

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	76,238	126,047	190,237	118,835	182,807	182,883	136,821	84,235	Continuing	TBD
4755 Predator	3,891	3,662	3,782	3,860	3,943	4,024	4,109	4,195	Continuing	TBD
4799 Global Hawk	72,347	120,106	184,155	112,975	176,864	176,859	130,712	78,040	Continuing	TBD
4883 JTC/SIL MUSE	0	2,279	2,300	2,000	2,000	2,000	2,000	2,000	0	53,783
Quantity of RDT&E Articles	0	2	0	0	0	0	0	0	0	47,548

Note: FY03-07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**
 Endurance Unmanned Aerial Vehicles (UAVs) are a family of unmanned vehicles developed to provide all-weather, day/night, reconnaissance and surveillance in direct support of theater collection requirements; and integrate with existing airborne reconnaissance architectures for mission planning, data processing, exploitation and dissemination. The RQ-1 Predator UAV was initiated as an Advanced Concept Technology Demonstration (ACTD) which completed in FY96. The RQ-4A Global Hawk is a high-altitude endurance (HAE) UAV that was also initiated as an ACTD, completing in FY00. The Global Hawk deployed to Australia April - June FY01 for a Combined Exercise with the Australians and USPACOM. The Global Hawk program transitioned to a 'normal' acquisition program with an Acquisition Decision Memorandum (ADM) on 6 Mar 01. In the near term, the Air Force has initiated engineering, manufacturing and development with Global Hawk to operationalize the system. Future spiral development will evolve the Global Hawk to carry U-2 parity imagery and SIGINT sensor capabilities. Both Predator and Global Hawk are 'Pathfinding' systems for future UAV operational concepts. Both systems 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 and provide essential operational capabilities.

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BUDGET ACTIVITY

07 - Operational System Development

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0305205F Endurance Unmanned Aerial Vehicles

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

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	77,866	109,215	70,106	TBD
(U) Appropriated Value	79,800	127,215		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,506			
b. Small Business Innovative Research	-354			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-1,390			
e. Rescissions	-312	-1,168		
(U) Adjustments to Budget Years Since FY 2001 PBR			120,131	
(U) Current Budget Submit/FY 2002 PBR	76,238	126,047	190,237	TBD

(U) Significant Program Changes:

In FY02, OSD \$103M (\$81.8M RDT&E and \$21.2M Procurement) was added for the acceleration of development of the engine and electrical power supplies and sensors, and the advance procurement for FY2003 air vehicles.

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0305205F Endurance Unmanned Aerial Vehicles

PROJECT

4755

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4755 Predator	3,891	3,662	3,782	3,860	3,943	4,024	4,109	4,195	Continuing	TBD

(U) **A. Mission Description**

The Predator unmanned aerial vehicle (UAV) is capable of sustained (long dwell) surveillance of critical targets, under most weather conditions, at a range of 500 nm from the launch area. Twelve Predator systems are being procured (each system consists of four air vehicles, one ground control station, and one Predator primary satellite link). The Predator is equipped with Electro-Optical/Infrared (EO/IR) and Synthetic Aperture Radar (SAR) sensors. Predator also 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. The system supports the theater commander and interfaces with the Command, Control, Communication, Computer and Intelligence (C4I) architecture. The first five Predator systems were procured either from an Advanced Concept Technology Demonstration or in an interim configuration. Beginning with the sixth system, Predators are in a Baseline configuration, with upgrades including de-icing, UHF/VHF voice relay, and IFF Mode IV. IR sensor improvements, growth payloads, work station upgrades and reliability and maintainability improvements are being considered. UAV Common Automatic Recovery System (UCARS) has been added by Congress. As a result of a combat mission need statement (C-MNS) generated during ALLIED FORCE operations in Kosovo, one Predator system was outfitted with a temporary laser designator for use with precision guided munitions. Congress added production funds in FY00 for laser/EO/IR capable turret. In addition, Air Force funded the procurement of a permanent laser designator for use with precision guided munitions in FY02. As the first operational UAV in the Air Force, Predator will be the test platform to examine advanced capabilities, to include weaponization. The Air Force will continue experiments with Predator and expand into other roles and missions where UAVs can be used to leverage their 'risk mitigating' potential.

