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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2000		
BUDGET ACTIVITY 03 - Advanced Technology Development				PE NUMBER AND TITLE 0603106F Logistics Systems Technology				PROJECT 632745		
COST (\$ in Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
632745	Logistics Performance and Support Technology (S&T)	9,478	10,651	13,895	11,367	11,729	12,814	9,740	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>(U) A. Mission Description This program develops and demonstrates cost-effective technologies to improve the design, performance, security, and support of current and future weapon systems, including their support equipment. This effort also develops technology to incorporate human operator, maintenance, and support considerations into the weapon systems design process and to make engineering, product support, and maintenance data electronically available throughout weapon systems' life cycles. The program provides more realistic logistics planning and combat capability assessment tools, and provides technologies to reduce deployment airlift and footprint requirements, acoustic sensor and processing technologies to locate and identify threats, and two-way communication technologies for command and control. This program improves logistics information command and control and asset visibility, provides critical logistics risk reduction technology, and helps control total weapon systems' life cycle costs.</p> <p>(U) FY 1999 (\$ in Thousands)</p> <p>(U) \$2,123 Developed, demonstrated, and transitioned technologies to enable/streamline aircraft maintenance processes by continuing development of electronic technical data, algorithms, and software to enhance aircraft battle damage assessment capability. Completed field test with trained aircraft damage assessors.</p> <p>(U) \$4,373 Developed and demonstrated tools and technologies to maximize efficiency and effectiveness of Air Force operational deployments by continuing to develop technologies for next generation, multi-function, modular support equipment that is highly reliable, reconfigurable, and easily deployable. Continued to develop and field test technologies to enhance rapid contingency planning, deployments, and operations. Began development of technology to provide wing commanders/senior logisticians with advanced information and management capabilities.</p> <p>(U) \$1,381 Developed and demonstrated analytical tools by defining artificial intelligence requirements to improve efficiency of Air Force depot maintenance operations and logistics information systems.</p> <p>(U) \$457 Investigated technologies to demonstrate the feasibility of downloading aircraft status information anytime during a flight (Passive Aircraft Status System).</p> <p>(U) \$1,144 Developed and demonstrated integrative architecture capable of exchanging data with Common Object Request Broker Architecture (COBRA) and High-Level Architecture (HLA) federations to support future development of realistic human behavior models for large-scale synthetic battlespace exercises and improved interfaces to airlift command and control systems.</p>										
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(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 1999 (\$ in Thousands) Continued</u>		
(U) \$9,478	Total	
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$756	Develop and demonstrate technologies to enhance and streamline aircraft maintenance processes to improve the Air Force's ability to meet Air Expeditionary Force (AEF) requirements by providing faster and more accurate methods of diagnosing and predicting component failures. Begin development of a diagnostics capability to provide technicians with more effective tools for isolating faults on the software intensive, reconfigurable systems found on modern aircraft and advanced aircraft systems currently in development. Based on field test results, advance and transition technology to support the assessment of battle damaged aircraft.	
(U) \$3,846	Develop and demonstrate intelligent software agents and realistic human behavior models. These computer agents and models will add realism and fidelity to large-scale synthetic environments and war games, and improve the user interaction with information systems. Define technology requirements for intelligent software agents that automate the setting-up and running of synthetic exercises to reduce the costs of running these simulations. Define technology requirements for computer agents that improve the human interface effectiveness for airlift command and control systems.	
(U) \$6,049	Develop and demonstrate logistics technologies for improved deployment operations and improved system supportability. These technologies will maximize the efficiency and effectiveness of Air Force deployments and mobility operations in support of agile combat support initiatives and the emerging AEF concepts. Continue to develop technology to provide wing commanders and senior logisticians with advanced information and management capabilities, including rapid access to real-time resources status information, proactive problem identification, decision support, and process tracking. Continue design and development of an integrated, easily deployable, waste management system to process all types of waste materials produced during deployed operations. Demonstrate agile/lean deployment capability, reduced airlift requirements, and reduced on-site footprint using highly reliable, modular, multi-function support equipment for flightline maintenance.	
