

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305205F Endurance Unmanned Aerial Vehicles

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	210,270	346,713	398,631	340,202	220,102	246,442	249,920	253,332	0	TBD
4755 Predator	3,721	14,502	41,017	40,181	27,453	19,486	19,703	19,970	0	TBD
4799 Global Hawk	204,275	332,211	357,614	300,021	192,649	226,956	230,217	233,362	0	TBD
4883 JTC/SIL MUSE	2,274	0	0	0	0	0	0	0	0	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	47,548

1. In FY02, Predator received \$191.6M as part of the Defense Emergency Relief Fund (DERF). Funding was used to outfit Predator with the Multi-spectral Targeting System (MTS) laser designator/sensor turret and Hellfire missile launch capability, provide enabling improvements, purchase four additional Predator aircraft, and purchase three Predator B aircraft in support of operation Enduring Freedom. This funding is not reflected in the FY02 program total.

2. The Global Hawk program also received \$104.0M in FY02 as part of the Defense Emergency Response Fund (DERF). Funding was used for initial preparation, deployment and sustainment of the Global Hawk system, to cover operations, and accelerate delivery of sensors, and to develop and integrate a SIGINT sensor capability, in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.

(U) **A. Mission Description**

Endurance Unmanned Aerial Vehicles (UAVs) are a family of unmanned vehicles developed to provide all-weather, day/night, intelligence, surveillance and reconnaissance (ISR) in direct support of theater ISR collection requirements; and integrate with existing ISR architectures for mission planning, data processing, exploitation and dissemination.

The MQ-1 Predator UAV is a long-dwell, autonomous, unmanned reconnaissance system capable of operating over-the-horizon while providing real-time intelligence information to the Joint Task Force Commander. The air vehicle (A/V) carries electro-optical (EO), Infra-Red (IR) and synthetic aperture radar (SAR), and is capable of transmitting near real time imagery to the task force commander throughout the operational theater. All Predator aircraft are being produced with the Multi-spectral Targeting System (MTS) (a sensor turret that incorporates EO/IR, laser designator/range-finder, and IR illuminator), plus the capability to employ Hellfire laser-guided missiles.

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The MQ-9 Predator B is a multi-role UAV, larger than the MQ-1 and will be capable of flying at higher speeds and altitudes. The aircraft will primarily function in a hunter-killer role, employing fused multi-spectral sensors to find, fix, and track ground targets and assess post-strike results. It is in continuing development and will field capability through evolving spirals. The first spiral is the flight characterization evaluation of the original off-the-shelf, proto-type aircraft (Spiral 0). Spiral 1 integrates, tests, and demonstrates the ability to deliver Hellfire laser-guided missiles. Spiral 2 increases the aircraft's gross take-off weight, integrate redundant avionics, a digital electronically controlled engine, sensor/stores management computer, MIL-STD-1760 advanced weapons data bus, and improved the human-machine interface.

The RQ-4A Global Hawk is a high-altitude endurance (HAE) UAV, which provides long-range, persistent, theater-level ISR coverage. Predator B and Global Hawk will be integrated into Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures, national and international airspace systems, and Service Joint-component combat environments.

(U) B. Budget Activity Justification

This program is 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.

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	190,237	309,743	354,679	TBD
(U) Appropriated Value	197,737	352,743		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,955	-3,897		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram	23,000			
d. Below Threshold Reprogram	-7,534	-2,133		
e. Rescissions	-978			
(U) Adjustments to Budget Years Since FY 2003 PBR			43,952	
(U) Current Budget Submit/FY 2004 PBR	210,270	346,713	398,631	TBD

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0305205F Endurance Unmanned Aerial Vehicles(U) **C. Program Change Summary (\$ in Thousands) Continued**(U) **Significant Program Changes:**

The December 2002 Interim Program Review (IPR) rebaselined the Global Hawk transformation program, which accelerates delivery of this ISR capability to the warfighter.