(U) **FY 2000 (\$ in Thousands)**

(U) \$800	Conduct OT&E/developmental testing of Block I improvements
(U) \$2,750	Block I improvements (IR sensor improvements, growth payloads, work station upgrades, reliability and maintainability improvements)
(U) \$341	Field support (increased level of support to prepare for formal OT&E)
(U) \$3,891	Total

(U) **FY 2001 (\$ in Thousands)**

(U) \$200	OT&E
(U) \$200	Conduct developmental testing for TCDL
(U) \$2,716	Complete TCDL integration
(U) \$500	Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability
(U) \$46	Field support

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PROJECT

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(U) **A. Mission Description Continued**(U) FY 2001 (\$ in Thousands) Continued

(U) \$3,662 Total

(U) FY 2002 (\$ in Thousands)

(U) \$2,432 Pre-planned Product Improvement (To include: Advance capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation)

(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) \$3,782 Total

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

Delay in OT&E required realignment of funds allocated for testing. TCDL integration accelerated to enable operations in Korea as soon as possible, as directed by Congress in FY00.

FY00 received \$900K BTR funds to support Predator Weaponization New Start.

\$1M in FY01 funding approved for TCDL was redirected toward Predator weaponization test and demonstration. Congressional notification has been provided by correspondence and briefings to all applicable Congressional Intelligence and Defense committees.

FY01 received \$1.6M BTR funds to support the completion of the Phase II weaponization demo of the Predator Demo Program.

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

	<u>FY 2000</u>	<u>FY 2001</u>	<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>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	57,369	31,785	19,632	23,428	24,187	28,090	32,005	32,793	Continuing	Continuing

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

	<u>FY 2000</u>	<u>FY 2001</u>	<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>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) Aircraft Modification, AF (PE 35205F), Predator aircraft modification funds add a permanent laser designator			10,384	10,697	10,893	11,104	11,419	11,634	Continuing	TBD

(U) **D. Acquisition Strategy**

Predator is in full scale production. Twelve systems plus attrition air vehicles are being acquired with the prime contractor, General Atomics Aeronautical Systems Inc. They also are assigned total system performance responsibility (TSPR). With the exceptions of the Tactical Endurance Synthetic Aperture Radar and the Ku-band Predator primary satellite link, which are being procured as GFE, all procurement of Predator systems will be through General Atomics. Program transitioned from interim contractor logistics support (ICS) to contractor logistics support (CLS) in FY00. Normalization of logistics support to balance CLS and organic support is underway.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Delivery of first Baseline system			*									
(U) OT&E					*							
(U) Retrofit of ACTD Systems complete												X

* denotes completed event
X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
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 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Hardware/Software				1,342		2,041		2,432	
(U)	Demonstrations and test				950		500		500	
(U)	System integration and engineering support				1,179		696		350	
(U)	Other technical/engineering				420		425		500	
(U)	Total				3,891		3,662		3,782	
(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>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
General Atomics		SS/CPFF	Apr 98	N/A	N/A	9,692	2,865	3,037	2,982	Continuing
PM TESAR				N/A	N/A	2,300				0
<u>Support and Management Organizations</u>										
ASC						0	426	425	500	Continuing
AD/NAVAIR						320				0
<u>Test and Evaluation Organizations</u>										
AFOTEC						795	600	200	300	0
Misc						330				0
(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 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</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 June 2001	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
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(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>Total</u>
<u>Subtotals</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Program</u>
Subtotal Product Development		11,992	2,865	3,037	2,982	TBD
Subtotal Support and Management		320	426	425	500	TBD
Subtotal Test and Evaluation		1,125	600	200	300	2,225
Total Project		13,437	3,891	3,662	3,782	TBD

