

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0305219F: MQ-1 Predator A UAV							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	335.638	51.642	9.122	3.326	-	3.326	1.396	0.930	0.279	0.284	0.000	402.617
675143: Predator	335.638	51.642	9.122	3.326	-	3.326	1.396	0.930	0.279	0.284	0.000	402.617
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
MDAP/MAIS Code(s): 271												
<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
<p>The basic MQ-1 system consists of the aircraft, a control station, communications equipment, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. This funding supports development and enhancements to the Predator weapon system to include: aircraft and Ground Control Stations (GCS) and associated software, sensors, communication equipment, training systems and support elements. The system is designed to be modular and open-ended. Mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.</p>												
<p>The MQ-1 aircraft is a single-engine, propeller-driven, remotely piloted aircraft (formerly called Unmanned Aircraft Vehicle, UAV) designed to operate over-the-horizon for long endurance sorties. The aircraft is designed to provide real-time Intelligence, Surveillance, Reconnaissance, and Target Acquisition (ISR TA), and attack capability to aggressively prosecute Time Sensitive Targets (TSTs). The aircraft is configured to carry Hellfire laser-guided missiles. The MQ-1 operates primarily at medium altitudes, integrating with joint aerospace, ground, and maritime forces as well as coalition and Allied forces, to execute combatant commander priority missions. The aircraft carries a Multi-spectral Targeting System (MTS) (a sensor turret that incorporates Electro-Optical (EO), Infra-Red (IR), laser designator, and IR illuminator) capable of transmitting real-time Full Motion Video (FMV) imagery throughout the operational theater.</p>												
<p>Major changes will be classified as distinct blocks or Mission Design Series (MDS) updates. The overarching MQ-1 modernization activity is known as the Critical Capabilities Integration Program (CCIP). CCIP will integrate Predator Primary Data Link (PPDL) into the GCS, upgrade the aircraft GPS, and integrate Hellfire R Software, Digital Video, Video Orientated Transceiver for Exchange of Information FMV encrypted data link, and Airborne Cueing and Exploitation System Hyperspectral Sensor (ACES HY). This program will also address interoperability among developed systems through common standards and tools. Additionally, this program will continue to address reliability and maintainability, safety of flight, and warfighter needs as they arise.</p>												
<p>The GCS, common with the MQ-9 Reaper, functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provide a means for manual control; allow control of multiple aircraft and payloads; allow personnel to launch, recover, and monitor aircraft, payloads, and system communications status; secure data links to receive payload sensor data and command</p>												

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force				DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0305219F: MQ-1 Predator A UAV				
links; monitor threats to the aircraft; display a common operational picture; and provide support functions. Additionally, GCS allows for servicing, systems checks, maintaining, launching, and recovering aircraft under LOS control for hand-off to a mobile or fixed facility GCS.						
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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget		11.642	9.122	5.652	-	5.652
Current President's Budget		51.642	9.122	3.326	-	3.326
Total Adjustments		40.000	0.000	-2.326	-	-2.326
• Congressional General Reductions		-	0.000			
• Congressional Directed Reductions		-	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		-	0.000			
• Congressional Directed Transfers		-	0.000			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		0.000	0.000			
• Other Adjustments		40.000	0.000	-2.326	-	-2.326
Change Summary Explanation						
Reduction of \$2.326M in FY14 due to higher AF priorities.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2012	FY 2013	FY 2014
Title: OGC and Urgent Services				0.871	0.632	0.579
Description: Other Government Costs (OGC) and Urgent Services						
FY 2012 Accomplishments:						
Continued OGC and Urgent Services						
FY 2013 Plans:						
Will continue OGC and Urgent Services						
FY 2014 Plans:						
Will complete OGC and Urgent Services						
Title: Program Management Administration (PMA)				0.496	0.820	0.784

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0305219F: <i>MQ-1 Predator A UAV</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Description:</b> Program Management Administration  <b>FY 2012 Accomplishments:</b> Continued Program Management Administration  <b>FY 2013 Plans:</b> Will continue Program Management Administration  <b>FY 2014 Plans:</b> Will continue Program Management Administration				
<b>Title:</b> ST&E  <b>Description:</b> Systems Test & Evaluation (ST&E)  <b>FY 2012 Accomplishments:</b> Continued ST&E  <b>FY 2013 Plans:</b> Will continue ST&E  <b>FY 2014 Plans:</b> Will complete ST&E		0.618	1.445	0.613
<b>Title:</b> PMATS  <b>Description:</b> Predator Mission Aircrew Training System (PMATS)  <b>FY 2012 Accomplishments:</b> Continued PMATS development activity to keep the training system current with other MQ-1 CCI development activities  <b>FY 2013 Plans:</b> Will continue PMATS development to keep the training system current with other MQ-1 CCI development activities  <b>FY 2014 Plans:</b> Will complete PMATS development to keep the training system current with other MQ-1 CCI development activities		0.304	1.242	1.350
<b>Title:</b> VORTEX  <b>Description:</b> Video Oriented Transceiver for Exchange of Information (VORTEX)		3.698	1.902	0.000

# UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0305219F: <i>MQ-1 Predator A UAV</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b><i>FY 2012 Accomplishments:</i></b> Continued development of VORTEX, a system which enables encrypted line of sight data transmission across multiple frequencies, channels, and waveforms. Includes aircraft integration and software development.				
<b><i>FY 2013 Plans:</i></b> Will continue development on VORTEX, a system which enables encrypted line of sight data transmission across multiple frequencies, channels, and waveforms. Includes aircraft integration and software development.				
<b><i>FY 2014 Plans:</i></b> N/A				
<b><i>Title:</i></b> CCI <b><i>Description:</i></b> Critical Capabilities Integration (CCI)		1.765	0.987	0.000
<b><i>FY 2012 Accomplishments:</i></b> Continued development of the overarching integration strategy as well as development for the integration of differential Global Positioning System (dGPS).				
<b><i>FY 2013 Plans:</i></b> Will complete development of the overarching integration strategy as well as development for the integration of dGPS.				
<b><i>FY 2014 Plans:</i></b> N/A				
<b><i>Title:</i></b> Hellfire Software <b><i>Description:</i></b> Hellfire Software		3.000	0.798	0.000
<b><i>FY 2012 Accomplishments:</i></b> Continued development required to integrate the next generation Hellfire air-to-ground missile (AGM-114R) on the MQ-1				
<b><i>FY 2013 Plans:</i></b> Will complete development and conduct testing required to integrate the next generation Hellfire missile (AGM-114R) on the MQ-1				
<b><i>FY 2014 Plans:</i></b> N/A				
<b><i>Title:</i></b> Digital Video		0.890	1.296	0.000

## UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0305219F: MQ-1 Predator A UAV							
C. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Description: Digital Video												
FY 2012 Accomplishments: Continued development activities including engineering, design, integration and testing to improved image quality from analog to 720p and synchronized metadata for the MQ-1												
FY 2013 Plans: Will complete development activities including engineering, design, integration and testing to improved image quality from analog to 720p and synchronized metadata for the MQ-1												
FY 2014 Plans: N/A												
Title: Predator C Sensors										40.000	0.000	0.000
Description: Predator C Sensors												
FY 2012 Accomplishments: Integrated and tested EO/IR sensor for Predator C demonstration												
FY 2013 Plans: N/A												
FY 2014 Plans: N/A												
Accomplishments/Planned Programs Subtotals										51.642	9.122	3.326
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• APAF: BA05: Line Item # PRDT01: MQ-1 MODS	161.246	30.861	9.734		9.734	4.800	3.200	0.000	0.000	0.000	0.000	
• APAF: BA06: Line Item # PRDT01: INITIAL SPARES	7.729	4.845	2.466		2.466	4.033	0.310	0.000	0.000	0.000	0.000	
• MILCON: PE 0305219: OTHER CONTINGENCIES	15.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	15.000	

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Air Force										<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0305219F: <i>MQ-1 Predator A UAV</i>						
<b>D. Other Program Funding Summary (\$ in Millions)</b>											
			<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Complete</u>	<u>Total Cost</u>
<b>Remarks</b>											
<b>E. Acquisition Strategy</b>											
The MQ-1 Predator system will be acquired via sole-source acquisition strategies with General Atomics-ASI and Raytheon as the prime contractors.											
<b>F. 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 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development							R-1 ITEM NOMENCLATURE PE 0305219F: MQ-1 Predator A UAV				PROJECT 675143: Predator				
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMATS	Various	L3 Comm:Binghamton, NY	28.022	0.304	Mar 2012	1.242	Feb 2013	1.350	Dec 2013	-		1.350	0.000	30.918	30.918
VORTEX	SS/CPIF	General Atomics - ASI:Poway, CA	4.594	3.698	Aug 2012	1.902	Feb 2013	0.000		-		0.000	0.000	10.194	10.194
CCI	SS/CPIF	General Atomics - ASI:Poway, CA	15.732	1.765	Jul 2012	0.987	Feb 2013	0.000		-		0.000	0.000	18.484	18.484
Hellfire Software	SS/CPIF	General Atomics - ASI:Poway, CA	0.589	3.000	Jul 2012	0.798	Feb 2013	0.000		-		0.000	2.326	6.713	6.713
Digital Video	SS/CPIF	General Atomics - ASI:Poway, CA	5.243	0.890	Jul 2012	1.296	Feb 2013	0.000		-		0.000	0.000	7.429	7.429
Predator C Sensors	SS/CPFF	United Technologies:Westford, MA	16.300	40.000	Apr 2013	0.000		0.000		-		0.000	0.000	56.300	56.300
Prior Year Completed Projects	Various	Not specified.:	230.174	0.000		0.000		0.000		-		0.000	0.000	230.174	230.174
Subtotal			300.654	49.657		6.225		1.350		0.000		1.350	2.326	360.212	360.212
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OGC and Urgent Services	Various	Various:Various,	22.208	0.871	Dec 2011	0.632	Dec 2012	0.579	Dec 2013	-		0.579	0.563	24.853	24.853
Subtotal			22.208	0.871		0.632		0.579		0.000		0.579	0.563	24.853	24.853
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various:Various,	7.250	0.618	Mar 2012	1.445	Dec 2012	0.613	Dec 2013	-		0.613	0.000	9.926	9.926
Subtotal			7.250	0.618		1.445		0.613		0.000		0.613	0.000	9.926	9.926