Global Hawk received \$104.0M in FY02 as part of the Defense Emergency Response Fund (DERF) to support OPERATION ENDURING FREEDOM. This was used to cover preparation and deployment of the Global Hawk system, accelerate delivery of sensors, and develop and integrate a SIGINT sensor capability. This funding is not reflected in the FY02 program total.

Adjustment to FY04 budget since FY03 PBR due to addition of funds for Predator B spiral development.

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PE NUMBER AND TITLE

0305205F Endurance Unmanned Aerial Vehicles

PROJECT

4755

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4755 Predator	3,721	14,502	41,017	40,181	27,453	19,486	19,703	19,970	0	TBD

In FY02, Predator received \$208.4M as part of the Defense Emergency Relief Fund (DERF). Funding was used to outfit Predator with the Multi-spectral Targeting System (MTS) laser designator/sensor turret and Hellfire missile launch capability, provide enabling improvements, purchase four additional Predator aircraft, purchase 10 Lynx SARs, and purchase three Predator B aircraft in support of operation Enduring Freedom. None of this funding is reflected in the FY02 program total.

(U) A. Mission Description

The Predator program includes RQ/MQ-1 and MQ-9 unmanned aerial vehicles (UAVs), mobile and fixed Ground Control Stations (GCS), and associated communications and support equipment.

The RQ/MQ-1 Predator Unmanned Aerial Vehicle is a long dwell reconnaissance system capable of surveillance of critical targets at a range of 400 nm from the launch area. Predator is equipped with Electro-Optical/Infrared (EO/IR) and Synthetic Aperture Radar (SAR) sensors. The entire fleet is being fitted with Multi-spectral Targeting System (MTS) sensors capable of laser target designation and illumination. Additionally all aircraft will be modified to allow HELLFIRE laser-guided missile employment. Predator incorporates line-of-sight (LOS) and wide-band Ku-band SATCOM datalinks capable of providing near-real-time (NRT) transmission of high resolution imagery throughout the operational envelope. As Predator moves into its multi-mission role, the Air Force will continue experiments to expand roles, missions, sensors, and new weapons capabilities to leverage its battlefield persistence.

The MQ-9 is currently in flight test and will continue its development as a hunter-killer, Reconnaissance, Surveillance, and Target Acquisition (RSTA) asset. Two aircraft were procured as they were configured from the contractor (Spiral 0). The Air Force is currently defining the full operational configuration for Predator B and will spirally develop the system to meet our requirements. Spiral 1 increases takeoff gross weight, adds redundant avionics, advanced digital sensors, wing hard points for weapons, and delivers a capability to deliver HELLFIRE laser-guided missiles. Spiral 2 will integrate advanced weapons and update the human-machine interface. Subsequent spirals will develop follow-on sensors/payloads and update GCS and associated communications equipment.

Budget Activity Justification: This program is 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.

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PE NUMBER AND TITLE

PROJECT

07 - Operational System Development**0305205F Endurance Unmanned Aerial Vehicles****4755**(U) **A. Mission Description Continued**(U) **FY 2002 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$2,371 Pre-planned Product Improvement (To include: Advanced capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation, continuing developmental testing for tactical common datalink [TCDL] integration)

(U) \$350 System concept studies

(U) \$500 Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability

(U) \$450 Development and Operational Test

(U) \$50 Field support

(U) \$3,721 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$2,396 Pre-planned Product Improvement (To include: Advanced capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation)

(U) \$8,731 MQ-9 Spiral development (aircraft improvements, development and integration of follow-on sensors, weapons and payloads, and associated communications equipment)

(U) \$2,000 Predator View situational awareness/mission planning system

(U) \$375 System concept studies

(U) \$500 Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability

(U) \$450 Development and Operational Test

(U) \$50 Field support

(U) \$14,502 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$3,000 MQ-1 Pre-planned Product Improvement (To include: Advanced capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation, continuing developmental testing for TCDL integration, and associated communications equipment.

