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

DATE: June 2001

BUDGET ACTIVITY: 02 - Applied Research

PE NUMBER AND TITLE: 0602269F Hypersonic Technology Program

PROJECT: 1025

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
1025	Hypersonic Technology Program	15,455	0	0	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: In FY 2000, funding for this program was zeroed by the Air Force; however, Congress added $16.0 million for Hypersonic Technology. In FY 2001, the Air Force provided funding for this program in PEs 0602203F, Aerospace Propulsion; 0603202F, Aerospace Propulsion Subsystems Integration; and 0603216F, Aerospace Propulsion and Power Technology. Beginning in FY 2002, all funding for this program will be shifted to PE 0602203F, Aerospace Propulsion, Project 3012, in order to align projects with the Air Force Research Laboratory organization.

(U) A. Mission Description

This program develops advanced hypersonic technologies that will provide revolutionary propulsion options to provide the Air Force with new hypersonic weapons and space launch capabilities. This program will focus on hydrocarbon fueled hypersonic vehicle technologies and demonstrate their feasibility. Technologies developed under this program will be applicable to both Department of Defense and National Aeronautical and Space Administration requirements. Planned efforts include analyses, hypersonic materials/structures, airbreathing propulsion, hydrocarbon fuels, and integrated technology test demonstrations.

(U) FY 2000 ($ in Thousands)

(U) $14,688 Designed, developed, and tested propulsion components, structures, and integrated propulsion devices for advanced hypersonic propulsion concepts. Continued testing of scramjet engine components (e.g., inlet, combustor, and nozzle) capable of demonstrating positive thrust at Mach 4-8 while withstanding severe internal conditions. Completed demonstration of heavyweight scramjet engine in freejet. Initiated fabrication and testing of flight type scramjet combustor and inlet.

(U) $398 Developed technologies for instrumentation and test in realistic hypersonic conditions. Continued application of hypersonic test instrumentation to freejet engine configurations and establishment of test instrumentation protocol for freejet testing.

(U) $269 Developed and extended computational technologies from low-speed and supersonic flight to the hypersonic environment. Continued validation of computational methods in instrumented engine flowpath test rigs.

(U) $100 Conducted feasibility studies, system design trades, and simulations to integrate hypersonics technologies into advanced vehicle designs for hypersonic applications that will improve warfighting capability and satisfy the requirements of Global Reach/Global Power. Continued mission analyses to characterize user requirements and technology maturity. Updated detailed missile design to guide complex interdisciplinary technology requirements definition and development of integrated hypersonic vehicles to support Defense Advanced Research Projects Agency's affordable rapid response missile demonstrator program.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: June 2001
BUDGET ACTIVITY: 02 - Applied Research	PE NUMBER AND TITLE: 0602269F Hypersonic Technology Program	PROJECT: 1025

(U) A. Mission Description Continued

(U) FY 2000 ($ in Thousands) Continued
(U) $15,455 Total

(U) FY 2001 ($ in Thousands)
(U) $0 Efforts moved to PE 0602203F, PE 0603202F, and PE 0603216F.
(U) $0 Total

(U) FY 2002 ($ in Thousands)
(U) $0 Efforts moved to PE 0602203F, Project 3012.
(U) $0 Total

(U) B. Budget Activity Justification

This program is in Budget Activity 2, Applied Research, since it develops and determines the technical feasibility and military utility of evolutionary and revolutionary technologies.

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

		FY 2000	FY 2001	FY 2002	Total Cost
(U)	Previous President's Budget (FY 2001 PBR)	15,808	0	0	
(U)	Appropriated Value	16,000			
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research	-377			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions	-168			
(U)	Adjustments to Budget Years Since FY 2001 PBR	0	0	0	
(U)	Current Budget Submit/FY 2002 PBR	15,455	0	0	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE June 2001	
BUDGET ACTIVITY 02 - Applied Research	PE NUMBER AND TITLE 0602269F Hypersonic Technology Program	PROJECT 1025

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

(U) Significant Program Changes:

Note: In FY 2000, funding for this program was zeroed by the Air Force; however, Congress added $16.0 million for Hypersonic Technology. In FY 2001, the Air Force provided funding for this program in PEs 0602203F, Aerospace Propulsion; 0603202F, Aerospace Propulsion Subsystems Integration; and 0603216F, Aerospace Propulsion and Power Technology. Beginning in FY 2002, all funding for this program will be shifted to PE 0602203F, Aerospace Propulsion, in order to align projects with the Air Force Research Laboratory organization.

(U) D. Other Program Funding Summary ($ in Thousands)

(U) Related Activities:
(U) PE 0602102F, Materials.
(U) PE 0602201F, Flight Dynamics
(U) PE 0602203F, Aerospace Propulsion
(U) PE 0603112F, Advanced Materials for Weapon Systems.
(U) This project has been coordinated through the Reliance process to harmonize efforts and eliminate duplication.

(U) E. Acquisition Strategy

Not Applicable.

(U) F. Schedule Profile

(U) Not Applicable.