**UNCLASSIFIED**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Air Force												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>							<b>R-1 ITEM NOMENCLATURE</b> PE 0305219F: <i>MQ-1 Predator A UAV</i>				<b>PROJECT</b> 675143: <i>Predator</i>				

<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All 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>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management Administration (PMA)	Various	Various:Various,	5.526	0.496	Nov 2011	0.820	Nov 2012	0.784	Nov 2013	-		0.784	0.000	7.626	7.626
<b>Subtotal</b>			5.526	0.496		0.820		0.784		0.000		0.784	0.000	7.626	7.626

	<b>All Prior Years</b>	<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	335.638	51.642		9.122		3.326		0.000		3.326	2.889	402.617	402.617

**Remarks**

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

**APPROPRIATION/BUDGET ACTIVITY**

3600: Research, Development, Test & Evaluation, Air Force  
BA 7: Operational Systems Development

**R-1 ITEM NOMENCLATURE**

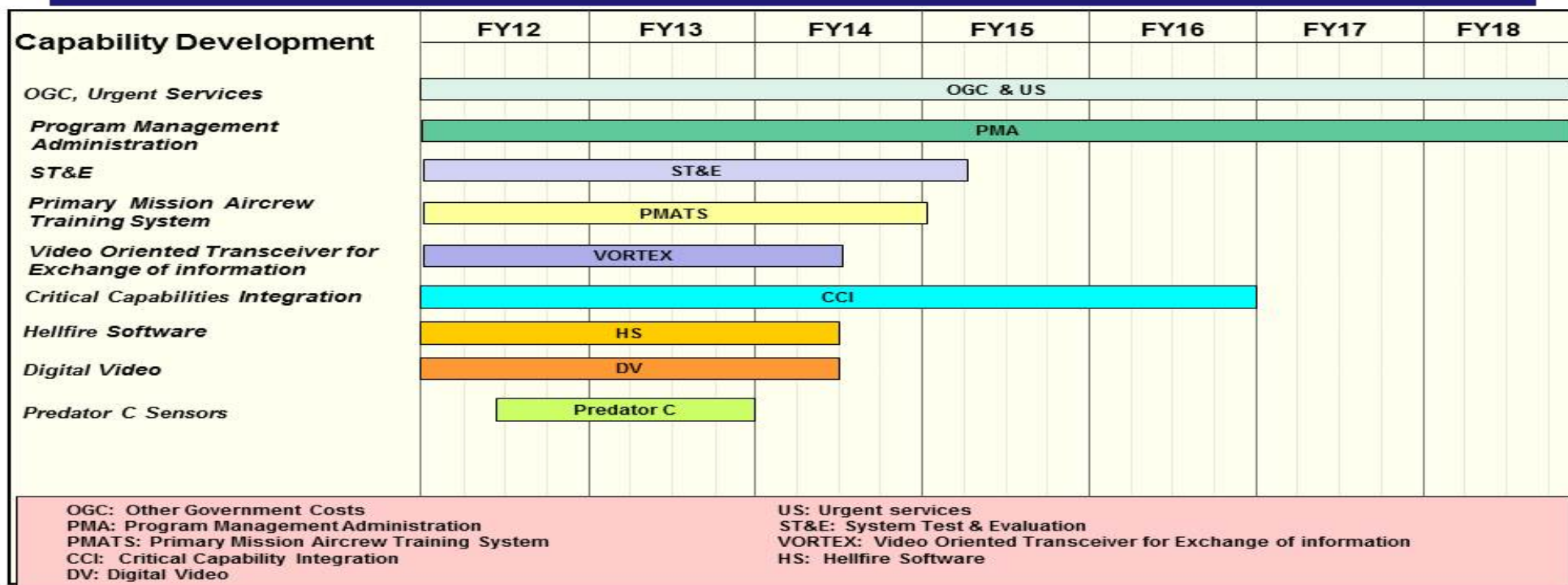
PE 0305219F: MQ-1 Predator A UAV

**PROJECT**

675143: Predator



# MQ-1 Predator Program Schedule



# UNCLASSIFIED

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305219F: <i>MQ-1 Predator A UAV</i>	<b>PROJECT</b> 675143: <i>Predator</i>	

## Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OGC, Urgent Services	1	2012	4	2018
Program Management Administration	1	2012	4	2018
ST&E	1	2012	1	2015
Predator Mission Aircrew Training System	1	2012	4	2014
Video Oriented Transceiver tor Exchange of Information	1	2012	2	2014
Critical Capabilities Integration	1	2012	4	2016
Hellfire Software	1	2012	2	2014
Digital Video	1	2012	2	2014
Predator C Sensors	2	2012	4	2013