(U) \$28,000 MQ-9 spiral development (aircraft improvements, development and integration of follow-on sensors, weapons and payloads, and associated

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0305205F Endurance Unmanned Aerial Vehicles

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(U) **A. Mission Description Continued**(U) **FY 2004 (\$ in Thousands) Continued**

(U) communications equipment)

(U) \$4,204 Continue a reliability and maintainability program to ensure the continued viability of the MQ-1/MQ-9 air vehicle, ground control station, and associated communications equipment.

(U) \$1,000 System Concept Studies

(U) \$3,813 Developmental and Operational Test

(U) \$1,000 Field support

(U) \$41,017 Total

(U) **B. Project Change Summary**

Not Applicable.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement, AF (PE 35205F), Predator	89,876	129,534	196,369	197,854	225,020	118,136	139,866	244,766		1,341,421
(U) Aircraft Modification, AF (PE 35205F)	14,813	10,145	14,178	19,189	27,293	27,541	28,291	28,764		TBD
(U) Aircraft Initial Spares, AF (PE 35205F)	504	8,497	377	406	470	472	484	492		TBD

(U) **D. Acquisition Strategy**

Both the MQ-1 Predator and MQ-9 Predator B will be acquired through the BIG SAFARI Program Office. MQ-1 Predator is in accelerated production with ISR sensors, laser designators, and weapon delivery capability. MQ-9 Predator B will be acquired as a 'Hunter Killer' system through a series of spirals to rapidly deliver combat capability. Each spiral will build on the delivered capability from the previous spirals and will include advanced sensor capabilities and evolving weapon payloads. Prime contractor for both aircraft is General Atomics Aeronautical Systems Inc.

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(U) E. Schedule Profile

<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>				
1	2	3	4	1	2	3	4	1	2	3	4			
					*									
					X									
							X							

(U) Delivery of first production weaponized MQ-1

(U) MQ-9 Spiral 0 Complete

(U) MQ-9 Spiral 1 Demonstration

* denotes completed event

X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305205F Endurance Unmanned Aerial Vehicles				4755	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
							<u>FY 2002</u>		<u>FY 2003</u>	<u>FY 2004</u>
(U)	Hardware/Software						2,371		9,127	16,191
(U)	Demonstrations and test						450		450	2,700
(U)	System integration and engineering support						400		4,425	21,376
(U)	Other technical/engineering						500		500	750
(U)	Total						3,721		14,502	41,017
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
	<u>Contractor or</u>	<u>Contract</u>								
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>					
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	General Atomics	SS/CPFF	Apr 98	N/A	N/A	9,692	2,771	13,552	37,567	Continuing
	PM TESAR			N/A	N/A	2,300				Continuing
	<u>Support and Management Organizations</u>									
	ASC					0	500	500	750	Continuing
	AD/NAVAIR					320				Continuing
	<u>Test and Evaluation Organizations</u>									
	AFOTEC					795	200	200	1,000	Continuing
	Misc					330	250	250	1,700	Continuing
(U) <u>Government Furnished Property:</u>										
		<u>Contract</u>								
		<u>Method/Type</u>	<u>Award or</u>							
	<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Property</u>									
	<u>Support and Management Property</u>									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0305205F Endurance Unmanned Aerial Vehicles			4755	
(U) <u>Government Furnished Property Continued:</u>						
<u>Test and Evaluation Property</u>						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	11,992	2,771	13,552	37,567	TBD
	Subtotal Support and Management	320	500	500	750	TBD
	Subtotal Test and Evaluation	1,125	450	450	2,700	TBD
	Total Project	13,437	3,721	14,502	41,017	TBD

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0305205F Endurance Unmanned Aerial Vehicles

PROJECT

4799

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4799 Global Hawk	204,275	332,211	357,614	300,021	192,649	226,956	230,217	233,362	0	TBD

1. In FY02 the Global Hawk program received \$104.0M as part of the Defense Emergency Response Fund (DERF) to support OPERATION ENDURING FREEDOM. Funding was used to cover initial preparation for deployment and sustainment of the Global Hawk system, to accelerate delivery of sensors and to develop and integrate a SIGINT sensor capability. This funding is not reflected in the FY02 program total.