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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4799 Global Hawk	72,347	120,106	184,155	112,975	176,864	176,859	130,712	78,040	Continuing	TBD	
FY03-07 budget numbers do not reflect the DoD strategic review results. (U) <u>A. Mission Description</u> 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 surveillance and reconnaissance and includes the communications and interfaces with other theater systems required to support joint tactical warfighters at various levels of command. The Global Hawk is a fully autonomous, high-altitude, long endurance unmanned aircraft that is directly responsive to theater tasking. Global Hawk will integrate with the existing tactical airborne reconnaissance architectures for tasking, mission planning, data processing, exploitation, and dissemination. The UAV is designed as a standoff imagery platform with the capability to operate within low-to-moderate air defense threat areas. In the near term, the Air Force has initiated engineering, manufacturing and development (EMD) will initiate upgrades to Global Hawk to operationalize the system. Future spiral development will evolve the system to parity with U-2 imagery and SIGINT sensor capabilities. 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 conduct experiments with Global Hawk that explore its use in other mission areas and activities. In FY00, Global Hawk finished user demonstrations in June 00, and completed the Military Utility Assessment (MUA) with a result of 'Significant Military Utility'. Congress added \$15M to the Global Hawk funding line in FY00 and authorized procurement of two more ACTD air vehicles, to preserve the Global Hawk industrial base. In FY01, Global Hawk acquisition was approved by a Defense Acquisition Board (DAB), 16 Feb 01, and an Acquisition Decision Memorandum (ADM) signed 6 Mar 01. The approved program included spiral development, EMD, Low-Rate Initial Production (LRIP), and associated advanced procurement and logistics support for the LRIP systems. (U) <u>FY 2000 (\$ in Thousands)</u> (U) \$30,279 Provide Contractor and Government Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III) (U) \$2,200 Integrated Logistic Support (U) \$58 Complete Fabrication and Integration of air vehicles #3, #4, and #5 (Phase IIB) (U) \$15,000 Added \$15M to FY00 program per Congressional plus-up for the following:											
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(U) <u>A. Mission Description Continued</u> (U) <u>FY 2000 (\$ in Thousands) Continued</u> -- Begin ACTD air vehicle #6 & #7 fabrication -- Preparation for transition to EMD in FY01 to address operability, supportability and safety deficiencies identified during the ACTD (ACTD Transition Activities). (U) \$9,491 Additional funds spent for Fabrication and Integration of air vehicles #6 and #7 (Phase IIC) and ACTD Transition Activities (U) \$12,228 Added to program per consolidation of the GS and Global Hawk into same BPAC: -- Development and test of demonstration GS -- Contractor participation in MUA -- Government support, studies and related tasks for the GS (U) \$3,091 Government Support, Studies and Related Tasks for the Global Hawk Program (U) \$72,347 Total (U) <u>FY 2001 (\$ in Thousands)</u> (U) \$1,769 Provide Contractor and Government Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III) (U) \$31,945 Fabrication and Integration of 2 additional air vehicles for EMD (#6 and #7) (Phase IIC) (U) \$43,156 Non-recurring Engineering (NRE) to evolve the Global Hawk to a Spiral 1 configuration -- Includes spiral development of sensors and other capabilities -- Spiral development (Spiral 1 to Spiral 2) of air vehicles which will satisfy needs identified in the MUA and ORD (U) \$9,000 Operational Demonstration in Australia (total cost of \$10M remains unchanged - NATO R&D funds and the CDL program provided the other \$1M in support of this effort) (U) \$6,160 Provide Government Test and Evaluation Support (U) \$10,076 Government Support, Studies and Related Tasks for the Global Hawk Program (U) \$18,000 Added \$18M to FY01 program per Congressional plus-up for the following: -- additional EO/IR sensors -- development of a dual-band capability and precision target location (U) \$120,106 Total The following net transactions are not reflected in the FY01 program total: BTR \$-2M. These transactions are not reflected in the other sections of the R-Docs where an FY01 total is shown.		
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

(U) \$21,133	Complete Fabrication and Integration of 2 additional ACTD air vehicles for EMD (#6 and #7) (Phase IIC)
(U) \$136,322	Continue Spiral Development
	-- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA and ORD and emerging requirements
(U) \$8,200	Provide Government Test and Evaluation Support
(U) \$10,500	Government Support, Studies and Related Tasks for the Global Hawk Program
(U) \$5,000	Operational Demonstration in Germany
(U) \$3,000	Demonstrations/Exercises
(U) \$184,155	Total

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

Intelligence Program Decision Memorandum (IPDM) I, issued on 20 Aug 99, directed the Air Force to initiate an acquisition program with a MSII decision at the end of FY00, buy two EMD air vehicles in FY01, and begin production of air vehicles in FY02.

September 00 IPDM directed an increase of \$3M in FY02 to increase flying hours for the Global Hawk residual assets in support of the commands, to approximately 300 hours per year (Demonstrations/Exercises).

In response to concerns about preserving the Global Hawk industrial base, Congress added \$15M to the program in FY00 and added language authorizing the purchase of two additional air vehicles for EMD. The Congressional add was used to begin fabrication of these two air vehicles and to begin preparations for EMD (ACTD transition activities).

