

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 1999</b>
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<b>BUDGET ACTIVITY</b> <b>2 - Applied Research</b>	<b>PE NUMBER AND TITLE</b> <b>0602269F Hypersonic Technology Program</b>	<b>PROJECT</b> <b>1025</b>
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
1025 Hypersonic Technology	9,115	16,586	0	0	0	0	0	0	0	0
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: In FY 2000, this program is terminated.

(U) **A. Mission Description:** This Applied Research program develops advanced hypersonic technologies and will provide revolutionary technology options to satisfy future Air Force needs such as future hypersonic weapons and space launch concepts. This program will focus on hydrocarbon fueled hypersonic vehicle technologies and demonstrate their feasibility. Technologies developed under this program will be dual-use and applicable to both DoD and National Aeronautics and Space Administration (NASA) requirements. Planned efforts include analyses, hypersonic materials/structures, airbreathing propulsion, hydrocarbon fuels, and integrated technology test demonstrations.

(U) **FY 1998 (\$ in Thousands):**

- (U) \$7,908      Designed, developed, and tested propulsion components, structures, and integrated propulsion designs to demonstrate performance and durability of advanced hypersonic propulsion concepts.
- (U) \$471        Designed, developed, and tested advanced high-temperature, high-strength materials and structures for durability and affordability in hypersonic applications.
- (U) \$284        Developed technologies for instrumentation and test in realistic hypersonic conditions to enable appropriate system testing.
- (U) \$310        Developed and extended computational technologies for supersonic combustion flow paths, validated these technologies, and applied them to predict internal flows and performance of scramjet engines for accurate prediction of system performance.
- (U) \$142        Conducted feasibility studies, design trades, and simulations to integrate hypersonic technologies into advanced vehicle designs for hypersonic applications that will improve warfighting capability and satisfy the requirements of Global Reach/Global Power.
- (U) \$9,115      Total

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<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> <li>- (U) \$14,127      Design, develop, and test propulsion components, structures, and integrated propulsion designs to demonstrate performance and durability of advanced hypersonic propulsion concepts.</li> <li>- (U) \$1,063      Design, develop, and test advanced high-temperature, high-strength materials and structures for durability in hypersonic applications.</li> <li>- (U) \$392        Develop technologies for instrumentation and test in realistic hypersonic conditions to enable appropriate system testing.</li> <li>- (U) \$392        Develop and extend computational technologies for supersonic combustion flow paths, validate these technologies, and apply them to predict internal flows and performance of scramjet engines for accurate prediction of system performance.</li> <li>- (U) \$147        Conduct feasibility studies, design trades, and simulations to integrate hypersonic technologies into advanced vehicle designs for hypersonic applications that will improve warfighting capability and satisfy the requirements of Global Reach/Global Power.</li> <li>- (U) \$465        Identified as a source for SBIR</li> <li>- (U) \$16,586    Total</li> </ul> <p>(U) <u>FY 2000:</u> Not Applicable</p> <p>(U) <u>FY 2001:</u> Not Applicable</p> <p>(U) <b>B. <u>Budget Activity Justification:</u></b> 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.</p>		
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<b>BUDGET ACTIVITY</b> <b>2 - Applied Research</b>		<b>PE NUMBER AND TITLE</b> <b>0602269F Hypersonic Technology Program</b>			<b>PROJECT</b> <b>1025</b>
<b>(U) C. <u>Program Change Summary (\$ in Thousands):</u></b>					
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total</u>
(U) Previous President's Budget/FY 1999 PB	9,305	16,649	16,577	16,396	Cost
(U) Appropriated Value	9,840	16,649			Cont
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions	-326	-63			
b. SBIR	-216				
c. Omnibus/Other Above Threshold Reprogrammings	-519				
d. Below Threshold Reprogrammings	336				
e. Rescissions					
(U) Adjustments to Budget Years Since FY 1999 PB			-16,577	-16,396	
(U) Current Budget Submit/FY 2000 PB	9,115	16,586	0	0	
 (U) (U) Significant Program Changes: In FY 2000, this program is terminated due to higher priorities within the Science and Technology (S&T) Program.					
FY 1999: \$465 indentified as a source for SBIR.					
<b>(U) D. <u>Other Program Funding Summary:</u></b>					
(U) <u>Related Activities:</u>					
- (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) <b>E. <u>Acquisition Strategy:</u></b> Not Applicable.					
 (U) <b>F. <u>Schedule Profile:</u></b> Not Applicable.					
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