(U) **A. Mission Description**

The Global Hawk Program consists of the RQ-4A Unmanned Aerial Vehicle (UAV), the AN/MSQ-131 Ground Segment (GS), and the Support System. The Global Hawk System is designed to provide continuous, all-weather, day/night, wide area intelligence, surveillance and reconnaissance (ISR) and includes the interfaces with other theater systems required to support joint tactical warfighters at various levels of command. The aircraft is an autonomous, high altitude, long endurance unmanned aircraft designed as an ISR platform. The Air Force has initiated Engineering and Manufacturing Development (EMD), using a spiral approach to incorporate improvements to the aircraft, ground station, communication system, and payloads. The Air Force will integrate Global Hawk into Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture, national and international airspace systems, and service combat environments. To support this, Air Force will participate in demonstrations, exercises and conduct experiments with Global Hawk that will explore its use in other mission areas and activities.

In FY03 - FY09, Global Hawk will continue with spiral development efforts, including integration of signals intelligence (SIGINT) and its radar technology insertion program (RTIP) to enhance the design of the system to meet Operational Requirements Document (ORD) performance and capabilities.

This program is 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.

(U) **FY 2002 (\$ in Thousands)**

(U) \$0	ACCOMPLISHMENTS / PLANNED PROGRAM
(U) \$23,784	Complete Fabrication and integration of two additional ACTD aircraft (#6 & #7) (Phase IIC).
(U) \$113,044	Continue spiral development and related tasks, to include spiral development of aircraft, payloads, ground stations, and support infrastructure to satisfy ORD requirements.
(U) \$4,675	Provide government test and evaluation support at Edwards AFB
(U) \$9,592	Provide government program management and related support

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4799
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$90 Global Hawk / German ELINT flight demonstration</p> <p>(U) \$195 Demonstrations and exercises</p> <p>(U) \$16,000 Added to FY02 program per Congressional plus-up for integration and demonstration of High-Band SIGINT system on Global Hawk</p> <p>(U) \$13,895 OPERATION ENDURING FREEDOM support</p> <p>(U) \$23,000 Added to program in FY02 Supplemental for High-Band Subsystem (SIGINT) on Global Hawk</p> <p>(U) \$204,275 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 ACCOMPLISHMENTS / PLANNED PROGRAM</p> <p>(U) \$224,091 Continue spiral development and related tasks, to include spiral development of aircraft, payloads, ground stations, and support segment to satisfy ORD requirements.</p> <p>(U) \$6,870 Provide government test and evaluation support at Edwards AFB</p> <p>(U) \$8,250 Provide government program management, mission support, and other related costs.</p> <p>(U) \$3,000 Demonstrations and exercises</p> <p>(U) \$90,000 Added to FY03 program per Congressional plus-up for Advanced Payload Development and Support (\$84,000 *), Global Hawk Producibility Initiatives (\$5,000), and Global Hawk Lithium Batteries (\$1,000).</p> <p>(U) \$332,211 Total</p> <p style="padding-left: 20px;">* In FY03 \$66.0M continues advanced SIGINT payload modernization for the Global Hawk and U-2 and \$18M continues IMINT payload modernization, of which \$15.775M is a transfer from PE 0305206F, project 4818, Imaging and Targeting Support..</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 ACCOMPLISHMENTS / PLANNED PROGRAM</p> <p>(U) \$234,111 Continue spiral development and related tasks, including aircraft (\$100M), payloads (\$42M), ground stations (\$11M), support segment (\$25M), program management, test and systems engineering (\$56M) to satisfy ORD requirements.</p> <p>(U) \$9,138 Provide government test and evaluation support at Edwards AFB</p> <p>(U) \$8,065 Provide government program management, mission support, and other related costs.</p> <p>(U) \$5,000 Demonstrations and exercises</p> <p>(U) \$31,500 MP-RTIP sensor adaptation</p> <p>(U) \$69,800 Continue advanced SIGINT payload modernization for Global Hawk and U-2 (Global Hawk SIGINT platform integration is in Spiral 3 and</p>		
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PROJECT

4799(U) **A. Mission Description Continued**(U) **FY 2004 (\$ in Thousands) Continued**

platform integration for U-2 is in the U-2 PE, 0305202F).