(U) \$10,651	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$1,967	Develop and demonstrate technologies to enhance and streamline aircraft maintenance processes to improve the Air Force's ability to meet AEF requirements by providing faster and more accurate methods of diagnosing and predicting component failures. Continue development of diagnostics capability to provide technicians with more effective tools for isolating faults on the software intensive, reconfigurable systems found on modern aircraft and advanced aircraft systems currently in development.	
(U) \$4,945	Develop and demonstrate intelligent software agents and realistic human behavior models. These computer agents and models will add realism and fidelity to large-scale synthetic environments and war games, and improve the user interaction with logistics information systems. Develop	
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BUDGET ACTIVITY 03 - Advanced Technology Development		PE NUMBER AND TITLE 0603106F Logistics Systems Technology		PROJECT 632745	
(U)	<u>A. Mission Description Continued</u>				
(U)	<u>FY 2001 (\$ in Thousands) Continued</u>				
(U)	\$4,805	intelligent software agents that automatically translate and execute air tasking order inputs for synthetic exercises and war games. Develop software agents that enhance the users' ability to monitor and respond to asymmetric events during mobility and airlift operations.			
(U)	\$4,805	Develop and demonstrate logistics technologies for improved deployment operations and improved system supportability. These technologies will maximize the efficiency and effectiveness of Air Force deployments and mobility operations in support of agile combat support initiatives and the emerging Air Expeditionary Force (AEF) concepts. Continue to develop technology to provide wing commanders and senior logisticians with advanced information and management capabilities, including rapid access to real-time resources status information, proactive problem identification, decision support, and process tracking. Continue to develop an integrated, easily deployable, waste management system to process all types of waste materials produced during deployed operations.			
(U)	\$2,178	Develop and demonstrate logistics technologies for improved system supportability, deployability, and mobility. These technologies will greatly improve the flexibility and deployability of the flightline maintenance equipment, improve the airlift/mobility operations of the AEF and ensure that weapon systems are more reliable and maintainable. Transition specifications for the next generation of powered support equipment for more agile/lean flightline maintenance. Transition specifications and technology for next generation ground refueling systems to support Air Force Special Operations Command.			
(U)	\$13,895	Total			
(U)	<u>B. Budget Activity Justification</u>				
	This program is in Budget Activity 3, Advanced Technology Development, since it develops and demonstrates cost-effective technologies to improve the design, performance, and support of current and future weapon systems.				
(U)	<u>C. Program Change Summary (\$ in Thousands)</u>				
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2000 PBR)	9,069	10,786	14,015	TBD
(U)	Appropriated Value	9,177	10,786		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-108	-6		
	b. Small Business Innovative Research	-248			
	c. Omnibus or Other Above Threshold Reprogram		-58		
	d. Below Threshold Reprogram	710			
	e. Rescissions	-53	-71		
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(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
f. Other				TBD
(U) Adjustments to Budget Years Since FY 2000 PBR			-120	
(U) Current Budget Submit/FY 2001 PBR	9,478	10,651	13,895	TBD
(U) <u>Significant Program Changes:</u> Not Applicable.				
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>				
(U) Related Activities:				
(U) PE 0207219F, Advanced Tactical Fighter.				
(U) PE 0602201F, Aerospace Flight Dynamics.				
(U) PE 0602202F, Human Effectiveness Applied Research.				
(U) PE 0603721N, Integrated Diagnostic System.				
(U) PE 0604708F, Generic Integrated Maintenance Diagnostics Systems.				
(U) PE 0604740F, Computer Resource Management Technology.				
(U) PE 0605801A, Pollution Prevention Research and Development.				
(U) PE 0708011F, Manufacturing 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> Not Applicable.				