PE NUMBER: 0603791F PE TITLE: International Space Cooperative R&D

BUDGEF ACTIVITY PE NUMBER AND TITLE 06 Advanced Component Development and Prototypes (ACD&P) PE NUMBER AND TITLE 06 Advanced Component Development and Prototypes (ACD&P) PE NUMBER AND TITLE 060371F International Space CoopRet/Development Advanced Component Development Advanced Component Develop	ary 2005	February 2	DATE F			ion	Justificat	idget Item	۲DT&E Bı	hibit R-2, I	Ex	
$ \frac{\operatorname{Cost}(\$ in \operatorname{Millions})}{\operatorname{Cost}(\$ in \operatorname{Millions})} = \frac{\operatorname{FY} 2004}{\operatorname{Actual}} = \frac{\operatorname{FY} 2005}{\operatorname{Estimate}} = \frac{\operatorname{FY} 2007}{\operatorname{Estimate}} = \frac{\operatorname{FY} 2008}{\operatorname{Estimate}} = \frac{\operatorname{FY} 2008}{\operatorname{Estimate}} = \frac{\operatorname{FY} 2010}{\operatorname{Estimate}} = \frac{\operatorname{FY} 2010}{\operatorname$			R&D	Cooperative	onal Space (ER AND TITLE	PE NUME 060379	&P)	types (ACD	t and Proto	GET ACTIVITY Advanced Component Developmer	BUD 04 /
Total Program Element (PE) Cost0.4800.5470.5740.5860.6030.6150.6290.639Continui5035Intl Space Coop R&D0.4800.5470.5740.5860.6030.6150.6290.639ContinuiIn FY 2003, from PE 0603790F, 64NATO, NATO Coop R&D, space-related efforts transferred to PE 0603791F, 645035, Intl Space Coop R&D, in order to clearly icgace-related projects and funding.(U)A.Mission Description and Budget Iterr JustificationThese funds will be used to help implement space-related international cooperative research, development, and acquisition (ICRD&A) agreements with North A Treaty Organization (NATO) member states and major non-NATO allies (Argentina, Australia, Egypt, Israel, Japan, Jordan, and Rep. of Korea (South Korea)) a friendly foreign countries (Austria, Bulgaria, Finland, India, Singapore, South Africa, Sweden, Switzerland, and Ukraine). The program implements the provisio Title 10 U.S. Code, Section 2350a on NATO Cooperative Research and Development (R&D). The program was established to improve cooperation among NAT nations, and later major non-NATO allies, in research, development, and acquisition. The legislation authorized funds to significantly improve United States (US allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D of R&D of escarch (3) Advanced Technolo Development funds the implementation of space-related Air Force ICRD&A agreements in (1) Basic Research (2) Applied Research (3) Advanced Technolo Development and Prototypes (5) System Development and Demonstration and (6) RDT&E Management Suport. This PE is designated in Budget Activity 4 because most of the ICRD&A projects support specific systems, include all efforts necessary to evaluat	to Total lete	1 Cost to e Complete	FY 2011 Estimate	FY 2010 Estimate	FY 2009 Estimate	FY 2008 Estimate	FY 2007 Estimate	FY 2006 Estimate	FY 2005 Estimate	FY 2004 Actual	Cost (\$ in Millions)	
5035 Ind Space Coop R&D 0.480 0.547 0.574 0.586 0.603 0.615 0.629 0.639 Continuit In FY 2003, from PE 0603790F, 64NATO, NATO Coop R&D, space-related efforts transferred to PE 0603791F, 645035, Intl Space Coop R&D, in order to clearly ic space-related projects and funding. Im FY 2003, from PE 0603790F, 64NATO, NATO Coop R&D, space-related efforts transferred to PE 0603791F, 645035, Intl Space Coop R&D, in order to clearly ic space-related projects and funding. (U) A.Mission Description and Budget Item Justification These funds will be used to help implement space-related international cooperative research, development, and acquisition (ICRD&A) agreements with North A Treaty Organization (NATO) member states and major non-NATO allies (Argentina, Australia, Egypt, Israel, Japan, Jordan, and Rep. of Korea (South Korea)) a friendly foreign countries (Austria, Bulgaria, Finland, India, Singapore, South Africa, Sweden, Switzerland, and Ukraine). The program implements the provisio Title 10 U.S. Code, Section 2350a on NATO Cooperative Research and Development (R&D). The program was established to improve cooperation among NAT nations, and later major non-NATO allies, in research, development (R&D). The program was established to significantly improve United States (US allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability of commonality. The program will be reported as required by Title 10 U.S. Code, Section 2350a(f program clement funds the implementation of space-related Air Force ICRD&A agreements in (1) Basic Research (2) Applied Research (3) Advanced Technolo Development (4) Advanced Component Development and Demonstrat	uing TBD	539 Continuing	0.639	0.629	0.615	0.603	0.586	0.574	0.547	0.480	Total Program Element (PE) Cost	