(U) \$357,614 Total

(U) **B. Project Change Summary**

- NOT APPLICABLE -

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	204,275	332,211	357,614	300,021	192,649	226,956	230,217	233,362		TBD
(U) Other APPN										
(U) AF MILCON		11,682	22,300	24,186						TBD
(U) AF O&M	10,755	11,763	13,338	22,082	21,229	94,114	96,716	97,943		TBD
(U) AF MILPERS	1,031	5,439	12,138	19,629	24,895	30,084	36,326	39,742		TBD
(U) Aircraft Procurement, APPN	162,256	165,593	252,912	303,167	474,636	538,758	463,629	389,411		TBD
10 AF (HAE UAV)										
(U) Aircraft Procurement APPN						9,419	9,675	9,841		TBD
11 AF (HAE UAV)										
(U) Other Procurement, 3080		856	193	288	286					TBD
(HAE UAV)										

All Other Program Funding is within PE 305205F.

(U) **D. Acquisition Strategy**

Northrop Grumman Ryan Aeronautical Center (NG-RAC) was competitively selected for the design/development effort, at the beginning of the ACTD.

Global Hawk will utilize a 'spiral development' approach to production; incrementally adding new technology as it becomes available, to more rapidly provide a technologically superior system to the warfighter.

EMD contracts will comply with FAR-based rules using a Cost-Plus Award Fee (CPAF) type contract.

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(U) E. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Award EMD System Spiral 2 Contract		*										
(U) Delivery of aircraft #6			*									
(U) Pre-EMD Development Complete					*							
(U) Delivery of aircraft #7						X						
(U) Canadian Overflight								X				
(U) Global Hawk SOUTHCOM demo						X						
(U) Start EMD System Testing						X						
(U) Award EMD Spiral 3 contract						X						
(U) Global Hawk/German ELINT Flight Demonstration							X					
(U) Delivery of AF1 (First AF production aircraft)								X				
(U) EMD Spiral 1 Complete									X			
(U) Delivery of AF2									X			
(U) Award EMD Spiral 4 contract										X		
(U) Operational Assessment												X
* denotes completed event												
X denotes planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development					0305205F Endurance Unmanned Aerial Vehicles				4799		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		
(U) Complete Fabrication and Integration of aircraft #6 and #7 (Phase IIC)					23,784		0		0		
(U) Continue Spiral Development, and Related Tasks					113,044		224,091		234,111		
(U) -- Includes spiral development of aircraft, payloads, ground stations and support segment and other capabilities which will satisfy ORD requirements.											
(U) Provide Government Test and Evaluation Support at Edwards AFB					4,675		6,870		9,138		
(U) Government Program Management and Mission Support					9,592		8,250		8,065		
(U) Demonstrations/Exercises					195		3,000		5,000		
(U) Global Hawk/German ELINT Flight Demonstration					90		0		0		
(U) Integration/Demonstration of High-Band Subsystem (SIGINT)					16,000		0		0		
(U) OPERATION ENDURING FREEDOM Support					13,895		0		0		
(U) FY02 Supplemental High-Band Subsystem (SIGINT) for Global Hawk					23,000		0		0		
(U) MP-RTIP Sensor Adaptation (platform integration efforts are in Spiral 4)					0		0		31,500		
(U) Added to FY03 program per Congressional plus-up for Global Hawk SIGINT (\$5M transferred from DERF), Advanced Payload Development and Support (\$84M), Global Hawk Producibility Initiatives (\$5M), and Global Hawk Lithium Batteries (\$1M)					0		90,000		0		
(U) Continues advanced SIGINT Payload Development, program management, and other related support tasks for Global Hawk and U-2. (Global Hawk SIGINT platform integration is in Spiral 3 and platform integration for the U-2 is in the U-2 PE.					0		0		69,800		
(U) Total					204,275		332,211		357,614		
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
<u>Contractor or</u>		<u>Contract</u>									
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>			
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		<u>Total Prior</u>	
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2002</u>	
								<u>Budget</u>		<u>Budget</u>	
								<u>FY 2002</u>		<u>FY 2003</u>	
								<u>FY 2004</u>		<u>Budget to</u>	
								<u>Complete</u>		<u>Total</u>	
										<u>Program</u>	
Project 4799											
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Exhibit R-3 (PE 0305205F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305205F Endurance Unmanned Aerial Vehicles				4799		
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
NGRAC (aircraft)		CPAF/IF	N/A	N/A	262,992	137,716	228,034	248,444	Continuing	TBD
NG/TRW (ASIP dev.)					28,000	48,200	56,300	35,200	Continuing	TBD
ESC (RTIP sensor integration)					0	0	11,000	31,500	Continuing	TBD
<u>Support and Management Organizations</u>										
Various			N/A	N/A	12,088	10,714	17,110	21,800	Continuing	TBD
Support ASC					1,605	2,275	3,267	5,970	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFFTC			N/A	N/A	12,982	4,000	7,735	8,827	Continuing	TBD
AFOTEC			N/A	N/A	1,621	200	425	485	Continuing	TBD
JITC			N/A	N/A	250	175	340	388	Continuing	TBD
Various			N/A	N/A	12,937	995	8,000	5,000	Continuing	TBD
(U) <u>Government Furnished Property:</u>										
		<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</u>										
<u>Subtotals</u>					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					290,992	185,916	295,334	315,144	TBD	TBD
Subtotal Support and Management					13,693	12,989	20,377	27,770	TBD	TBD
Subtotal Test and Evaluation					27,790	5,370	16,500	14,700	TBD	TBD
Total Project					332,475	204,275	332,211	357,614	TBD	TBD
Project 4799										
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Project 4799

