Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force											Date: February 2016	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*							
COST ($ in Millions)	**Prior Years**	**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	817.828	141.528	122.731	151.373	0.000	151.373	163.951	158.839	163.482	166.382	Continuing	Continuing
675246: *MQ-9 Development and Fielding*	817.828	141.528	122.731	120.481	0.000	120.481	112.635	44.098	8.080	74.235	0.000	1,441.616
675247: *Squadron Operations Centers (SOC)**	0.000	0.000	0.000	0.000	0.000	0.000	7.243	5.792	0.000	0.000	0.000	13.035
675249: *MQ-9 Upgrade*	0.000	0.000	0.000	30.892	0.000	30.892	44.073	108.949	155.402	92.147	Continuing	Continuing
Program MDAP/MAIS Code: 424												

*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2017

Note

This program, BA 07 PE 0205219F, project 675249, MQ-9 Upgrade, is a new start.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended. Mission-specific equipment is employed on specific aircraft and control station configurations to be tailored to fit mission needs.

In FY17, the MQ-9 Reaper system has two separate development programs:

1. MQ-9 Development and Fielding. This effort is for development and fielding of the baseline MQ-9 aircraft and GCSs and associated communications systems, sensors, payloads, simulators and support equipment.

2. MQ-9 Upgrade. This effort is to develop improvements for existing systems and to field new capabilities for the baseline MQ-9 fleet using a Hybrid Acquisition Strategy.

In FY18, an additional development program will commence:

Squadron Operations Centers (SOC). This effort is for development and fielding of standardized operations centers to provide mission data and tasking information to the aircrew and disseminate and/or exchange mission data with decision-makers and the intelligence community.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

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

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	148.598	123.439	141.969	0.000	141.969
Current President's Budget	141.528	122.731	151.373	0.000	151.373
Total Adjustments	-7.070	-0.708	9.404	0.000	9.404
• Congressional General Reductions	0.000	-0.708			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-2.165	0.000			
• SBIR/STTR Transfer	-4.905	0.000			
• Other Adjustments	0.000	0.000	9.404	0.000	9.404

Change Summary Explanation

Funding increase in FY17 to initiate MQ-9 Upgrade program.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675246 / *MQ-9 Development and Fielding*	

COST ($ in Millions)	Prior Years	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
675246: *MQ-9 Development and Fielding*	817.828	141.528	122.731	120.481	0.000	120.481	112.635	44.098	8.080	74.235	0.000	1,441.616
Quantity of RDT&E Articles	3	-	-	-	-	-	-	-	-	-		

Note

Quantity of RDT&E Articles refers only to test aircraft.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended. Mission-specific equipment is employed on specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-9 Reaper aircraft is a single-engine, turbo-prop Remotely Piloted Aircraft (RPA) designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed to primarily prosecute critical, emerging Time-Sensitive-Targets (TSTs) as a Synthetic Aperture Radar, Electro-optical/ Infrared (EO/IR), and laser designator-based attack asset with on-board hard-kill weapon capability (hunter-killer). It also performs Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA).

The MQ-9 system is continuing to develop and field capabilities to meet evolving mission needs through incremental upgrades, including: increasing the maximum gross takeoff weight; increasing operational range and endurance; propulsion system improvements; integrated redundant avionics; incorporating provisions for a Foreign Military Sales(FMS) exportable version of the weapon system; communications upgrades to include datalink encryption, Internet Protocol (IP) networking, secure voice and data communications, navigation system upgrades; electrical system upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; advanced sensor and weapon payloads; improved human-machine interface (HMI); integrating additional precision weapons, hardware and software upgrades to the ground control station. The program will also complete airworthiness and weapon system certification and accreditation; produce applicable training for payloads funded in other program elements (e.g. SIGINT, communications, Wide Area Motion Imagery (WAMI), Near Vertical Direction Finding (NVDF), Gorgon Stare Quick Reaction Capability, advanced Counter-Improvised Explosive Device (C-IED), missile defense, hyperspectral, and other sensors and weapons). Development efforts will address reliability, maintainability, sustainability, and safety issues. Activities also include trade studies, analyses, preliminary systems engineering, system and subsystem level testing in accordance with DoD and military standards, and specification development in support of both current program planning and execution, and studies supporting analysis and investment in future MQ-9 program planning.

The GCS functions as the aircraft cockpit and can control the aircraft either within Line-of-Sight (LOS) or Beyond Line-of-Sight (BLOS) via a combination of satellite relay and terrestrial communication architectures. The GCS is either mobile to support forward operating locations or fixed at a facility to support reach back Remote Split Operations (RSO). The GCS has the capability to: perform mission planning; provide a means for manual control; and enable personnel to launch, recover, and monitor aircraft, payloads, and system communications status. It incorporates secure data links to send aircraft and payload commands and receive system telemetry

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

and payload data; monitors threats to the aircraft; displays the common operational picture; and provides support functions. Launch and Recovery GCS (LRGCS) is used for servicing, systems checks, maintenance, launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS, and conducting operations within line-of-sight range of the LRGCS. GCS upgrades will be developed and fielded in coordination with improvements to other MQ-9 system capabilities and in response to evolving operational and information assurance/certification and accreditation requirements.

