PE NUMBER: 0205219F
PE TITLE: MQ-9 Development and Fielding

Exhibit R-2, RDT&E Budget Item Justification	DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0205219F MQ-9 Development and Fielding

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	55.863	46.431	39.245	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5246	MQ-9 Development and Fielding	55.863	46.431	39.245	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

FY 2010 funding totals do not include $1.4M requested for Overseas Contingency Operations.

(U) A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a control station, 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 in a 'plug-and-play' mission kit concept allowing 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 designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infra-red(EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer) and also perform Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA) as a secondary role. In the hunter-killer role, the aircraft will employ fused multi-spectral sensors to automatically find, fix, and track ground targets (Automatic Target Cueing (ATC), Target Location Accuracy (TLA), Metric Sensor and other capabilities) and assess post-strike results. The MQ-9 is in continuing development and will field capability through incremental upgrades. Capabilities in development include increasing the aircraft's gross take-off weight; enhancing aircraft systems to include integrated redundant avionics, ice detection capability, navigation system upgrades, electrical system upgrades, sensor/stores management computer, MIL-STD-1760 advanced weapons data bus, advanced sensor and weapons payloads, and improved human-machine interface; integrating standard precision weapons (AGM-114 Hellfire missile and GBU-12/38/49 guided bombs); Mode 5 integration, hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapons system certification and accreditation; and producing applicable training devices that emulate aircraft capabilities. Subsequent investments will continue to evolve the MQ-9's capabilities to meet and integrate new requirements (e.g. SIGINT, communications, Wide Area Airborne Surveillance (WAAS) and other sensors and weapons), and address reliability and maintainability and safety issues. Activities also include studies and analysis to support both current program planning and execution and future program planning.

The Ground Control Station (GCS) 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, and a GCS configuration to 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 links; monitor threats to the aircraft; display common operation picture; and provide support functions. Additionally, a Launch and Recovery GCS (LRGCS) allows for servicing, systems checks, maintaining, launching, and recovering aircraft under LOS control for hand-off to a mobile or fixed facility GCS. The GCS will continue to evolve and upgrade its capabilities to keep pace with MQ-9 system capabilities and the missions they perform.

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0205219F MQ-9 Development and Fielding

This program will participate in studies, analysis, development, testing, and implementation of future unmanned aircraft systems (UASs) and various standards to pursue joint, Allied, and coalition interoperability.

This program is in Budget Activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

Prior year costs reflected on the R-3 were included in the Predator Program Element.

(U) B. Program Change Summary ($ in Millions)

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	63.862	43.557	37.717
(U)	Current PBR/President's Budget	55.863	46.431	39.245
(U)	Total Adjustments	-7.999	2.874	
(U)	Congressional Program Reductions			
	Congressional Rescissions		-0.126	
	Congressional Increases		3.000	
	Reprogrammings	-7.999		
	SBIR/STTR Transfer			

(U) Significant Program Changes:

Reduction on RDT&E funding between FY09 and FY10 reflects completion of System Design Development (SDD) Increment I activities

FY09 includes $3M of congressional add funding for Hancock Field/UAS Portal.

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0205219F MQ-9 Development and Fielding	PROJECT NUMBER AND TITLE: 5246 MQ-9 Development and Fielding	

Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5246 MQ-9 Development and Fielding	55.863	46.431	39.245	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

FY 2010 funding totals do not include $1.4M requested for Overseas Contingency Operations.

(U) A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a control station, 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 in a 'plug-and-play' mission kit concept allowing 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 designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infra-red(EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer) and also perform Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA) as a secondary role. In the hunter-killer role, the aircraft will employ fused multi-spectral sensors to automatically find, fix, and track ground targets (Automatic Target Cueing (ATC), Target Location Accuracy (TLA), Metric Sensor and other capabilities) and assess post-strike results. The MQ-9 is in continuing development and will field capability through incremental upgrades. Capabilities in development include increasing the aircraft's gross take-off weight; enhancing aircraft systems to include integrated redundant avionics, ice detection capability, navigation system upgrades, electrical system upgrades, sensor/stores management computer, MIL-STD-1760 advanced weapons data bus, advanced sensor and weapons payloads, and improved human-machine interface; integrating standard precision weapons (AGM-114 Hellfire missile and GBU-12/38/49 guided bombs); Mode 5 integration, hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapons system certification and accreditation; and producing applicable training devices that emulate aircraft capabilities. Subsequent investments will continue to evolve the MQ-9's capabilities to meet and integrate new requirements (e.g. SIGINT, communications, Wide Area Airborne Surveillance (WAAS) and other sensors and weapons), and address reliability and maintainability and safety issues. Activities also include studies and analysis to support both current program planning and execution and future program planning.

