

**UNCLASSIFIED**

PE NUMBER: 0602805F  
 PE TITLE: Dual Use Science & Technology

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2006</b>
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<b>BUDGET ACTIVITY</b> <b>02 Applied Research</b>	<b>PE NUMBER AND TITLE</b> <b>0602805F Dual Use Science &amp; Technology</b>
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Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	3.955	0.986	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4770 Dual Use Science and Technology (S&T)	3.955	0.986	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

Note: In FY 2006, this PE will be cancelled as a result of higher Air Force priorities.

**(U) A. Mission Description and Budget Item Justification**

This program seeks to leverage industry investments with interests in advanced technologies of mutual advantage to the Air Force and the commercial sector. A key objective of this program is for the Air Force to stimulate the development of dual use technologies so as to provide greater access to commercially developed technologies and to promote more affordable defense systems that maintain battlespace superiority. A critical component of this program is the cost-sharing requirement from industry and specific Air Force programs. The cooperative funding assures joint commitment to the transition and dual use development efforts of successfully demonstrated technologies. Specific projects are determined through annual competitive solicitations. Technology areas considered may include advanced materials and manufacturing; sensors; advanced propulsion, power, and fuel efficiency; information and communications technologies; and weapon systems sustainment. Note: In FY 2006, Congress added \$1.0 million for Project HMA. This program is Budget Activity 2, Applied Research, since it develops and determines the technical feasibility and military utility of evolutionary and revolutionary technologies.

**(U) B. Program Change Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	5.105	0.000	0.000
(U) Current PBR/President's Budget	3.955	0.986	0.000
(U) Total Adjustments	-1.150	0.986	
(U) Congressional Program Reductions	0.000		
Congressional Rescissions	-0.004	-0.014	
Congressional Increases	0.000	1.000	
Reprogrammings	-1.013		
SBIR/STTR Transfer	-0.133		

**(U) Significant Program Changes:**

In FY 2006, this PE will be cancelled as a result of higher Air Force priorities.

**C. Performance Metrics**

(U) Under Development

**Exhibit R-2a, RDT&E Project Justification**

DATE  
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BUDGET ACTIVITY <b>02 Applied Research</b>				PE NUMBER AND TITLE <b>0602805F Dual Use Science &amp; Technology</b>			PROJECT NUMBER AND TITLE <b>4770 Dual Use Science and Technology (S&amp;T)</b>		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4770 Dual Use Science and Technology (S&T)	3.955	0.986	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

Note: In FY 2006, this PE will be cancelled as a result of higher Air Force priorities.

**(U) A. Mission Description and Budget Item Justification**

This program seeks to leverage industry investments with interests in advanced technologies of mutual advantage to the Air Force and the commercial sector. A key objective of this program is for the Air Force to stimulate the development of dual use technologies so as to provide greater access to commercially developed technologies and to promote more affordable defense systems that maintain battlespace superiority. A critical component of this program is the cost-sharing requirement from industry and specific Air Force programs. The cooperative funding assures joint commitment to the transition and dual use development efforts of successfully demonstrated technologies. Specific projects are determined through annual competitive solicitations. Technology areas considered may include advanced materials and manufacturing; sensors; advanced propulsion, power, and fuel efficiency; information and communications technologies; and weapon systems sustainment. Note: In FY 2006, Congress added \$1.0 million for Project HMA. This program is Budget Activity 2, Applied Research, since it develops and determines the technical feasibility and military utility of evolutionary and revolutionary technologies.

**(U) B. Accomplishments/Planned Program (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) MAJOR THRUST: Advance materials and manufacturing technologies. Technology areas of interest include smart and adaptive skins, corrosion resistant and genetically designed coatings, evaluation techniques, nano-scale electronics, specialized materials for space launch, and agile materials for use in force protection.	0.950	0.000	0.000
(U) In FY 2005: Enhanced the capability, performance, durability, and affordability of Air Force and commercial air and space systems.			
(U) In FY 2006: Not Applicable.			
(U) In FY 2007: Not Applicable.			
(U) MAJOR THRUST: Design and develop advanced sensors and associated technologies. Technology areas of interest include real-time, high-resolution, precision imaging; sensitive ambient electromagnetic (e.g., infrared) detection; and high-speed, precision temporal, spatial, and attitude sensors and controllers.	0.755	0.000	0.000
(U) In FY 2005: Expanded the design, efficiency, and affordability of advanced sensors and associated technologies for military and commercial air and space platforms.			
(U) In FY 2006: Not Applicable.			
(U) In FY 2007: Not Applicable.			
(U)			