In FY 2003, from PE 0603790F, 64NATO, NATO Coop R&D, space-related efforts transferred to PE 0603791F, 645035, Intl Space Coop R&D, in order to clearly ic space-related projects and funding. (U) A.Mission Description and Budget Item Justification These funds will be used to help implement space-related international cooperative research, development, and acquisition (ICRD&A) agreements with North A Treaty Organization (NATO) member states and major non-NATO allies (Argentina, Australia, Egypt, Israel, Japan, Jordan, and Rep. of Korea (South Korea)) a friendly foreign countries (Austria, Bulgaria, Finland, India, Singapore, South Africa, Sweden, Switzerland, and Ukraine). The program implements the provisio Title 10 U.S. Code, Section 2350a on NATO Cooperative Research and Development (R&D). The program was established to improve cooperation among NAT nations, and later major non-NATO allies, in research, development, and acquisition. The legislation authorized funds to significantly improve United States (US allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability o defense systems, and promoting US and allied interoperability or commonality. The program will be reported as required by Title 10 U.S. Code, Section 2350a(Program element funds the implementation of space-related Air Force ICRD&A agreements in (1) Basic Research (2) Applied Research (3) Advanced Technolo Development (4) Advanced Component Development and Prototypes (5) System Development and Demonstration and (6) RDT&E Management Support. This PE is designated in Budget Activity 4 because most of the ICRD&A projects support specific systems, include all efforts necessary to evaluate integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology, and help expedite technologies in as realistic Budget 0.480 0.547 0.574 (U) Previous President's Budget 0.480 0	uing TBD	539 Continuing	0.639	0.629	0.615	0.603	0.586	0.574	0.547	0.480	5 Intl Space Coop R&D	503
B. Program Change Summary (\$ in Millions)FY 2004FY 2005FY 2005FY 2006(U) Previous President's Budget0.4800.14800.547(U) Current PBR/President's Budget0.4800.14800.547(U) Total Adjustments0.000(U) Congressional Program Reductions	5035 Intl Space Coop R&D 0.480 0.547 0.574 0.586 0.603 0.615 0.629 0.639 Continuing TBD In FY 2003, from PE 0603790F, 64NATO, NATO Coop R&D, space-related efforts transferred to PE 0603791F, 645035, Intl Space Coop R&D, in order to clearly identify space-related projects and funding. (U) A. Mission Description and Budget Item Justification related related international cooperative research, development, and acquisition (ICRD&A) agreements with North Atlantic Treaty Organization (NATO) member states and major non-NATO allies (Argentina, Australia, Egypt, Israel, Japan, Jordan, and Rep. of Korea (South Korea)) and friendly foreign countries (Austria, Bulgaria, Finland, India, Singapore, South Africa, Sweden, Switzerland, and Ukraine). The program implements the provisions of Title 10 U.S. Code, Section 2350a on NATO Cooperative Research and Development (R&D). The program was established to improve cooperation among NATO nations, and later major non-NATO allies, in research, development, and acquisition. The legislation authorized funds to significantly improve United States (US) and allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability of defense systems, and promoting US and allied interoperability or commonality. The program will be reported as required by Title 10 U.S. Code, Section 2350a(f). This program element funds the implementation of space-related Air Force ICRD&A agreements in (1) Basic Research (2) Applied Research (3) Advanced Technology Development (4) Advanced Component Development and Protypes (5) System Development and (6) RDT&E Management Support. This PE is designated in Budget Activity 4 because most o											
Image: Constraint of the state of the s	EV 2007	EV 2006	FV	EV 2005	04	EV 20				<u>(Aillions)</u>	B. Program Change Summary (\$ in N	(U)
Congressional Rescissions Congressional Increases	<u>FY 2007</u> 0.575 0.586	0.574 0.574	<u>FY</u> (0.547 0.547 0.000	904 80 80 00	<u>FY 200</u> 0.43 0.43					Previous President's Budget Current PBR/President's Budget Total Adjustments Congressional Program Reductions Congressional Rescissions Congressional Increases	(U) (U) (U) (U)