This project will also increase interoperability among developed systems by developing common standards and tools.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: MQ-9 System Development and Demonstration (SDD)	25.909	11.737	18.387	0.000	18.387
Description: Complete development to meet MQ-9 Capabilities Production Document (CPD) requirements. Includes engineering change orders and associated studies and general research. ***FY 2015 Accomplishments:*** Continued MQ-9 Block 5 Remotely Piloted Aircraft (RPA) system capability development to include: • Developmental test for High Capacity Starter-Generator • Predator Primary Data Link (PPDL) that will lead to CDL compliance • Two ARC-210 Radios • Redesigned Forward Avionics Bay • Dashboard w/ Integrated Sensor Control System (ISCS) • Mission Control Module/Payload Control Computer • Improved BRU-71/A Bomb Rack • Improved Stores Management System • High-Definition Multi-spectral Targeting System (MTS-B) • Improved Heavyweight Landing Gear • Integration and productionization • 904.6 software development • Initiated the development and productionization of a complete Block 1 to Block 5 retrofit kit to support future fleet upgrade and modernization. ***FY 2016 Plans:*** Continue MQ-9 Block 5 Remotely Piloted Aircraft (RPA) system capability development to include: • Developmental test for High Capacity Starter Generator • Predator Primary Data Link (PPDL) that will lead to CDL compliance • Two ARC-210 Radios, Redesigned Forward Avionics Bay • Dashboard w/ Integrated Sensor Control System (ISCS) • Mission Control Module/Payload Control Computer					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Improve BRU- 71/A Bomb Rack • Improve Stores Management System • High Definition Multi-spectral Targeting System (MTS-B) • Improved Heavyweight Landing Gear • 904.6 software development to include integration of numerous approved Software Change Requests (SCRs) • Conduct Electromagnetic Environmental Effects (E3) and Hazards of Electromagnetic Radiation to Ordnance (HERO) testing on the developed MQ-9 Block 5 aircraft system Begin Follow-on Operational Test and Evaluation (FOT&E) as required to field the Block 5 aircraft and the 904.6 software to include: • Development of verified Technical Orders (Flight Manual and Maintenance Manual) • Training completion following successful Developmental Test (DT) completion • Software regression testing with the fielded Block 1 aircraft system ***FY 2017 Base Plans:*** • Will complete Predator Primary Data Link (PPDL) characterization efforts on the MQ-9 Block 5 Remotely Piloted Aircraft (RPA) system • Will complete non-FOT&E dependent testing to fully characterize the MQ-9 development to include items such as Wet Runway testing • Will complete Electromagnetic Environmental Effects (E3) and Hazards of Electromagnetic Radiation to Ordnance (HERO) testing on the developed MQ-9 Block 5 aircraft system ***FY 2017 OCO Plans:*** N/A					
Title: Block 30 Ground Control Station (GCS) Development ***Description:*** Develop Block 30 Ground Control Station (GCS) capabilities. ***FY 2015 Accomplishments:*** Continued Development of Block 30 Ground Control Station (GCS) capabilities: • 904.6 OFP Software development • Audio Multi-Level Security (MLS) • Field Service Representative (FSR) support during FOT&E ***FY 2016 Plans:*** Complete Block 30 GCS development.	9.718	4.027	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Continue Field Service Representative (FSR) support during FOT&E. ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Title: Block 50 Ground Control Station (GCS) Development ***Description:*** Develop Ground Control Station (GCS) capabilities. Major capabilities include payload separation, open system architecture, multi-level security, ergonomic cockpit design, and reducing or eliminating known deficiencies in legacy GCS. ***FY 2015 Accomplishments:*** Continued Block 50 GCS design/development, including: • Hardware and software integration • Systems Requirement Review • Integrated Baseline Review • Reduce or eliminate known deficiencies in legacy GCS • Payload separation to incorporate required Block 50 GCS architecture ***FY 2016 Plans:*** Continue Block 50 design/development of hardware and software: • Preliminary Design Review to allow initial test asset procurement • Sub-system Critical Design Reviews will begin • Initial hardware purchase of 3 Block 50 GCS Development Test assets (3 of 7 total Development Test assets) ***FY 2017 Base Plans:*** Will continue Block 50 design/development, manufacturing and test • Hardware/Software Development • Integration and test • Cockpit Evaluation Team 3 • Critical Design Review • Procure additional 2 Block 50 GCS Development Test assets • Begin Contractor test build ***FY 2017 OCO Plans:***	31.539	52.151	57.191	0.000	57.191