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305205F Endurance Unmanned Aerial Vehicles

PROJECT

4883

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4883 JTC/SIL MUSE	2,274	0	0	0	0	0	0	0	0	TBD

For FY03 data see PE 0308601F, Modeling and Simulation Support, and for FY04 data see PE 0305206F, Imaging and Targeting Support (I&TS), project 675092, JTC/SIL MUSE. The project was transferred to the I&TS PE to better align it with other JMIP programs and dollars.

A separate project code within PE 0305205F provides visibility of the funds supporting the JTC/SIL MUSE through FY02. The remainder of the funding for this project has been transferred to the Modeling and Simulation PE.

(U) **A. Mission Description**

The Joint Technology Center/System Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) provides and develops simulations of UAVs, their tactical and strategic reconnaissance uses and how their imagery products are used in the DoD reconnaissance system. These simulations are applied for the development of the Army's tactical UAV (TUAV), the Navy's vertical takeoff UAV (VTUAV), Air Force's Predator medium altitude endurance UAV (EUAV) and the Air Force's Global Hawk high altitude EUAV.

(U) **FY 2002 (\$ in Thousands)**

(U) \$2,274 JTC/SIL MUSE

(U) \$2,274 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

See PE 0308601F for FY03 data

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

See PE 0305206 for FY04 data

(U) **B. Project Change Summary**

Not Applicable

Project 4883

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

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BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

07 - Operational System Development

0305205F Endurance Unmanned Aerial Vehicles

4883

(U) C. Other Program Funding Summary (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	0	0	0	0	0	0			0	0
(U) Other APPN	0	0	0	0	0	0			0	0

(U) D. Acquisition Strategy

N/A

(U) E. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Activity TBD												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003																																																																																																																																																																		
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07 - Operational System Development			0305205F Endurance Unmanned Aerial Vehicles		4883	
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
<u>Subtotals</u>						
Subtotal Product Development				2,274		TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project				2,274		TBD

Project 4883

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