SBIR/STTR Transfer

(U) Significant Program Changes:

R-1 Shopping List - Item No. 48-2 of 48-9

	E	Exhibit R-2	2a, RDT&E	Project J	ustificatio	on			DATE	February :	2005
BUDG 04 Ac	ET ACTIVITY Ivanced Component Developmer	nt and Proto	types (ACD	&P)	PE NUM 060379 Coope	BER AND TITLE D1F Internation rative R&D	onal Space	PRC 503	DJECT NUMBE	R AND TITLE e Coop R&D)
	Cost (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
5035	Intl Space Coop R&D	0.480	0.547	0.574	0.586	0.603	0.615	0.629	0.639	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		
	Friendly foreign countries (Austria, Bul Friendly foreign countries (Austria, Bul Fitle 10 U.S. Code, Section 2350a on N hations, and later major non-NATO alli allied conventional defense capabilities defense systems, and promoting US and program element funds the implementa Development (4) Advanced Componen This PE is designated in Budget Activity echnologies in as realistic an operating echnology transition from the laborato	garia, Finland VATO Cooper- ies, in research by leveraging d allied interop- tion of space- t Development ty 4 because n g environment	, India, Singaj ative Research n, developmen g the best defe perability or c related Air Fo tt and Prototyp nost of the ICI as possible to	ore, South Af and Develop and Develop and acquisit nse technolog ommonality. T rce ICRD&A pes (5) System RD&A project assess the per	frica, Sweden, ment (R&D). tion. The legis ies, eliminatin The program v agreements in Developmen as support spec- formance or c	, Egypt, Israel , Switzerland, The program slation authorizing costly dupli vill be reported (1) Basic Res t and Demons cific systems, in cost reduction	and Ukraine). was established zed funds to s cation of R&I d as required 1 search (2) App tration and (6 include all eff potential of ac	The program ed to improve ignificantly in D efforts, acce by Title 10 U. blied Research) RDT&E Mar orts necessary dvanced techn	implements t cooperation a nprove United lerating the a S. Code, Sect (3) Advance nagement Sup to evaluate in ology, and he	he provisions mong NATO l States (US) a vailability of ion 2350a(f).' d Technology oport. htegrated lp expedite	of and This
(U) (U)	B. Accomplishments/Planned Progra Hyperspectral Data Exploitation Algor (AFRL)/ Australia) - Planned cooperat space-based hyperspectral sensors. In	am (\$ in Milli ithm Develop ive project to FY04, data co	ons) ment and Asse develop appro llection, data	essment (Air F aches and tecl analysis, and a	Force Research hnologies for algorithm vali	h Lab improved dation will	<u>FY 20</u> 0.0	<u>04 FY</u> 19	<u>7 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) (U)	Impacts of the Space Environment on O The United Kingdom (UK)) - Planned forecasting techniques, and data display that will seriously disrupt the performa systems, as well as ground-based surve and missile defense. In FY04, data col Space Vehicle Orbit Prediction (AFRL accelerometer experiment currently on drag models. This will include solving modeling algorithms to use the new da	Communication cooperative provide a stoprovide a nece of space-te cillance system lection will be / France) - Pla orbit to impro- for short term to will be down	ons, Navigatio roject to devel reliable, timely oased commun is such as those egin. inned coopera ove the accura in geomagnetic	n, and Surveil op space weat y warning of in nication, navig se employed for tive project to cy of upper atte activity varia	lance Systems ther specificat onospheric dis gation and sur- or early missil use data from mospheric aer tions. In FYC	s (AFRL/ ion, sturbances veillance le warning n a French rodynamic 03,	0.4	51	0.205		
رس ا	Management and administrative suppo	rt and travel.	hopeu.								
Proje	ct 5035			R-1 Shopping I	ist - Item No. 4	8-3 of 48-9				Exhibit R-22 (P	PE 0603791E)
i ioje					688	0-0-01 40-0					