The Defense Acquisition Board (DAB) met on 16 Feb 01 to consider a Milestone II decision to transition Global Hawk from an Advanced Concept Technology Demonstration to Engineering and Manufacturing Development (EMD) and Low-Rate Initial Production (LRIP). On 6 Mar 01, USD/AT&L approved the Global Hawk Acquisition Decision Memorandum (ADM) and designated Global Hawk as an Acquisition Category ACAT ID Major Defense Acquisition Program. The ADM approved 1) Global Hawk to enter into EMD for Block 5 and for the spiral development of Block 10 Global Hawk; 2) the Acquisition Strategy and Acquisition Program Baseline (APB); 3) Low Rate Initial Production (LRIP) and 4) associated advanced procurement and logistics support for the LRIP systems

The FY01 Appropriations Conference added \$18M in FY01 to purchase replacement EO/IR sensors for the ACTD air vehicles, develop a dual-band capability, and

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

precision target location.

The FY01 Authorizations Conference added \$18M in FY01 to support the Global Hawk SOUTHCOM Counter Drug Demonstration. Funds were reprogrammed from Drug Interdiction and Counter-Drug Activities to the Research, Development, Test, and Evaluation, Air Force Budget Activity 7, Operational System Development, and remain in PE 0208889F, BPAC 675002 for Global Hawk execution. (Reference OSD Reprogramming Action FY01-25IR in accordance with Form 440 01/02-25). As of Jun 01, the Program Office has received \$17M of the \$18M authorized by the Conference.

In FY02, OSD \$103M (\$81.8M RDT&E and \$21.2M Procurement) was added for the acceleration of development of the engine and electrical power supplies and sensors, and the advance procurement for FY2003 air vehicles.

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

	<u>FY 2000</u>	<u>FY 2001</u>	<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>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	72,297	120,106	184,155	112,975	176,864	176,859	130,712	78,040		TBD
(U) Other APPN										
(U) AF MILCON					10,000	10,000				
(U) AF O&M			3,985	28,887	42,134	47,343	46,766	60,654		
(U) AF MILPERS			1,053	5,246	12,833	20,557	26,370	32,109		
(U) Aircraft Procurement, APPN	0	22,183	118,927	106,710	99,315	112,227	105,816	158,733		
10 AF (HAE UAV)*										
(U) Other Procurement, APPN				700						
16 AF (HAE UAV)										

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

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(U) **D. Acquisition Strategy**

The Global Hawk Program began as an ACTD under DARPA in 1994. Of the fourteen original contractor teams, five were selected to submit design proposals, with Northrop Grumman Ryan Aeronautical Center (NG-RAC), formerly Teledyne Ryan Aeronautical (TRA), competitively selected for the design/development effort. Under the development phase of the agreement, the contractor built and tested five Global Hawk air vehicles, and a developmental ground segment. Streamlined procurement, using Other Transaction Authority (OTA), is being used to avoid all non value-added tasks and documentation from the program, minimize cost and provide flexibility.

An acquisition decision in Mar 01, followed delivery of the Military Utility Assessment from JFCOM. ACTD transition activities, fabrication of air vehicles #6 and #7, support of the overseas demonstration in Australia and Congressionally directed demonstrations and tasks, will complete under the current ACTD OTA agreement.

Based on the ADM, dated 6 Mar 01, the DAB Milestone II decision transitions Global Hawk from an Advanced Concept Technology Demonstration to Engineering and Manufacturing Development (EMD) and Low-Rate Initial Production (LRIP). The EMD program consists of a total Global Hawk System which includes the GS. This will evolve Global Hawk to enter EMD for Block 5 and for spiral development to Block 10 capability to meet full ORD requirements, including improvements to sensors and subsystems. Contracts starting in FY01 will be under FAR-based rules. EMD will be a Cost-Plus Award Fee (CPAF) type contract, while LRIP will be a Fixed-Price Incentive (FPI).

In FY02, additional funding was budgeted to accelerate spiral development of the GH program.

In FY02, the program will also commence Low Rate Initial Production (LRIP) of Block 5 air vehicles. During this time period, the program may include on its Block 5 production vehicles any Spiral Development capabilities available for acceleration during EMD.