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: MQ-9 MTS-B Electro-Optic / Infrared (EO/IR) Sensor	11.723	0.390	0.381	0.000	0.381
Description: Develop improved Multi-Spectral Targeting System (MTS-B) modes of operation and upgrade full motion video capability to include an all digital architecture employing High-Definition (HD) camera formats, imagery improvements across all multi-spectral bands (color and infrared) and Target Location Accuracy (TLA) enhancements to support future use of coordinate seeking weapons, and integration of High Definition Electro-optical Infra-red sensor upgrades. ***FY 2015 Accomplishments:*** • Conducted production readiness review to assure system is ready for production • Completed HD TLA MTS-B system qualification, design verification, and extended reliability testing • Supported backwards compatibility integration and test of completed HD TLA MTS-B system and MTS software on MQ-9 platform ***FY 2016 Plans:*** • Manage obsolescence of HD TLA MTS-B system parts • Support final integration and test of all functions of HD TLA MTS-B system on MQ-9 Block 5 • Support backwards compatibility integration and test of completed HD TLA MTS-B system and MTS software on MQ-9 platform ***FY 2017 Base Plans:*** • Will manage obsolescence of HD TLA MTS-B system parts • Will support final integration and test of all functions of HD TLA MTS-B system on MQ-9 Block 5 • Will support backwards compatibility integration and test of completed HD TLA MTS-B system and MTS software on MQ-9 platform ***FY 2017 OCO Plans:*** N/A					
Title: Operator Simulator Block 30	7.091	10.415	5.379	0.000	5.379
Description: Develop Block 30 Ground Control Station (GCS) operator simulators for training and updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station (GCS) to include Joint Urgent Operational Need (JUON) supported emerging Air Force Special Operations Command (AFSOC) configurations.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
FY 2015 Accomplishments: Continued to implement updates which will keep the Operator Simulator current with the aircraft and Ground Control Station, including, but not limited to: • Sensors • Databases • Weapons upgrades ***FY 2016 Plans:*** Continue to implement updates which will keep the Operator Simulator current with the aircraft and Ground Control Station, including, but not limited to: • Sensors • Databases • Weapons upgrades ***FY 2017 Base Plans:*** Will continue to implement updates which will keep the Operator Simulator current with the aircraft and Ground Control Station, including, but not limited to: • Sensors • Databases • Weapons upgrades ***FY 2017 OCO Plans:*** N/A					
Title: Synthetic Aperture Radar (SAR) Enhancements ***Description:*** Improvements in MQ-9 capability to disseminate SAR data via a fleet-wide common architecture, improve Moving Target Indicator (MTI) tracking, automation of data exploitation via Continuous Look Attack Management for Predator (CLAMP) and improvement of all-weather GPS weapon targeting. ***FY 2015 Accomplishments:*** • Continued development and began integration/test of MQ-9 data dissemination common architecture using dual firewall capability • Continued development of SAR Stationary Targeting Improvements for GPS-based weapons (STIG) ***FY 2016 Plans:***	8.499	0.467	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Complete development for initial GCS Block 15 fielding of MQ-9 data dissemination common architecture using dual firewall capability • Adjust STIG development to decouple from GCS development schedule ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Title: Hybrid Release 1 and Release 2 ***Description:*** Hybrid Release 1 and Hybrid Release 2 continue execution of a subset of work previously performed under the System Development and Demonstration (SDD) effort, while rapidly integrating upgrades or improvements (including limited urgent needs) fleet-wide. Development will combine the rigor of an event driven development process (referred to as a Technology Maturation Effort (TME)) with the expeditious delivery of a schedule driven integration and fielding process (referred to as a Hybrid Release). ***FY 2015 Accomplishments:*** Began implementation of the Hybrid Release 1 effort, including: • Video Oriented Transceiver for EXchange of Information (VORTEX) Phase 1 data link to provide encrypted video to tactical users • Upgrades AGM-114R Hellfire missile with Common Weapon Library • Integration of High Definition Electro-optical/Infra-red sensor upgrades • Integration and testing of other communications, sensors and weapons capabilities Tech Maturation FY15 effort included initial meetings and Software Readiness Review (SRR) associated with: • Guided Bomb Unit (GBU)-54 • Extended Range for Block 5 aircraft • Barrett Asymmetric Digital Datalink Computer (BADDC) ***FY 2016 Plans:*** Begin developing and integrating the software and data to update the MQ-9 Block 5 UAS to include Hybrid Release 1 capabilities, including: • Video Orientented Transceiver for EXchange of Information (VORTEX) Phase 1 data link • Upgrades AGM-114R Hellfire missile with Common Weapon Library • Integration of High Definition Electro-optical Infra-red sensor upgrades	2.047	42.059	34.384	0.000	34.384