BUDGET ACTIVITY PENUMBER AND TILE PROJECT NUMBER AND TILE 64 Advanced Component Development and Prototypes (ACD&P) PENUMBER AND TILE 5035 Intl Space Coop R&D (U) Measurement of High-Latitude lonospheric Structures and System Effects from Northeast Greenland (AFRI /Demurk) - Plannet cooperative project to accurately model, simular, recognize, and forecast polar ionospheric conditions attainion Nort in Greenland for the purpose of furthering basic research into mechanisms creating ionospheric disturbances, improving high-latitude ionosphere models, simulations, and providing space wather simutional awareness and forecast tools 0.247 0.125 0.018 (U) Space Vchicle Orbit Prediction (AFRL/ France) - Ongoing cooperative project to use data from a French accelerometer experiment currently on orbit to improve the accuracy of upper atmospheric aerodynamic drag models. This will include solving for short term geromagenic activity avariations. In FVOL, modeling algorithms to use the new data will be developed. 0.095 0.143 0.357 (C) Cooperative project to conduct collaborative studies and projected EA platforms. Developed technologies will be jointly tested to assure desired effects are achieved and that there is minimal fraticate impact on friendly forces. Additionaly, an initial concept operations will be collectively developed and tested by the participans in order to assess ogtimal capabilities in varying threat situations. 0.080 0.306 0.211 (D) Frequences with a system. The key research focus will be on forecasting ionospheric disturbances and their impact on systems such as Ultra High Freqeneury (UFF) Satellite Communication (SATCOM) and GLOBAL Po		Exhibit R-2a, RDT&E Project J	DATE	February 2	2005		
(1) Measurement of High-Latitude lonospheric Structures and System Effects from Northeast Greenland 0.247 0.125 0.018 (AFRL/Denmark) - Planned cooperative project to accurately model, simulate, recognize, and forecast polar ionospheric conditions in spacting DoD systems. The project will collect multi-instrument measurements of ionospheric conditions at Station Nord in Greenland for the purpose of furthering basic research into mechanisms creating ionospheric distrubances, improving high-latitude ionosphere models, simulations, and providing space weather situational awareness and forecast tools. 0.095 0.143 0.357 (U) Space Vehicle Orbit Prediction (AFRL/Farnec) - Ongoing cooperative project to use data from a French accelorometer experiment currently on orbit to improve the accuracy of upper atmospheric acrodynamic drag models. This will include solving for short term geomagnetic activity variations. In FYO4, modeling algorithms to use the new data will be developed. 0.095 0.143 0.357 SMCCPC (PGFS Joint Porgram Office) and ASDMI/UK - Cooperative project to conduct collaborative studies and eooperatively develop advance counterSATNAV capabilities in variation and radio frequency (RF) surveillance achieved and that there is minimal fracticle impact on Instruptions and radio frequency (RF) surveillance and Australia - Planned cooperative project to collaborate with Australia to study ionospheric disturbances and their impact on System (XFNS) avigation. Ionospheric phenomena had an daverse impact on DoD satellite communication system (ICPRS) Advance Concerel Technical Demostration (ACTD) is dedicated to providing space-based forecasts of the disturbances that cause impacts on radio frequency (RF) surveillance of terest Sy	BUD 04 /	GET ACTIVITY Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603791F Internationa Cooperative R&D	Il Space	PROJECT NUM 5035 Intl Spa	BER AND TITLE ace Coop R&D	
drag models. This will include solving for short term geomagnetic activity variations. In FY04, modeling algorithms to use the new data will be developed. 0.095 0.143 0.357 SMC/GP (GPS Joint Program Office) and ASD/NII/UK - Cooperative project to conduct collaborative studies and cooperatively develop advance counterSATNAV capabilities that can be employed from current and projected EA platforms. Developed technologies will be jointy tested to assure desired effects are achieved and that there is minimal fraticide impact on friendly forces. Additionaly, an initial concept of employment or operations will be collectively developed and tested by the participants in order to assess optimal capabilities in varying threat situations. 0.000 0.306 0.211 Minumum (AFRL/VSBX) and Australia - Planned cooperative project to collaborate with Australia to study ionospheric phonomena which impact communication, navigation and radio frequency (RF) surveillance systems. The key research focus will be on forecasting ionospheric disturbances and their impact on systems such as Ultra High Frequency (UHF) Satellite Communication frequency (RF) surveillance system (CNOFS) Advance Concept Technical Demonstration (ACTD) is dedicated to providing space-based forecasts of the disturbances that cause impacts on radio frequency (RF) systems. 0.480 0.547 0.574 0.586 (U) Total Cost 0.480 0.547 0.574 0.586 0.586 0.586	(U) (U)	Measurement of High-Latitude Ionospheric Structures and System Effects from M (AFRL/Denmark) - Planned cooperative project to accurately model, simulate, re- polar ionospheric conditions impacting DoD systems. The project will collect m measurements of ionospheric conditions at Station Nord in Greenland for the pur research into mechanisms creating ionospheric disturbances, improving high-lati- simulations, and providing space weather situational awareness and forecast tool. Space Vehicle Orbit Prediction (AFRL/ France) - Ongoing cooperative project to accelerometer experiment currently on orbit to improve the accuracy of upper att	Northeast Greenland cognize, and forecast ulti-instrument pose of furthering basic ude ionosphere models, s. use data from a French		0.247	0.125	0.018
