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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219F: <i>PREDATOR DEVELOPMENT/FIELDING</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	42.776	11.642	9.122	-	9.122	5.652	-	-	0.279	Continuing	Continuing
675143: <i>Predator</i>	42.776	11.642	9.122	-	9.122	5.652	-	-	0.279	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY11 funding includes \$19M for Overseas Contingency Operations.

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

A. Mission Description and Budget Item Justification

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.

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. Predator will develop and incorporate encryption for its data links.

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). The first CCIP increment will integrate Primary Predator Data Link (PPDL) into the GCS, upgrade the aircraft GPS, and integrate Hellfire R Software, Digital Video, VORTEX FMV encrypted data link, and ACES HY hyperspectral sensor.

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

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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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget		28.913	14.112	9.105	-	9.105
Current President's Budget		42.776	11.642	9.122	-	9.122
Total Adjustments		13.863	-2.470	0.017	-	0.017
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-2.470			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-5.000	-			
• SBIR/STTR Transfer		-	-			
• Other Adjustments		18.863	-	0.017	-	0.017
Change Summary Explanation						
FY11						
- Funding total includes \$19.0M OCO (\$15.0M for the Predator C Test Vehicle and \$4.0M for the Counter IED effort)						
- \$5M transferred to higher Air Force priorities						
- Cong General Reduction (-\$0.137M) included						
FY12 -\$2.474M for CSP (Congressional directed reduction).						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2011	FY 2012	FY 2013
Title: OGC and Urgent Services				2.172	1.488	1.372
Description: Other Government Costs (OGC) and Urgent Services						
FY 2011 Accomplishments: Continued OGC and Urgent Services						
FY 2012 Plans:						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continue OGC and Urgent Services				
FY 2013 Plans: Will continue OGC and Urgent Services				
Title: ST&E Description: Systems Test & Evaluation (ST&E) FY 2011 Accomplishments: Continued ST&E FY 2012 Plans: Continue ST&E FY 2013 Plans: Will continue ST&E		0.797	1.118	1.445
Title: GCS Description: Ground Control Station (GCS) FY 2011 Accomplishments: Continued GCS costs		0.200	-	-
Title: PMATS Description: Predator Mission Aircrew Training System (PMATS) FY 2012 Plans: PMATS development activity to keep the training system current with other MQ-1 CCI development activities FY 2013 Plans: Will continue PMATS development to keep the training system current with other MQ-1 CCI development activities		-	0.389	2.122
Title: VORTEX Description: Video Oriented Transceiver for Exchange of Information (VORTEX) FY 2011 Accomplishments:		1.494	3.226	1.205

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
Continued development of VORTEX Phase 2, a system which enables encrypted line of sight data transmission across multiple frequencies, channels, and waveforms. Includes aircraft integration and software development. FY 2012 Plans: Continue development of VORTEX Phase 2, a system which enables encrypted line of sight data transmission across multiple frequencies, channels, and waveforms. Includes aircraft integration and software development. FY 2013 Plans: Will continue development of and conduct testing on VORTEX Phase 2, a system which enables encrypted line of sight data transmission across multiple frequencies, channels, and waveforms. Includes aircraft integration and software development.				
Title: CCI Description: Critical Capabilities Integration (CCI) FY 2011 Accomplishments: Continued development of the overarching integration strategy as well as development for the integration of PPDL and dGPS FY 2012 Plans: Continue development of the overarching integration strategy as well as development for the integration of dGPS. FY 2013 Plans: Will complete development of the overarching integration strategy as well as development for the integration of dGPS		8.151	1.531	0.682
Title: Hellfire Software Description: Hellfire Software FY 2011 Accomplishments: Initiated development required to integrate the next generation Hellfire missile (AGM-114R) on the MQ-1 FY 2012 Plans: Continue development required to integrate the next generation Hellfire missile (AGM-114R) on the MQ-1 FY 2013 Plans: Will complete development and conduct testing required to integrate the next generation Hellfire missile (AGM-114R) on the MQ-1		0.500	3.000	1.000
Title: Digital Video Description: Digital Video		4.043	0.890	1.296

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Continued development activities including engineering, design, integration and testing to improved image quality from analog to 720p and Synchronized Metadata for the MQ-1 <i>FY 2012 Plans:</i> Continue development activities including engineering, design, integration and testing to improved image quality from analog to 720p and Synchronized Metadata for the MQ-1 <i>FY 2013 Plans:</i> 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				
<i>Title:</i> CSP <i>Description:</i> Common Sensor Payload (CSP) <i>FY 2011 Accomplishments:</i> Build and test two CSP prototypes with the Army		3.400	-	-
<i>Title:</i> IP Migration <i>Description:</i> IP Migration <i>FY 2011 Accomplishments:</i> Completed development of the IP migration effort which will transition the RSO architecture from an ATM standard to an IP standard in both terms of hardware and data service		0.219	-	-
<i>Title:</i> Counter IED (OCO) <i>Description:</i> Congressional funding to develop a Counter IED for MQ-1 <i>FY 2011 Accomplishments:</i> Development of sensor capabilities, new data collection techniques, and new data exploitation techniques which will help counter the IED threat faced by deployed war fighters		4.000	-	-
<i>Title:</i> Predator C Test Vehicle (OCO) <i>Description:</i> Predator C aircraft test vehicle <i>FY 2011 Accomplishments:</i>		15.000	-	-