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Integration and testing of other communications, sensors and weapons capabilities • Systems Integration Laboratory and Hardware In Loop Laboratory testing • Systems engineering data development, technical publication (TOs) and training documentation development, and test planning Begin Tech Maturation events including: • Program Design Review (PDR) • Capability Design Review (CDR) • Technology Readiness Review (TRR) • Drawings • T-2 Mods/Technical Orders • Ground test • Safety and Airworthiness certifications • Start of specification work					
FY 2017 Base Plans: Will make final selection for components of Hybrid Release 1 and continue developing and integrating the software and data to update the MQ-9 Block 5 UAS including: • Test and delivery of updated Operational Flight Program (OFP) releases of increased communications, sensors and weapons capabilities • Systems Integration Laboratory and Hardware In Loop Laboratory testing • Systems engineering data development • Technical publication (TOs) and training documentation development • Test planning • Integrated test execution (development test & operational test) • Initial training • Preparation for limited fielding of aircraft (logistics activities) Begin developing and integrating the software and data to update the MQ-9 Block 5 UAS to include Hybrid Release 2 capabilities, including: • Guided Bomb Unit (GBU)-54 • Extended Range for Block 5 aircraft • Barrett Asymmetric Digital Datalink Computer (BADDC)					
FY 2017 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: Test Support ***Description:*** Provides Other Government Agency support for MQ-9 testing to include continued acceptance testing of weapon system hardware and software IAW with contract standards, developmental testing of new capabilities, and Reliability and Maintainability (R&M) upgrades. ***FY 2015 Accomplishments:*** Continued test support. ***FY 2016 Plans:*** Continue test support. ***FY 2017 Base Plans:*** Will continue test support. ***FY 2017 OCO Plans:*** N/A	1.220	0.532	1.405	0.000	1.405
Title: Communications ***Description:*** Develop MQ-9 communications capabilities including, but not limited to, encrypted and improved Line of Sight (LoS) data links to ROVER/Video Data Link terminals (VORTEX/Airborne Platform Video Data Link) and Bandwidth Efficient (BE) Common Data Link (CDL) for Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) transmission to Ground Control Stations (GCS), as well as improved (including BE) Beyond LoS (BLOS) military Satellite Communications (SATCOM) usage. Development and integration of an IP-based Remote Split Operations (RSO) network/infrastructure to include: Improvements to Ground Data Terminals (GDT), Design, development, and test of IP-based network interfaces, Improved Predator Primary Data Link (PPDL) capabilities, network systems managers, SATCOM and relay site capabilities upgrades, drafting Technical Orders (TO) and support documentation, training materials, production drawings, and retrofit acceptance plans. ***FY 2015 Accomplishments:*** • Continued development of Fixed Site Satellite Terminal (FSST) and Satellite Earth Terminal Sub-Systems (SETSS) and relay site equipment, electronics • Continued development of Technical Orders and training course • Continued logistics support analysis	3.184	0.953	0.200	0.000	0.200

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Continued integration of Internet Protocol (IP)-based Remote Split Operations (RSO) network infrastructure • Continued development of advance PPDL and SATCOM capabilities ***FY 2016 Plans:*** Continue the development of: • Fixed Site Satellite Terminal (FSST) and Satellite Earth Terminal Sub-System (SETSS) and relay site equipment • Electronics Technical Orders • BE-CDL and BE-SATCOM • Remote Split Operations(RSO) Technical Orders • Training courses • Logistics support analysis • IP-based equipment upgrades ***FY 2017 Base Plans:*** • Will continue SATCOM and Predator Primary Data Link (PPDL), both Line of Sight (LoS) and Beyond Line of Sight (BLoS), improvements and upgrades • Will enhance Remote Split Operations (RSO) network and supporting communications equipment, including associated Tech Orders, training, and interface updates ***FY 2017 OCO Plans:*** N/A					
Title: MQ-9 Technology Insertion ***Description:*** Develop program protection Technology Insertion capabilities and functionality for the MQ-9 Weapon System. ***FY 2015 Accomplishments:*** Completed development of program protection Technology Insertion capabilities, functionality, documentation and drawings for the MQ-9 Weapon System including: • Aircraft • Sensors • Ground Control Station ***FY 2016 Plans:***	24.457	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Title: Reliability and Maintainability ***Description:*** Develop MQ-9 modification improvements for aircraft and ground base infrastructure. Includes engineering change orders and associated studies and general research. ***FY 2015 Accomplishments:*** Continued development of MQ-9 modification improvements for aircraft and ground based infrastructure to improve mission capable rates and reduce reliability and maintainability cost. ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** Will continue development of MQ-9 modification improvements for aircraft and ground based infrastructure to improve mission capable rates and reduce reliability and maintainability cost. ***FY 2017 OCO Plans:*** N/A	0.999	0.000	3.154	0.000	3.154
Title: Extended Range ***Description:*** Develop Extended Range Blk 1 capability to increase operational range and endurance of the baseline MQ-9. ***FY 2015 Accomplishments:*** Completed development of Extended Range Blk 1 capability to increase operational range and endurance of the baseline MQ-9, including: • Modified wings • External fuel tanks • Non-Recurring Engineering • Technical data (flight manual, maintenance manual, technical orders, and flight test)	15.142	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Addressing any deficiency reports resulting from developmental or operational testing to support fielding recommendations and airworthiness ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	141.528	122.731	120.481	0.000	120.481