The Ground Control Station (GCS) 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, and a GCS configuration to 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 links; monitor threats to the aircraft; display common operation picture; and provide support functions. Additionally, a Launch and Recovery GCS (LRGCS) allows for servicing, systems checks, maintaining, launching, and recovering aircraft under LOS control for hand-off to a mobile or fixed facility GCS. The GCS will continue to evolve and upgrade its capabilities to keep pace with MQ-9 system capabilities and the missions they perform.

Exhibit R-2a, RDT&E Project Justification		DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0205219F MQ-9 Development and Fielding	PROJECT NUMBER AND TITLE 5246 MQ-9 Development and Fielding

This program will participate in studies, analysis, development, testing, and implementation of future unmanned aircraft systems (UASs) and various standards to pursue joint, Allied, and coalition interoperability.

This program is in Budget Activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

Prior year costs reflected on the R-3 were included in the Predator Program Element.

	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	MQ-9 System Development and Demonstration (SDD). Includes aircraft/GCS/Communication system improvements, development and integration of follow-on sensors, weapon and payload integration, test and training capability, technical data.	25.365	15.684	25.200
(U)	EO/IR Development	1.110	0.000	0.684
(U)	MQ-9 TLA Development	7.821	6.955	5.537
(U)	Other Government Costs, including Developmental and Operational Test support, SATCOM, Urgent Services	13.926	12.492	7.824
(U)	Operator Simulator	5.241	5.500	0.000
(U)	SAR Upgrade	2.400	5.800	0.000
(U)	Total Cost	55.863	46.431	39.245

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

		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U)	Other APPN										
(U)	Aircraft Procurement, AF (PE 0205219F)	374.537	248.598	489.469						Continuing	TBD
(U)	Aircraft Modification, AF (PE 0205219F)	16.939	44.520	29.287						Continuing	TBD

This funding profile includes the following: $316.462M for Aircraft Procurement appropriated in the FY08 GWOT Supplemental, $87.642M for Aircraft Procurement appropriated in the FY09 Bridge Supplemental.

(U) D. Acquisition Strategy

The MQ-9 Reaper system will be acquired sole-source with General Atomics-ASI as the prime contractor. Raytheon is the sole source provider of the MTS-B system.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0205219F MQ-9 Development and Fielding

