

UNCLASSIFIED

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

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

03 - Advanced Technology Development (ATD)

0603333F Unmanned Air Vehicle Dev/Demo

5067

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
5067 Unmanned Combat Air Vehicle Tech Demo	18,903	17,608	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: Beginning in FY 2002, ongoing Air Force technical efforts related to the Joint Air Force/Defense Advanced Research Projects Agency Unmanned Combat Air Vehicle (UCAV) program have been consolidated into this PE per Congressional direction. Only the UCAV portions of the following PEs and Projects have been transferred into this PE: PE 0602202F, Project 7184; PE 0603203F, Project 665A; PE 0603211F, Project 4920; PE 0603601F, Project 670A; and PE 0603789F, Project 4072.

(U) **A. Mission Description**

This program will develop, demonstrate, and transition advanced unarmed, unmanned aerial vehicle (UAV) and unmanned combat air vehicle (UCAV) technologies. Flight testing to demonstrate integration of critical technologies, such as autonomous operations, inter-vehicle communications, and multi-vehicle flight operations, will improve the performance and supportability of UAVs and UCAVs.

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

- (U) \$0 Accomplishments/Planned Program
- (U) \$10,509 Developed and integrated critical technologies that provide for autonomous operations, inter-vehicle communications, and multi-vehicle flight operations. Obtained test vehicles, flight control software, and ground control station equipment in order to conduct end-to-end ground and flight demonstrations of the mission utility of the UCAV.
- (U) \$1,684 Completed the development of advanced fusion technology to evaluate the capability of UCAVs to operate in a Command, Control, Communication, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) data-rich environment as part of an integrated Command, Control, and Communications (C3) network. Demonstrated, through flight test, the concept of single distributed control by performing a hand off between a friendly area of operations controller and the area of responsibility controller (i.e., two different ground stations). Demonstrated, through flight test, the software elements for both the air vehicle and the Mission Control Station required for the dynamic command and control of multiple vehicles by one controller.
- (U) \$1,771 Continued the development and demonstration of technologies to support an affordable UCAV unit recurring flyaway goal in a C4ISR data-rich environment as part of an integrated C3 network. Demonstrated multi-vehicle flight operations, including escort formations, collision avoidance, auto routing, and dynamic re-tasking among others. Demonstrated multiple re-planned weapons drops.
- (U) \$2,396 Continued to develop and demonstrate both electro-optical and radio frequency technologies for both advanced technologies and complete sensor capabilities on the UCAV.

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$1,302 Continued human systems technology support by demonstrating remote operator control/interface that can extend the capability to effectively and affordably perform the 21st century missions of defense suppression and tactical attack.</p> <p>(U) \$1,241 Continued to integrate miniature munition concepts with the unmanned combat air vehicle (UCAV), as well as support integration and planning of a UCAV flight test.</p> <p>(U) \$18,903 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$10,869 Complete development and integration of critical technologies that provide for autonomous operations, inter-vehicle communications, and multi-vehicle flight operation. Complete an end-to-end demonstration of the mission utility of the UCAV.</p> <p>(U) \$2,699 Complete the development and demonstration of technologies to support an affordable UCAV unit recurring flyaway goal in a Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) data-rich environment as part of an integrated Command, Control, and Communication network. Demonstrate multi-vehicle flight operations, including escort formations, collision avoidance, auto routing, and dynamic re-tasking among others. Demonstrate multiple re-planned weapons drops.</p> <p>(U) \$1,897 Complete development and demonstration of both electro-optical and radio frequency technologies for both advanced technologies on the UCAV.</p> <p>(U) \$1,095 Complete human systems technology support by demonstrating remote operator control/interface that can extend the capability to effectively and affordably perform the 21st century missions of defense suppression and tactical attack.</p> <p>(U) \$1,048 Complete integration of miniature munition concepts with UCAV and complete UCAV flight test with miniature munition concepts.</p> <p>(U) \$17,608 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p style="padding-left: 20px;">This program is in Budget Activity 3, Advanced Development, since it develops and demonstrates technologies for new unarmed, unmanned aerial vehicles and UCAVs that have C4ISR capabilities and address warfighter needs.</p>		
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BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
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(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	20,952	18,000	0	
(U) Appropriated Value	21,100	18,000		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-148	-190		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-202		
d. Below Threshold Reprogram				
e. Rescissions	-2,049			
(U) Adjustments to Budget Years Since FY 2003 PBR			0	
(U) Current Budget Submit/FY 2004 PBR	18,903	17,608	0	TBD
(U) <u>Significant Program Changes:</u>				
In FY 2004, this effort transfers into PE 0604731F, Unmanned Combat Air Vehicle.				
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>				
(U) PE 0602202F, Human Effectiveness.				
(U) PE 0602201F, Aerospace Vehicle Technologies.				
(U) PE 0603203F, Advanced Aerospace Sensors.				
(U) PE 0603601F, Conventional Weapons.				
(U) PE 0603789F, C3I Advanced Development.				
(U) PE 0604731F, Unmanned Combat Air Vehicle.				
(U) PE 0602702E, Tactical Technology.				
(U) PE 0603285E, Advanced Aerospace Systems.				
(U) PE 0603762E, Sensor and Guidance Technology.				
(U) This project has been coordinated through the Reliance process to harmonize efforts and eliminate duplication.				
(U) <u>E. Acquisition Strategy</u>				
Not Applicable.				
(U) <u>F. Schedule Profile</u>				

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<p>(U) <u>F. Schedule Profile Continued</u></p> <p>(U) Not Applicable.</p>		
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