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• APAF: BA04: Line Item # PRDTB1: *MQ-9*	418.218	627.428	122.522	366.030	488.552	250.255	298.957	142.677	102.557	61.870	2,390.514
• APAF: BA06:Line Item # PRDTB1: *MQ-9*	78.549	129.273	40.943	87.000	127.943	52.601	105.978	50.372	67.989	217.270	829.975
• APAF: BA05: Line Item # PRDTB2: *MQ-9 Mods*	155.445	184.051	132.139	5.068	137.207	133.081	209.991	156.039	136.045	1,267.303	2,379.162
• APAF: BA07: Line Item # PRDTB1: *MQ-9*	48.591	5.000	35.650	0.000	35.650	36.310	25.882	26.360	26.846	0.000	204.639
• APAF: BA06: PRDTB3: *MQ-9 UAS Payloads*	6.790	5.342	2.905	0.000	2.905	0.216	0.000	0.000	0.000	-	-

Remarks

D. Acquisition Strategy

The MQ-9 Reaper system will be acquired via sole-source contracts with General Atomics Aeronautical Systems Inc. (GA-ASI), L3Comm, and Raytheon as the prime contractors. GA-ASI is the prime contractor for aircraft and ground control stations. L3Comm is the prime contractor for the Predator Satellite Link. Raytheon is the prime contractor for the MTS-B EO/IR sensor system. Management of development and fielding of new capabilities will be through a Hybrid Acquisition Strategy that combines the rigor of an event driven development process (referred to as a Technology Maturation Effort (TME)) with the expeditious delivery of a schedule driven integration and fielding process (referred to as a Hybrid Release). This will allow continued baseline improvements while rapidly integrating limited urgent needs fleet-wide.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 System Development and Demonstration (SDD)	SS/CPIF	GA-ASI : Poway, CA	313.086	23.891	Nov 2014	10.095	Jan 2016	16.512	Jan 2017	0.000		16.512	1.220	364.804	364.804
Block 30 Ground Control Station (GCS) Development	SS/CPFF	GA-ASI : Poway, CA	15.059	8.961	Jan 2015	3.464	Mar 2016	0.000		0.000		0.000	0.000	27.484	27.484
Block 50 Ground Control Station (GCS) Development	SS/CPFF	GA-ASI : Poway, CA	109.964	29.082	Nov 2014	44.858	Oct 2015	51.906	Oct 2016	0.000		51.906	78.593	314.403	314.403
MQ-9 Electro-Optical / Infrared (EO/IR) Sensor	SS/CPFF	Raytheon : McKinney, TX	98.305	10.810	Oct 2014	0.335	Jun 2016	0.344	Jun 2017	0.000		0.344	0.353	110.147	110.147
Operator Simulator	SS/CPIF	L3 Comm : Salt Lake City, UT	21.792	7.091	Dec 2014	10.415	Feb 2016	5.379	Feb 2017	0.000		5.379	11.862	56.539	56.539
Synthetic Aperture Radar (SAR) Enhancements	SS/CPFF	GA-RSG : Poway, CA	40.008	7.838	Oct 2014	0.402	Jan 2016	0.000		0.000		0.000	0.000	48.248	48.248
Hybrid R1 and R2	SS/CPFF	GA-ASI : Poway, CA	0.000	1.887	Feb 2016	36.178	Aug 2016	30.875	Mar 2017	0.000		30.875	127.221	196.161	196.161
Communication	SS/CPFF	GA-ASI : Poway, CA	12.776	3.184	Mar 2015	0.953	Mar 2016	0.200	Mar 2017	0.000		0.200	0.202	17.315	17.315
MQ-9 Program Protection Technology Insertion	SS/CPFF	GA-ASI : Poway, CA	17.186	22.553	Oct 2014	0.000		0.000		0.000		0.000	0.000	39.739	39.739
Reliability and Maintainability	SS/CPFF	GA-ASI : Poway, CA	2.891	0.969	Feb 2015	0.000		1.094	Dec 2016	0.000		1.094	2.121	7.075	7.075
Extended Range	SS/CPFF	GA-ASI : Poway, CA	22.312	13.963	Feb 2015	0.000		0.000		0.000		0.000	0.000	36.275	36.275
Completed Efforts	SS/ Various	Various : Various	42.406	0.028	Aug 2015	0.000		0.000		0.000		0.000	0.000	42.434	42.434
Miscellaneous Prior	Various	Various : Various	71.532	0.000		0.000		2.058	Mar 2017	0.000		2.058	2.118	75.708	75.708
		Subtotal	767.317	130.257		106.700		108.368		0.000		108.368	223.690	1,336.332	1,336.332

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675246 / *MQ-9 Development and Fielding*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various : Various	17.468	1.220	Nov 2014	0.532	Jan 2016	1.405	Dec 2016	0.000		1.405	1.214	21.839	21.839
		Subtotal	17.468	1.220		0.532		1.405		0.000		1.405	1.214	21.839	21.839

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various : Various	33.043	10.051	Nov 2014	15.499	Dec 2015	10.708		0.000		10.708	14.144	83.445	83.445
		Subtotal	33.043	10.051		15.499		10.708		0.000		10.708	14.144	83.445	83.445