Inducting algorithms to use the few data with be developed.(U)Cooperatively develop advance counterSATNAV capabilities that can be employed from current and projected EA platforms. Developed technologies will be joinly tested to assure desired effects are achieved and that there is minimal fraticide impact on friendly forces. Additionaly, an initial concept of employment or operations will be collectively developed and tested by the participants in order to assess optimal capabilities in varying threat situations.0.0000.3060.211(U)Forecasting Communication and Navigation Disruptions due to Inonspheric Disturbance During Solar study ionospheric phenomena which impact communication, navigation and radio frequency (RF) surveillance systems. The key research focus will be on forecasting ionospheric disturbances and their impact on systems such as Ultra High Frequency (UHF) Satellite Communication (SATCOM) and GLOBAL Positioning System (GPS) navigation. Jonospheric phenomena had an adverse impact on DoD satellite communication systems may be vulnerable. The CommunicationNavigation Outage Forecast System System (CNOFS) Advance Concept Technical Demonstration (ACTD) is dedicated to providing space-based forecasts of the disturbances that cause impacts on radio frequency (RF) systems.0.4800.5470.5740.586Project 5035R-1 Shopping List - Item No. 484 of 48-9Exhibit R-2a (PE 0603791F)		drag models. This will include solving for short term geomagnetic activity variat	ions. In FY04,				
Other to assess optimiar capabilities in varying linear structuons. 0.000 0.306 0.211 Minumum (AFRL/VSBX) and Australia - Planned cooperative project to collaborate with Australia to study ionospheric phenomena which impact communication, navigation and radio frequency (RF) surveillance systems. The key research focus will be on forecasting ionospheric disturbances and their impact on systems such as Ultra High Frequency (UHF) Satellite Communication (SATCOM) and GLOBAL Positioning System (GPS) navigation. Ionospheric phenomena had an adverse impact on DoD satellite communication systems in recent operations in Afghanistan and during Operation Iraqi Freedom (OIF); future military operations will almost certainly be conducted in regions where ionospheric disturbances occur and C31 systems may be vulnerable. The Communication/Navigation Outage Forecast System (C/NOFS) Advance Concept Technical Demonstration (ACTD) is dedicated to providing space-based forecasts of the disturbances that cause impacts on radio frequency (RF) systems. 0.480 0.547 0.574 0.586 Project 5035 R-1 Shopping List - Item No. 48-4 of 48-9 Exhibit R-2a (PE 0603791F)	(U)	Cooperation In Navigation Warfare Technology Demonstrator and System Proto SMC/GP (GPS Joint Program Office) and ASD/NII/UK - Cooperative project to studies and cooperatively develop advance counterSATNAV capabilities that car current and projected EA platforms. Developed technologies will be jointly tester effects are achieved and that there is minimal fraticide impact on friendly forces. concept of employment or operations will be collectively developed and tested by order to assess optimel capabilities in varying threat situations.	ype Projects (PA) conduct collaborative be employed from d to assure desired Additionaly, an initial y the participants in		0.095	0.143	0.357
(U) Total Cost 0.480 0.547 0.574 0.586 Project 5035 R-1 Shopping List - Item No. 48-4 of 48-9 Exhibit R-2a (PE 0603791F)	(U)	Forecasting Communication and Navigation Disruptions due to Inonspheric Dist Minumum (AFRL/VSBX) and Australia - Planned cooperative project to collabor study ionospheric phenomena which impact communication, navigation and radi surveillance systems. The key research focus will be on forecasting ionospheric impact on systems such as Ultra High Frequency (UHF) Satellite Communication GLOBAL Positioning System (GPS) navigation. Ionospheric phenomena had an satellite communication and navigation systems in recent operations in Afghanist Iraqi Freedom (OIF); future military operations will almost certainly be conducte ionospheric disturbances occur and C31 systems may be vulnerable. The Comm Outage Forecast System System (C/NOFS) Advance Concept Technical Demons dedicated to providing space-based forecasts of the disturbances that cause impact (RF) systems	arbance During Solar rate with Australia to o frequency (RF) disturbances and their a (SATCOM) and adverse impact on DoD an and during Operation d in regions where unication/Navigation tration (ACTD) is ts on radio frequency	0.000		0.306	0.211
Project 5035 R-1 Shopping List - Item No. 48-4 of 48-9 Exhibit R-2a (PE 0603791F)	(U)	Total Cost		0.480	0.547	0.574	0.586
	Pro	ject 5035 R-1 Shopping L	st - Item No. 48-4 of 48-9			Exhibit R-2a (Pl	E 0603791F)