(U) **E. Schedule Profile**

	<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Military Utility Assessment Report				*										
(U) ACTD ends						*								
(U) Milestone II Decision						*								
(U) Start of EMD Program						*								
(U) Australian Demonstration							*							
(U) Delivery of air vehicle #6										X				
(U) Delivery of air vehicle #7												X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)			DATE June 2001	
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 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U)	Fabrication and Integration of air vehicles #3, #4, and #5 (Phase IIB)	58		
(U)	Provide Contractor Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III)	17,758	1,769	
(U)	Provide Government Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment	12,521		
(U)	Fabrication and Integration of air vehicles #6 and #7 (Phase IIC)	12,650	31,945	21,133
(U)	Preparation for transition to EMD in FY01 to address operability, supportability and safety deficiencies identified during the ACTD (Spiral Development)	10,341		
(U)	Joint Technology Center system Integration Laboratory (JTC/SIL) MUSE (Multiple UAV Simulation Environment)	1,500		
(U)	Integrated Logistic Support	2,200		
(U)	Development of test of demonstration GS (part of the GS consolidation into the Global Hawk BPAC 674799)	1,675		
(U)	Contractor participation in MUA (part of the GS consolidation into the Global Hawk BPAC 674799)	5,962		
(U)	Government support, studies and related tasks for the GS (part of the GS consolidation into the Global Hawk BPAC 674799)	4,591		
(U)	Government Support, Studies and Related Tasks for the Global Hawk program	3,091	10,076	10,500
(U)	Operational Demonstration in Germany			5,000
(U)	Demonstrations/Exercises			3,000
(U)	Spiral Development - Non-recurring Engineering (NRE) to evolve the Global Hawk to Block 5 and Block 10 configurations:		43,156	136,322
(U)	-- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA, ORD, and emerging requirements			
(U)	Operational Demonstration in Australia		9,000	
(U)	Provide Government Test and Evaluation Support		6,160	8,200
(U)	EO/IR sensors, and development of dual-band capability and precision target location		18,000	
(U)	Total	72,347	120,106	184,155
Project 4799		Page 14 of 19 Pages		Exhibit R-3 (PE 0305205F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development				0305205F Endurance Unmanned Aerial Vehicles					4799	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<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>Activity</u>		<u>Vehicle</u>		<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
<u>Product Development Organizations</u>										
Ryan Aeronautical Center		SS/CPAF/IF			N/A	N/A	112,870	49,124	98,993	157,955
Raytheon		SS/CPAF/IF						180		
<u>Support and Management Organizations</u>										
Various					N/A	N/A	0	7,423	8,317	8,100
Support ASC								1,599	1,934	1,900
<u>Test and Evaluation Organizations</u>										
AFFTC					N/A	N/A	0	6,720	6,846	7,400
AFOTEC					N/A	N/A	0	1,500	780	800
JTC/SIL (MUSE)								1,500		
Various					N/A	N/A	0	4,301	3,236	8,000
							<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
<u>Subtotals</u>							<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Subtotal Product Development							112,870	49,304	98,993	157,955
Subtotal Support and Management							0	9,022	10,251	10,000
Subtotal Test and Evaluation							0	14,021	10,862	16,200
Total Project							112,870	72,347	120,106	184,155

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

DATE

June 2001

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305205F Endurance Unmanned Aerial Vehicles

PROJECT

4883

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4883 JTC/SIL MUSE	0	2,279	2,300	2,000	2,000	2,000	2,000	2,000	0	TBD

FY03-07 budget numbers do not reflect the DoD strategic review results.

(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 2000 (\$ in Thousands)**

(U) \$0

(U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**

(U) \$2,279 JTC/SIL MUSE

(U) \$2,279 Total

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

(U) \$2,300 JTC/SIL MUSE

(U) \$2,300 Total

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

A separate project code within PE 35205F provides visibility of the funds supporting the JTC/SIL MUSE. The level of future Air Force participation in this project beyond FY01 is the subject of on-going discussions between the Air Force and OSD.

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

	<u>FY 2000</u> <u>Actual</u>	<u>FY 2001</u> <u>Estimate</u>	<u>FY 2002</u> <u>Estimate</u>	<u>FY 2003</u> <u>Estimate</u>	<u>FY 2004</u> <u>Estimate</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) AF RDT&E	0	2,279	2,300	2,000	2,000	2,000	2,000	2,000	2,000	16,579
(U) Other APPN	0	0	0	0	0	0	0	0	0	0

Project 4883

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE June 2001	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0305205F Endurance Unmanned Aerial Vehicles					4883	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		
(U) No activity planned							2,279		2,300		
(U) Total							2,279		2,300		
(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>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
JTC/SIL MUSE							2,279	2,300	Continuing	TBD	
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
(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 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Property</u>											
None											
<u>Support and Management Property</u>											
None											
<u>Test and Evaluation Property</u>											
None											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0305205F Endurance Unmanned Aerial Vehicles			4883	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development				2,279	2,300	TBD
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						
Total Project				2,279	2,300	TBD

Project 4883

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Exhibit R-3 (PE 0305205F)

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