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

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2004

BUDGET ACTIVITY: 02 Applied Research

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

Cost ($ in Millions)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	10.075	10.496	5.151	2.961	5.147	5.317	5.480	0.000	0.000
4770	Dual Use Science and Technology (S&T)	10.075	10.496	5.151	2.961	5.147	5.317	5.480	0.000	0.000

(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.

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

		FY 2003	FY 2004	FY 2005
(U)	Previous President's Budget	10.395	10.586	8.864
(U)	Current PBR/President's Budget	10.075	10.496	5.151
(U)	Total Adjustments	-0.320	-0.090	
(U)	Congressional Program Reductions			
	Congressional Rescissions		-0.090	
	Congressional Increases			
	Reprogrammings			
	SBIR/STTR Transfer	-0.320		

(U) Significant Program Changes:

Changes to this program since the previous President's Budget are a result of higher Air Force priorities.

Exhibit R-2a, RDT&E Project Justification			DATE: February 2004
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Cost ($ in Millions)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
4770	Dual Use Science and Technology (S&T)	10.075	10.496	5.151	2.961	5.147	5.317	5.480	0.000	0.000
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(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.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U) MAJOR THRUST: Advance materials and manufacturing technologies.	2.015	2.663	1.306
(U) In FY 2003: Explored processes and technologies relative to Air Force and commercial air and space vehicles and launch systems. Technology areas of interest included: non-destructive/non-intrusive evaluation techniques; smart and adaptive skins; corrosion resistant coatings; micro- and nano-scale electronics; durable, lightweight materials for space launch; and agile materials for use in force protection.			
(U) In FY 2004: Enhance the capability, performance, durability, and affordability of Air Force and commercial air and space systems. 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.			
(U) In FY 2005: Continue to enhance the capability, performance, durability, and affordability of Air Force and commercial air and space systems. 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.			
(U)			
(U) MAJOR THRUST: Design and develop advanced sensors and associated technologies.	2.015	1.728	0.848
(U) In FY 2003: Enabled affordable advanced sensors and technologies tied to commercial and military air and space platforms. Technology areas of interest included: timely, high quality, precision imaging; sensitive electromagnetic (i.e., infrared) detection; and high-speed, precision temporal, spatial, and attitude sensors and controllers.			
(U) In FY 2004: Expand the design and development of affordable advanced sensors and related technologies to enhance			

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	the capabilities of military and commercial air and space platforms. 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.			
(U)	In FY 2005: Continue to expand the design, efficiency, and affordability of advanced sensors and associated technologies for military and commercial air and space platforms. Technology areas of interest include real-time, high-resolution, precision imaging and tracking devices; sensitive, multi- and cross-environmental electromagnetic sensors; and high-speed, high-precision spatial and attitude sensors and multi-component controllers.			
(U)				
(U)	MAJOR THRUST: Develop propulsion, power, energy, and fuel efficiencies and affordability.	2.015	2.614	1.283
(U)	In FY 2003: Improved the performance, increased the life, and reduced the cost of military and commercial air and space operations. Technology areas of interest included: performance and emissions of airbreathing and rocket propulsion systems; advanced gas turbine combustion and blades; electric propulsion alternatives; energy processing, storage, and conversion; lasers; and smart engine health monitoring techniques.			
(U)	In FY 2004: Continue to enhance the operational capability, expand the life, and reduce the cost of military and commercial air and space operations. Technology areas of interest include: airbreathing and rocket propulsion systems; gas turbine engines and blades; electric propulsion alternatives; energy processing, storage, and conversion; lasers; and smart engine health monitoring techniques.			
(U)	In FY 2005: Continue to enhance the operational capability, expand the life, and reduce the cost of military and commercial air and space operations. 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.			
(U)				
(U)	MAJOR THRUST: Advance information and communication technologies.	2.015	1.762	0.865
(U)	In FY 2003: Enhanced the collection, processing, dissemination, security, accuracy, and presentation of information to U.S. and coalition military decision-makers and corresponding commercial industry sectors. Technology areas of interest include: collecting, synthesizing, and encoding pertinent information; securing the high-speed and reliable fusion, accuracy, security, and transmission of information; and presenting the appropriate information in an efficient, timely, consistent, and easily understood manner.			
(U)	In FY 2004: Further enhance the collection, processing, dissemination, security, accuracy, and presentation capabilities of military and commercial information systems. 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.			
(U)	In FY 2005: Promote new technologies to collect, collate, process, distribute, recall, and secure high-accuracy data			

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	on and across military and commercial platforms. Technology areas of interest include data/information gathering, synthesizing, and encoding; processing, fusion, and security; as well as timeliness, accuracy, and precision.			
(U)				
(U)	MAJOR THRUST: Enhance weapon systems sustainment to prolong system life and reduce life-cycle costs.	2.015	1.729	0.849
(U)	In FY 2003: Extended the life and improved performance, efficiency, reliability, and maintainability of both Air Force and commercial air and space systems. 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.			
(U)	In FY 2004: Prolong and enhance the performance capabilities, reliability, and maintainability while extending the life of both Air Force and commercial air and space systems. 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.			
(U)	In FY 2005: Enhance sustainability, reliability, maintainability, operability, efficiency, and affordability of military and commercial air and space propulsion. Technology areas of interest include materials fatigue, fracture, and corrosion; real-time health monitoring; as well as avionics, electronics, and associated technologies.			
(U)	Total Cost	10.075	10.496	5.151

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

	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
(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									

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

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.

(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

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

(U) Weapons Technology. 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.