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<b><u>B. Accomplishments/Planned Program (\$ in Millions)</u></b>		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) MAJOR THRUST: Develop propulsion, power, energy, and fuel efficiencies and affordability. Technology areas of interest include engine and motor performance and emissions; turbine and hypersonic engine combustion and dynamics; power processing, storage, and conversion; and smart engine health monitoring techniques.		0.950	0.000	0.000
(U) In FY 2005: Enhanced the operational capability, expand the life, and reduce the cost of military and commercial air and space operations.				
(U) In FY 2006: Not Applicable.				
(U) In FY 2007: Not Applicable.				
(U) MAJOR THRUST: Advance information and communication technologies. Technology areas of interest include collecting, synthesizing, and encoding pertinent information; securing high-speed and reliable fusion, accuracy, security, and transmission of information; and presenting relevant information in an efficient, timely, consistent, and easily understood manner.		0.650	0.000	0.000
(U) In FY 2005: Promoted new technologies to collect, collate, process, distribute, recall, and secure high-accuracy data on and across military and commercial platforms.				
(U) In FY 2006: Not Applicable.				
(U) In FY 2007: Not Applicable.				
(U) MAJOR THRUST: Enhance weapon systems sustainment to prolong system life and reduce life cycle costs. Technology areas of interest include avionics; materials fatigue and fracture; corrosion; cost-effective techniques for non-invasive, real-time monitoring of system health/performance; and associated environmental impacts.		0.650	0.000	0.000
(U) In FY 2005: Enhanced sustainability, reliability, maintainability, operability, efficiency, and affordability of military and commercial air and space propulsion.				
(U) In FY 2006: Not Applicable.				
(U) In FY 2007: Not Applicable.				
(U) CONGRESSIONAL ADD: Project HMA		0.000	0.986	0.000
(U) In FY 2005: Not Applicable.				
(U) In FY 2006: Conduct Congressionally-directed effort for Project HMA.				
(U) In FY 2007: Not Applicable.				
(U) Total Cost		3.955	0.986	0.000

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PROJECT NUMBER AND TITLE  
**4770 Dual Use Science and Technology (S&T)**

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</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>Complete</u>	
(U) Related Activities:									
(U) PE 0601102F, Defense Research Sciences.									
(U) PE 0602102F, Materials.									
(U) PE 0602201F, Aerospace Flight Dynamics.									
(U) PE 0602202F, Human Effectiveness.									
(U) PE 0602203F, Aerospace Propulsion.									
(U) PE 0602204F, Aerospace Sensors.									
(U) PE 0602500F, Multi-Disciplinary Space Technology.									
(U) PE 0602601F, Space Technology.									
(U) PE 0602602F, Conventional Munitions.									
(U) PE 0602605F, Directed Energy Technology.									
(U) PE 0602702F, Command Control and Communications.									
(U) PE 0603112F, Advanced Materials for Weapon Systems.									
(U) PE 0603203F, Advanced Aerospace Sensors.									
(U) PE 0603211F, Aerospace Structures.									

## Exhibit R-2a, RDT&amp;E Project Justification

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**02 Applied Research**

PE NUMBER AND TITLE

**0602805F Dual Use Science &  
Technology**

PROJECT NUMBER AND TITLE

**4770 Dual Use Science and  
Technology (S&T)****(U) C. Other Program Funding Summary (\$ in Millions)**

- (U) PE 0603216F, Aerospace  
Propulsion and Power  
Technology.
- (U) PE 0603231F, Crew Systems and  
Personnel Protection  
Technology.
- (U) PE 0603270F, Electronic  
Combat Technology.
- (U) PE 0603401F, Advanced  
Spacecraft Technology.
- (U) PE 0603500F,  
Multi-Disciplinary Advanced  
Development Space Technology.
- (U) PE 0603601F, Conventional  
Weapons Technology.
- (U) PE 0603605F, Advanced  
Weapons Technology.
- (U) PE 0603789F, C3I Advanced  
Development.
- (U) This program has been  
coordinated through the Reliance  
process to harmonize efforts and  
eliminate duplication.

**(U) D. Acquisition Strategy**

Not Applicable.