> <p><b>Description:</b> RQ-4 Development and Demonstration (includes enterprise management, test and evaluation, software integration, and fielding support for projects 675145 (Block30), 675146 (Block 40) and 675147 (Ground Segment/Comm System) as well as program protection projects, periodic Operational Flight Program updates and releases, studies and analysis supporting future system enhancements)</p> <p><b>FY 2015 Accomplishments:</b> N/A</p> <p><b>FY 2016 Plans:</b> N/A</p> <p><b>FY 2017 Plans:</b></p> <ul style="list-style-type: none"> <li>- Support required sensor upgrades and current and alternate sensor enhancements and upgrades</li> <li>- Conduct airspace integration activities, integration of advanced sensors, utilization of additional radar modes, and comms system enhancements</li> <li>- Conduct development of ice protection system, continued system interoperability and upgrades, cybersecurity and information assurance and reliability &amp; maintainability, and associated testing</li> <li>- Initiate Operational Flight Program updates and releases</li> <li>- Conduct pre-contract activities supporting the Communication System Modernization Program (CSMP)</li> </ul>	0.000	0.000	61.011
<p><b>Title:</b> Ground Segment Modernization Program (GSMP)</p>	0.000	0.000	57.197

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Description:</b> 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><b>FY 2015 Accomplishments:</b> N/A</p> <p><b>FY 2016 Plans:</b> N/A</p> <p><b>FY 2017 Plans:</b> - Conduct development and system level testing of the GSMP</p>			
<p><b>Title:</b> Capability Enhancements Government Test and Non-Prime Support</p> <p><b>Description:</b> Government test, non-prime technical support and Other Government Costs (OGC) -- The majority of this funding 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 OGC.</p> <p><b>FY 2015 Accomplishments:</b> N/A</p> <p><b>FY 2016 Plans:</b> N/A</p> <p><b>FY 2017 Plans:</b> - Will continue government test and non-prime engineering and technical support and Other Government Costs</p>	0.000	0.000	3.630
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	121.838

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA04: Line Item # HAEUAV: RQ-4	54.475	29.900	12.966	0.000	12.966	0.000	0.000	0.000	0.000	0.000	3,810.159
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	21.354	50.022	32.045	0.000	32.045	55.305	81.078	40.029	155.662	642.863	1,481.419

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force	<b>Date:</b> February 2016
---	----------------------------

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements
--	--	---

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA07: Line Item # RQ4DIS: <i>RQ-4 Post Production Support</i>	0.000	0.000	0.099	0.000	0.099	58.547	68.177	46.654	0.000	0.000	173.477

**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, IDIQ contracts cover development, upgrade, production, retrofit, fielding, and sustainment efforts through FY 2020.

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.

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements
--	--	---

<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 & Development/Capability Enhancements	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	0.000	0.000		0.000		61.011	Jul 2017	0.000		61.011	1,201.231	1,262.242	1,262.242
Ground Segment Modernization Program (GSMP)	SS/CPIF	Northrop Grumman Integrated Systems : San Diego, CA	0.000	0.000		0.000		57.197	Apr 2017	0.000		57.197	104.610	161.807	161.807
<b>Subtotal</b>			0.000	0.000		0.000		118.208		0.000		118.208	1,305.841	1,424.049	1,424.049

**Remarks**  
Target Value of the RQ-4 EMD, IDIQ, and EPIC Contracts is not segregated by Budget Project Number.

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	0.000		0.000		0.267	Feb 2017	0.000		0.267	10.942	11.209	-
<b>Subtotal</b>			0.000	0.000		0.000		0.267		0.000		0.267	10.942	11.209	-

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

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	0.000		0.000		0.000		0.000		0.000	157.296	157.296	-
<b>Subtotal</b>			0.000	0.000		0.000		0.000		0.000		0.000	157.296	157.296	-

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

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements
--	--	---

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	0.000	0.000		0.000		2.018	Nov 2016	0.000		2.018	41.331	43.349	-
PMA: Other Government Costs	Various	Varous : Dayton, OH	0.000	0.000		0.000		1.345	Oct 2016	0.000		1.345	25.820	27.165	-
<b>Subtotal</b>			0.000	0.000		0.000		3.363		0.000		3.363	67.151	70.514	-

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

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	0.000	0.000	121.838	0.000	121.838	1,541.230	1,663.068	-

**Remarks**

**UNCLASSIFIED**

**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements
--	--	---

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
Sensor Enhancements & Upgrades (MS-177) Development																												
Ice Protection System Development																												
Ground Segment Maintenance/Upgrades Development																												
Ground Segment Modernization Program Development																												
Comms Systems Maintenance/Upgrades Development																												
Communication System Modernization Program Development																												
Program Protection Development																												
Next Gen Comms Development																												
Operational Flight Program Updates & Releases Development																												
Test Support																												

**UNCLASSIFIED**

**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Air Force **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675149 / RQ-4 Capability Enhancements
--	--	---

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Sensor Enhancements & Upgrades (MS-177) Development	1	2017	2	2019
Ice Protection System Development	3	2017	3	2019
Ground Segment Maintenance/Upgrades Development	1	2017	4	2018
Ground Segment Modernization Program Development	1	2017	2	2020
Comms Systems Maintenance/Upgrades Development	1	2017	3	2019
Communication System Modernization Program Development	2	2018	4	2021
Program Protection Development	3	2018	4	2021
Next Gen Comms Development	1	2020	4	2021
Operational Flight Program Updates & Releases Development	3	2017	4	2021
Test Support	1	2017	4	2021

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Air Force **Date:** February 2016

<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 67RTIP / MP-RTIP			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67RTIP: MP-RTIP	212.455	10.926	16.092	7.468	0.000	7.468	11.901	11.899	12.112	12.330	0.000	295.183
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 all MP-RTIP integration efforts for the RQ-4 Block 40 Platform. Integration activities include platform integration of the MP-RTIP sensor and sustainment logistics planning support. MP-RTIP studies and development insertion include the implementation of Maritime Modes (MM), Maritime Inverse SAR (MISAR), product improvements and other advanced capabilities.