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	817.828	141.528		122.731		120.481		0.000		120.481	239.048	1,441.616	1,441.616

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

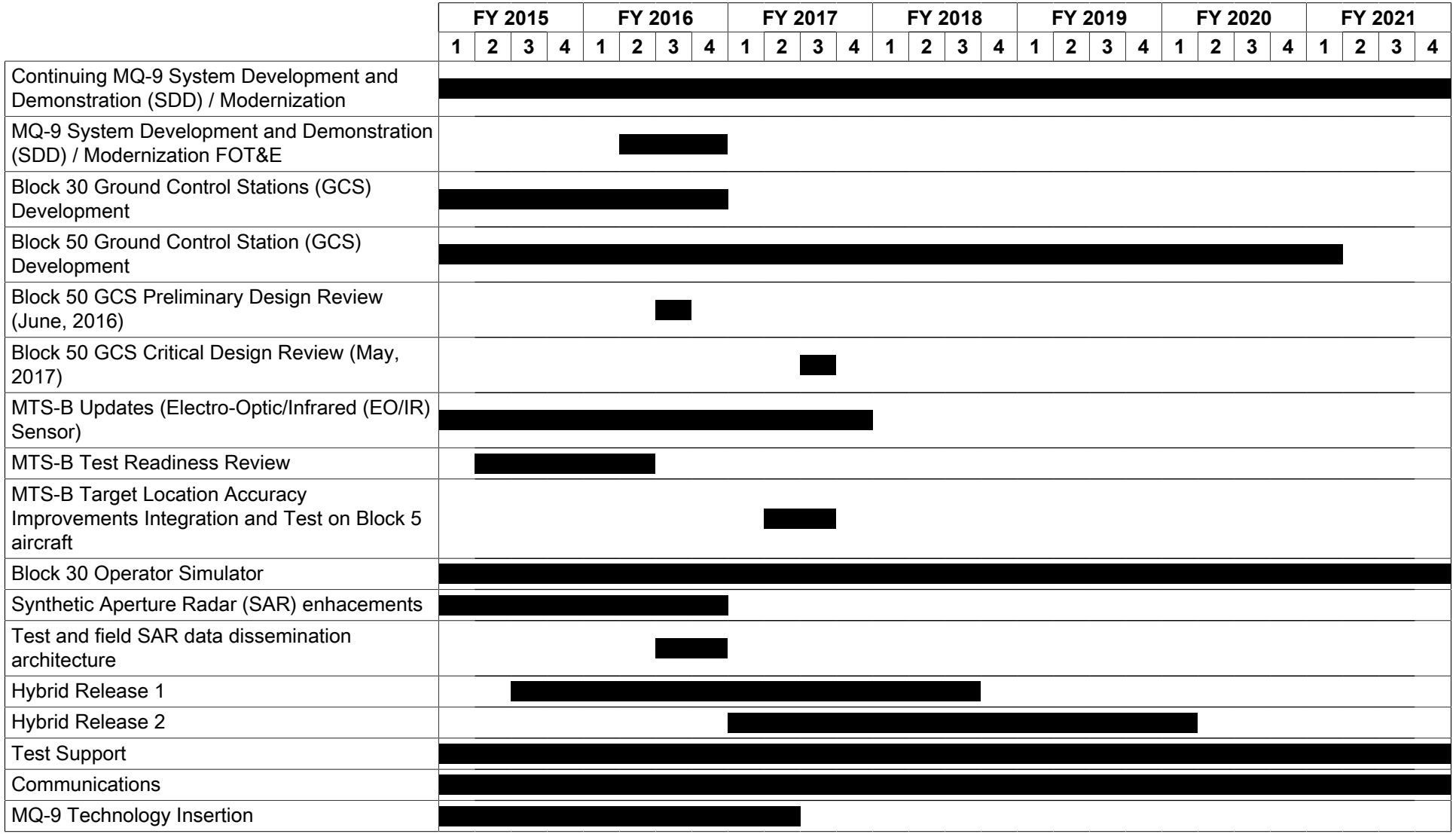

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

	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
Extended Range (ER) Block 1	[redacted]																											

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continuing MQ-9 System Development and Demonstration (SDD) / Modernization	1	2015	4	2021
MQ-9 System Development and Demonstration (SDD) / Modernization FOT&E	2	2016	4	2016
Block 30 Ground Control Stations (GCS) Development	1	2015	4	2016
Block 50 Ground Control Station (GCS) Development	1	2015	1	2021
Block 50 GCS Preliminary Design Review (June, 2016)	3	2016	3	2016
Block 50 GCS Critical Design Review (May, 2017)	3	2017	3	2017
MTS-B Updates (Electro-Optic/Infrared (EO/IR) Sensor)	1	2015	4	2017
MTS-B Test Readiness Review	2	2015	2	2016
MTS-B Target Location Accuracy Improvements Integration and Test on Block 5 aircraft	2	2017	3	2017
Block 30 Operator Simulator	1	2015	4	2021
Synthetic Aperture Radar (SAR) enhacements	1	2015	4	2016
Test and field SAR data dissemination architecture	3	2016	4	2016
Hybrid Release 1	3	2015	3	2018
Hybrid Release 2	1	2017	1	2020
Test Support	1	2015	4	2021
Communications	1	2015	4	2021
MQ-9 Technology Insertion	1	2015	2	2017
Extended Range (ER) Block 1	1	2015	1	2016