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C. Accomplishments/Planned Programs (\$ in Millions)										FY 2011	FY 2012	FY 2013
This effort purchased a Predator C aircraft to act as the test vehicle to develop next generation UAS sensors, weapons, and TTPs ensuring a quick, smooth and efficient fielding of these advanced capabilities to the area of operations												
Title: UAS Command and Control Initiatives (UCI)										2.800	-	-
Description: Development of open system architecture for RPA ground control segments												
FY 2011 Accomplishments: Supported the Air Force's rapid capabilities office's development of UCI architecture to support the Ground Control Stations												
Accomplishments/Planned Programs Subtotals										42.776	11.642	9.122
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost	
• APAF, PE 0305219F, Predator Deve...: APAF	20.101	168.975	35.706	0.000	35.706	20.976	3.567	0.000	0.000	Continuing	Continuing	
E. Acquisition Strategy The MQ-1 Predator system will be acquired via sole-source acquisition strategies with General Atomics-ASI and Raytheon as the prime contractors.												
F. 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.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force										DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0305219F: PREDATOR DEVELOPMENT/ FIELDING				PROJECT 675143: Predator					
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GCS	SS/CPFF	General Atomics - ASI:Poway, CA	42.190	-		-		-		-	0.000	42.190	42.190
PMATS	Various	L3 Comm:Binghamton, NY	28.022	0.389	Aug 2012	2.122	Dec 2012	-		2.122	Continuing	Continuing	TBD
VORTEX	SS/CPIF	General Atomics - ASI:Poway, CA	4.594	3.226	Jan 2012	1.205	Dec 2012	-		1.205	1.718	10.743	10.743
CCI	SS/CPIF	General Atomics - ASI:Poway, CA	15.732	1.531	Dec 2011	0.682	Dec 2012	-		0.682	0.000	17.945	17.945
Hellfire Software	SS/CPIF	General Atomics - ASI:Poway, CA	0.589	3.000	Mar 2012	1.000	Dec 2012	-		1.000	0.000	4.589	4.589
Digital Video	SS/CPIF	General Atomics - ASI:Poway, CA	5.243	0.890	Jan 2012	1.296	Dec 2012	-		1.296	0.000	7.429	7.429
CSP	SS/CPFF	Raytheon:McKinney, TX	3.400	-		-		-		-	0.000	3.400	3.400
IP Migration	SS/CPFF	General Atomics - ASI:Poway, CA	8.058	-		-		-		-	0.000	8.058	8.058
Counter IED	SS/CPFF	Raytheon:McKinney, TX	4.000	-		-		-		-	0.000	4.000	4.000
Predator C Test Vehicle	SS/CPFF	General Atomics - ASI:Poway, CA	16.300	-		-		-		-	0.000	16.300	16.300
UAS Command and Control Initiatives (UCI)	SS/CPFF	Various:Various,	2.800	-		-		-		-	0.000	2.800	2.800
Prior Year Completed Projects	Various	Not specified.:	169.726	-		-		-		-	0.000	169.726	169.726
Subtotal			300.654	9.036		6.305		-		6.305			
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	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	1.381	Dec 2011	1.250	Dec 2012	-		1.250	Continuing	Continuing	TBD
Subtotal			22.208	1.381		1.250		-		1.250			

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	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	1.118	Mar 2012	1.445	Dec 2012	-		1.445	Continuing	Continuing	TBD
Subtotal			7.250	1.118		1.445		-		1.445			

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	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:Various,	5.526	0.107	Nov 2011	0.122	Oct 2012	-		0.122	0.000	5.755	0.000
Subtotal			5.526	0.107		0.122		-		0.122	0.000	5.755	0.000

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			335.638	11.642		9.122		-		9.122			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force			DATE: February 2012
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OGC, ECO, Urgent Services	1	2011	4	2014
ST&E	1	2011	4	2014
Ground Control Station	1	2011	3	2012
Predator Mission Aircrew Training System	1	2011	4	2014
Video Oriented Transceiver tor Exchange of Information	1	2011	2	2014
Critical Capabilities Integration	1	2011	3	2014
Hellfire Software	4	2011	3	2014
Digital Video	1	2011	4	2013
IP Migration	1	2011	4	2012
Counter Improvised Explosive Devise (IED)	2	2012	4	2013
Predator C Test Vehicle	2	2012	3	2013
UAS Command and Control Initiative (UCI)	4	2011	4	2012