	DATE February 2005								
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)				PE N 0603 Coo	UMBER AND TI 3791F Interna perative R&I	⊺LE ational Space D	9	PROJECT NUMBE 5035 Intl Spac	R AND TITLE e Coop R&D
(U) <u>C. Other Program Funding Sur</u>	nmary (\$ in M FY 2004 <u>Actual</u>	Aillions) <u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	<u>FY 2010</u> Estimate	<u>FY 2011</u> E <u>Estimate</u>	Cost to Complete Total Cost

(U) N/A

(U) D. Acquisition Strategy

A principal goal of the International Space Cooperative R&D program is to effectively utilize the aggregate resources invested by the US and our allies in space-related R&D. This program element provides the critical funding incentive needed to pursue space-related ICRD&A agreements and helps to (a) leverage USAF and allied resources through cost sharing and economies of scale; (b) exploit the best US and allied technologies for equipping coalition forces; (c) demonstrate areas of commonality or interoperability with our allies; and (d) accelerate the availability of defense technology and systems. Candidate projects are reviewed and approved by the USD(AT&L). An international agreement defining project objectives, responsibilities and costs is required prior to release of funds. To obtain these funds and ensure service commitment, projects are selected from existing or new space-related RDT&E programs funded in the Future Years Defense Plan (FYDP). Project offices must show matching funds and contributions from associated program elements and equitable allied funding. As appropriate, funding responsibility for out-year requirements and follow-on efforts are transferred to the project office and associated program elements. Most contracts are awarded after full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis										DATE	Febru	uary 20()5	
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)						PE NUMBER AND TITLE 0603791F International Space Cooperative R&D					PROJECT NUMBER AND TITLE 5035 Intl Space Coop R&D			
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	Performing Activity & Location	<u>Total</u> <u>Prior to FY</u> <u>2004</u> <u>Cost</u>	<u>FY 2004</u> <u>Cost</u>	FY 2004 Award Date	<u>FY 2005</u> <u>Cost</u>	FY 2005 Award Date	<u>FY 2006</u> <u>Cost</u>	FY 2006 Award Date	<u>FY 2007</u> <u>Cost</u>	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u> AFRL Hanscom AFB, MA AFRL, WPAFB AEDC/DO	TBD			0.499		0.355 0.097		0.428		0.218		Continuing	TBD 1.500 0.097	TBD TBD TBD
SMC, LAAFB, CA Subtotal Product Development Remarks: (U) Support			0.000	0.499		0.100 0.552		0.143 0.571		0.357 0.575		Continuing	0.600 TBD	TBD TBD
AFRL, WPAFB None Subtotal Support Remarks:	TBD		0.000	0.000		0.000		0.000		0.000		Continuing Continuing	TBD 0.000 TBD	TBD TBD
(U) <u>Test & Evaluation</u> TBD None	TBD		0.000	0.000		0.000		0.000		0.000		Continuing	TBD 0.000 TBD	TBD
Remarks: (U) <u>Management</u>			0.000	0.000		0.000		0.000		0.000		Continuing	0.000	
Subtotal Management Remarks: (U) Total Cost			0.000 0.000	0.000 0.499		0.000 0.552		0.000 0.571		0.000 0.575		0.000 Continuing	0.000 TBD	0.000 TBD