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675249 / *MQ-9 Upgrade*	

COST ($ in Millions)	Prior Years	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
675249: *MQ-9 Upgrade*	0.000	0.000	0.000	30.892	0.000	30.892	44.073	108.949	155.402	92.147	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 07 PE 0205219F, project 675249, MQ-9 Upgrade, is a new start.

A. Mission Description and Budget Item Justification

The MQ-9 Reaper Upgrade Program will develop improvements for existing systems and field new capabilities for the MQ-9 fleet through a Hybrid Acquisition Strategy. The objective is to enable fielding of new hardware and/or software for integration into the MQ-9 fleet on an 18-month schedule. The first two releases are under the auspices of the baseline MQ-9 Development and Fielding program. Release 3 and 4 upgrades include, but are not limited to, repositioning Airhandler equipment from the payload tray into "cheeks" on the MQ-9 aircraft fuselage, implementing VORTEX Phase II, replacing the GPS with a differential GPS, implementing an Autonomous Systems upgrade, upgrading the data links to use the new Bandwidth Efficient Common Data Link (BE-CDL), enhancing the Joint Direct Attack Munition (JDAM) targeting capability, the Universal Armament and Sensor Interface and Miniature/Store Interface, implementing the results of the Technology Insertion program, Beyond Line of Sight (BLoS), Barrett Asymmetric Digital Datalink Computer (BADDC), Guided Bomb Unit (GBU)-54, and fielding of the hardware and software required to separate the payload software from the operational flight program (OFP) software to enable fielding of new sensors, weapons, and payloads without requiring changes in the OFP.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: MQ-9 Upgrade	0.000	0.000	29.122	0.000	29.122
Description: Will develop upgrade capabilities to support Releases 3 and 4 of the Hybrid Acquisition strategy. New capabilities will include upgrades of existing aircraft, Ground Control Station (GCS), communication, and payload systems as well as the addition of new capabilities and subsystems. Final lists of upgrades included in each release will be determined as part of future Configuration Steering Board direction and inputs from JUONs and Urgent Operational Need request. Formal approval of Release 3 content will be established in FY 2016 and is currently subject to fluctuation pending customer priorities. Some current candidates for Release 3 include the following: • Autonomous Systems upgrades • Communication Systems upgrades to include the following efforts: • Video Orientated Transceiver for EXchange of Information (VORTEX) Phase 2 will complete the Ground Control Station (GCS) upgrade allowing functionality within the GCS only currently available via laptop computer • Bandwidth Efficient (BE)Common Data Link (CDL) for Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) transmission to Ground Control Stations (GCS)					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675249 / *MQ-9 Upgrade*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Improved (including BE) Beyond LoS (BLOS) military SATCOM usage • Development and integration of an IP-based Remote Split Operations (RSO) network/infrastructure to include: Improvements to Ground Data Terminals (GDT), • Design, development, and test of IP-based network interfaces, Improved Predator Primary Data Link (PPDL) capabilities, network systems managers, SATCOM and relay site capabilities upgrades, drafting Technical Orders (TO) and support documentation, training materials, production drawings, and retrofit acceptance plans • Differential Global Positioning System (GPS) enhancements • AH Cheeks • JDAM targeting improvement • Tech Insertion integration • Beyond Line of Sight (BLoS) • Barrett Asymmetric Digital Datalink (BADDC) • Guided Bomb Unit - 54 (GBU-54) Some current candidates for Release 4 include the following: • Flight/Payload OFP software separation • Block 5 aircraft systems synchronized with Block 50 GCS • Will provide Other Government Agency support for MQ-9 testing to include continued acceptance testing of weapon system hardware and software IAW with contract standards, developmental testing of new capabilities, and Reliability and Maintainability (R&M), upgrades. ***FY 2015 Accomplishments:*** N/A ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** Will develop upgrade capabilities to include, but not limited to: • BLoS - Stations 1 & 7 • BADDC • GBU-54 • Global Positioning System (GPS) enhancements • Communication Systems to include the following efforts: • Video Orientated Transceiver for EXchange of Information (VORTEX) Phase 2 will complete the Ground Control Station (GCS) upgrade allowing functionality within the GCS only currently available via laptop computer					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675249 / *MQ-9 Upgrade*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
• Encrypted and improved Line of Sight (LoS) data links to ROVER terminals (VORTEX) • Bandwidth Efficient (BE) Common Data Link (CDL) for Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) transmission to Ground Control Stations (GCS) • Improved (including BE) Beyond LoS (BLOS) military SATCOM usage • Development and integration of an IP-based Remote Split Operations (RSO) network/infrastructure to include: Improvements to Ground Data Terminals (GDT), • Design, development, and test of IP-based network interfaces, Improved Predator Primary Data Link (PPDL) capabilities, network systems managers, SATCOM and relay site capabilities upgrades, drafting Technical Orders (TO) and support documentation, training materials, production drawings, and retrofit acceptance plans • Formal approval of Release 3 content will be established in FY 2016 and is currently subject to fluctuation pending customer priorities • Will provide Other Government Agency support for MQ-9 testing to include continued acceptance testing of weapon system hardware and software IAW with contract standards, developmental testing of new capabilities, and Reliability and Maintainability (R&M), upgrades. ***FY 2017 OCO Plans:*** N/A					
Title: Operator Simulator Block 50 ***Description:*** Will develop Block 50 Ground Control Station (GCS) operator simulators for training and updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station (GCS) to include Joint Urgent Operation Need (JUON) supported emerging Air Force Special Operations Command (AFSOC) configurations. ***FY 2015 Accomplishments:*** N/A ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** • Will develop Block 50 GCS operator simulators for training and updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station (GCS) to include Joint Urgent Operation Need (JUON) supported emerging Air Force Special Operations Command (AFSOC) configurations. ***FY 2017 OCO Plans:***	0.000	0.000	1.770	0.000	1.770