Activities also include studies and analysis supporting current and future program planning and future modes development based on user requirements. 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. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> Development and Integration	10.070	16.092	7.468
<b>Description:</b> MP-RTIP development and integration			
<b>FY 2015 Accomplishments:</b>			
- Completed development of the MP-RTIP RSD 1.4 increment (1.4.6) software build for integration into the RQ-4 Block 40 aircraft for IOT&E.			
- Initiated development of the MP-RTIP RSD 1.5 software build which includes US Maritime Modes. Aligned development support for continuation of RSD 1.5 to support transition to sustainment.			
<b>FY 2016 Plans:</b>			

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2017 Air Force **Date:** February 2016

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

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2015	FY 2016	FY 2017
- Continuing development of the MP-RTIP RSD 1.5 software build.			
<b>FY 2017 Plans:</b> - Will complete the development of the MP-RTIP RSD 1.5 software build enabling sustainment to take the build to the GHSC phase. Will transition future radar development efforts to the GH Block 40 program office by December 2016.			
<b>Title:</b> Test & Evaluation <b>Description:</b> MP-RTIP Test & Evaluation	0.856	0.000	0.000
<b>FY 2015 Accomplishments:</b> - Completed MP-RTIP Test & Evaluation support for RSD 1.4.6 flight tests. Completed ad hoc testing for an emergency field update to the warfighter related to the year change from 2014 to 2015.			
<b>FY 2016 Plans:</b> - Rigorous testing of RSD 1.5 intermediate software builds in the Radar System Integration Lab. - Flight testing will be accomplished by the Global Hawk Program Office with support from the MP-RTIP Program Office.			
<b>FY 2017 Plans:</b> - N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	10.926	16.092	7.468

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

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA04: Line Item # HAEUAV: RQ-4	54.475	29.900	12.966	0.000	12.966	0.000	0.000	0.000	0.000	0.000	3,810.159
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	21.354	50.022	32.045	0.000	32.045	55.305	81.078	40.029	155.662	642.863	1,481.419
• RDT&E: BA07: PE 0305238F: NATO AGS	232.851	138.400	38.904	0.000	38.904	0.000	0.000	0.000	0.000	0.000	765.541

**Remarks**

**D. Acquisition Strategy**  
MP-RTIP Project funds for FY17 and out years are slated to fund new development of warfighter requested AN/ZPY-2 modes and further refine or enhance current capability, as well as addressing critical deficiencies as they are identified in the field.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP

**E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force** **Date:** February 2016

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

<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
MP-RTIP	SS/CPFF	Northrop Grumman Integrated Systems : El Segundo, CA	169.891	8.159	Feb 2016	13.188	Nov 2015	5.478	Nov 2016	0.000		5.478	37.592	234.308	TBD
<b>Subtotal</b>			169.891	8.159		13.188		5.478		0.000		5.478	37.592	234.308	-

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
IRT Study	Various	Various : Various	0.105	0.000		0.000		0.000		0.000		0.000	0.000	0.105	0.105
Logistics Planning	SS/CPFF	Northrop Grumman Integrated Systems : El Segundo, CA	3.667	0.000		0.000		0.000		0.000		0.000	0.000	3.667	3.667
<b>Subtotal</b>			3.772	0.000		0.000		0.000		0.000		0.000	0.000	3.772	3.772

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	Various : Various	8.936	0.856	Jan 2015	0.000		0.000		0.000		0.000	0.000	9.792	TBD
<b>Subtotal</b>			8.936	0.856		0.000		0.000		0.000		0.000	0.000	9.792	-

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	26.180	1.804	Nov 2014	2.821	Nov 2015	1.723	Nov 2016	0.000		1.723	8.520	41.048	TBD
PMA: Other Gov't Cost	Various	Various : Boston, MA	3.676	0.107	Nov 2014	0.083	Nov 2015	0.267	Nov 2016	0.000		0.267	2.130	6.263	TBD
<b>Subtotal</b>			29.856	1.911		2.904		1.990		0.000		1.990	10.650	47.311	-

**UNCLASSIFIED**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2017 Air Force	<b>Date:</b> February 2016
--	----------------------------

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

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	212.455	10.926	16.092	7.468	0.000	7.468	48.242	295.183	-

**Remarks**

**UNCLASSIFIED**

**Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force** **Date:** February 2016

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

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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

RSD 1.5 Software Build Development																												
IOT&E Readiness & IOT&E																												
Future Radar Development Builds																												

**UNCLASSIFIED**

**Exhibit R-4A, RDT&E Schedule Details:** PB 2017 Air Force **Date:** February 2016

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

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RSD 1.5 Software Build Development	2	2015	1	2017
IOT&E Readiness & IOT&E	4	2015	1	2016
Future Radar Development Builds	1	2017	4	2021