Exhibit R-3 (PE 0603791F)

Exhibit R-4, RDT&E Schedule Profile		DAT	February 200		
ACTIVITY PE NUMBER AND TITLE anced Component Development and Prototypes (ACD&P) 0603791F Internatio Cooperative R&D	onal Space	PROJECT NU 5035 Intl S	CT NUMBER AND TITLE Intl Space Coop R&D		
	11.62 33237				
Name of ICR&D Project & In't Agreement Schedule	Start Date	END IA	PE		
Hyperspectral Data Exploitation	FY 03	FY 05	63791		
Impacts of the Space Environment	FY 03	FY 05	63791		
Space Vehicle Orbit Prediction	FY 03	FY 05	63791		
Hypersonic Airbreathing Propulsion Test	FY 04	FY 07	63791		
Measurement of High-Latitude	FY 04	FY 07	63791		
Cooperation in Navigation Warfare Technology	FY 05	FY 07	63791		
Forecasting Communication and Navigation Disruptions due to lonospheric Disturbance During Solar Minimum	e FYO6	FY08	63791		

Exhibit R-4, RDT&E Schedule Profile		DAT	E February 2(
CTIVITY PE NUMBE nced Component Development and Prototypes (ACD&P) 06037911 Coopera Coopera	R AND TITLE - International Space tive R&D	PROJECT NU 5035 Intl Sp	VIBER AND TITLE Dace Coop R&D
Name of ICR&D Project & In't Agreement Sched	lule Start Dat	e END IA	PE
Hyperspectral Data Exploitation	FY 03	FY 05	63791
Impacts of the Space Environment	FY 03	FY 05	63791
Space Vehicle Orbit Prediction	FY 03	FY 05	63791
Hypersonic Airbreathing Propulsion Test	FY 04	FY 07	63791
Measurement of High-Latitude	FY 04	FY 07	63791
Cooperation in Navigation Warfare Technology	FY 05	FY 07	63791
Forecasting Communication and Navigation Disrupti to lonospheric Disturbance During Solar Minimum	ons due FY06	FY08	63791

Exhibit R-4a, RDT&E Schedule	DATE February	2005		
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603791F International Space Cooperative R&D	ECT NUMBER AND TITLE Intl Space Coop R&I)	
 (U) Schedule Profile (U) Hyperspectral Data Exploitation Algorithm Development and Assessment (U) - Project Agreement signed (U) - Data analysis and algorithm validation (U) - Interim report (U) Impacts of the Space Environment on Comm, Nav, and Surv Sys (U) - Project Agreement signed (U) - Data collection (U) Forecasting Comm. and Navigation Disruption due to Ionospheric Disturbances During Solar Minimum (U) - Project Agreement signed (U) Cooperation in Navigation Warfare Technology (U) - Data collection begins (U) Measurement of High-Latitude Ionospheric Structures and System Effects (U) - Data collection begins 	<u>FY 2004</u> 1Q 1Q 2Q 3Q 4Q 3Q 3Q 3Q	2Q 1Q	FY 2006 1Q 1Q 3Q 4Q 1Q	<u>FY 2007</u> 1Q