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675249 / *MQ-9 Upgrade*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	30.892	0.000	30.892

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• APAF: BA06 Line Item # PRDTB1: *MQ-9 Spares*	0.000	0.000	0.000	0.000	0.000	0.000	5.340	17.200	0.000	335.380	357.920
• APAF: BA05 Line Item # PRDTB2: *MQ-9 Mods*	0.000	0.000	9.790	107.000	116.790	69.780	26.700	73.400	104.700	1,603.537	1,994.907

Remarks

D. Acquisition Strategy

Acquisition of MQ-9 upgrades will initially be accomplished via sole-source contracts with General Atomics-ASI and L-3 Communications, the prime contractors. Management of development and fielding of new capabilities will be through a Hybrid Acquisition Strategy that combines the rigor of an event driven development process (referred to as a Technology Maturation Effort (TME)) with the expeditious delivery of a schedule driven integration and fielding process (referred to as a Hybrid Release). This will allow continued baseline improvements while rapidly integrating limited urgent needs fleet-wide.

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675249 / *MQ-9 Upgrade*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 Upgrade - Hybrid Release 3 and out	SS/CPFF	GA-ASI : Poway, CA	0.000	0.000		0.000		25.600	Apr 2017	0.000		25.600	548.453	574.053	574.053
Operator Simulator	SS/CPIF	L3 Comm : Salt Lake City, UT	0.000	0.000		0.000		1.770	Jun 2017	0.000		1.770	91.841	93.611	93.611
Reliability and Maintainability	SS/CPFF	GA-ASI : Poway, CA	0.000	0.000		0.000		0.000		0.000		0.000	10.386	10.386	10.386
Urgent Services	SS/CPFF	GA-ASI : Poway, CA	0.000	0.000		0.000		0.000		0.000		0.000	16.637	16.637	16.637
		Subtotal	0.000	0.000		0.000		27.370		0.000		27.370	667.317	694.687	694.687

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Various : Various	0.000	0.000		0.000		0.000		0.000		0.000	Continuing	Continuing	-
		Subtotal	0.000	0.000		0.000		0.000		0.000		0.000	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	TBD; TBD : TBD	0.000	0.000		0.000		3.522	Jun 2017	0.000		3.522	117.386	120.908	120.909
		Subtotal	0.000	0.000		0.000		3.522		0.000		3.522	117.386	120.908	120.909

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675249 / *MQ-9 Upgrade*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		30.892		0.000		30.892	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675249 / *MQ-9 Upgrade*

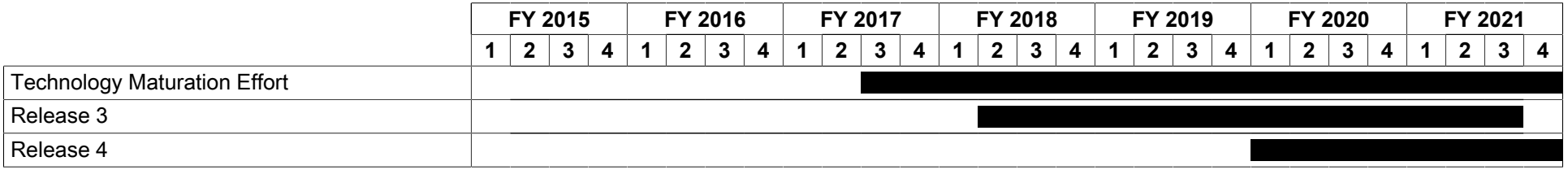

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675249 / *MQ-9 Upgrade*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Maturation Effort	3	2017	4	2021
Release 3	2	2018	3	2021
Release 4	1	2020	4	2021