PROJECT NUMBER AND TITLE: 5246 MQ-9 Development and Fielding

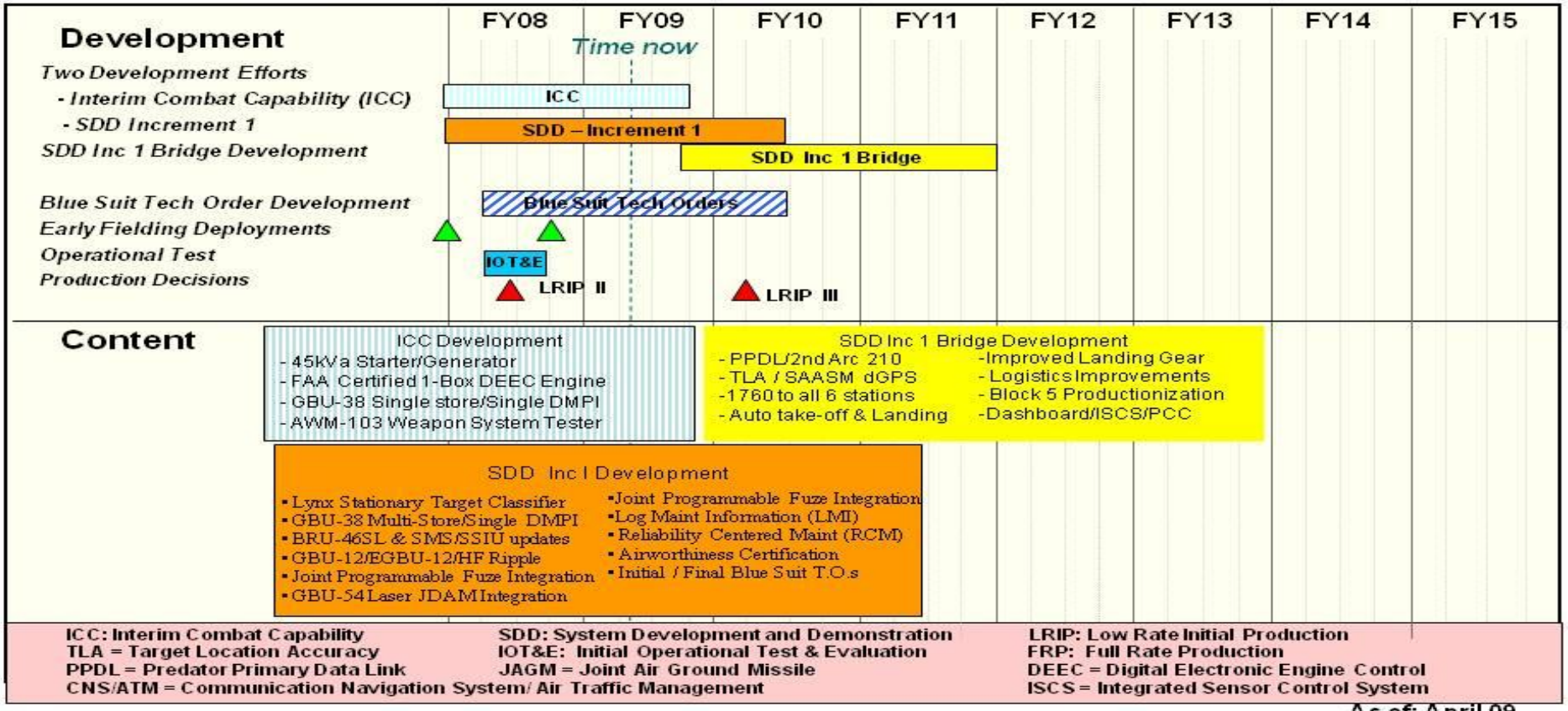
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
MQ-9 System Development and Demonstration	SS/CPIF/CPFF	GA-ASI, Rancho Bernardo CA	118.660	25.365	Jan-08	15.684	Feb-09	25.200	Jan-10	Continuing	TBD	TBD
EO/IR Development	CPFF	Raytheon, McKinney TX	2.188	1.110	Jul-08	0.000		0.684	Feb-10	Continuing	TBD	TBD
Operator Simulator Development	CPFF	677 AESG, Wright-Patterson AFB OH	0.000	5.240	Jul-08	5.500	Mar-09	0.000		Continuing	TBD	TBD
SAR Upgrade	CPFF	GA-RSG, San Diego, CA	0.000	2.400	Apr-08	5.800	Mar-09	0.000		Continuing	TBD	TBD
MQ-9 TLA	Various	Raytheon, McKinney TX	0.000	7.821	Mar-08	6.955	Apr-09	5.537	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			120.848	41.936		33.939		31.421		Continuing	TBD	TBD
Remarks:												
(U) Test & Evaluation												
Program Support	Various	Various	11.611	13.927	Mar-08	12.492	Feb-09	7.824	Feb-10	Continuing	TBD	TBD
Subtotal Test & Evaluation			11.611	13.927		12.492		7.824		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			132.459	55.863		46.431		39.245		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0205219F MQ-9 Development and Fielding	PROJECT NUMBER AND TITLE: 5246 MQ-9 Development and Fielding

FOR OFFICIAL USE ONLY

MQ-9 Reaper RDT&E Schedule

Dominant Air Power: Design For Tomorrow…Deliver Today



1

FOR OFFICIAL USE ONLY

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0205219F MQ-9 Development and Fielding**	PROJECT NUMBER AND TITLE **5246 MQ-9 Development and Fielding**

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) Blue Suit Tech Order Contract Start	2Q		
(U) IOT&E Completion	4Q		
(U) SDD Bridge Contract Start		3Q	
(U) ICC Contract Completion		3Q	
(U) SDD Increment 1 Contract Completion			2Q
(U) Blue Suit Tech Order Contract End			2Q

THIS PAGE INTENTIONALLY LEFT BLANK