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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603791F: <i>International Space Cooperative R&D</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	0.609	0.635	0.642	-	0.642	0.651	0.661	0.670	0.681	Continuing	Continuing
645035: <i>Intl Space Coop R&D</i>	0.609	0.635	0.642	-	0.642	0.651	0.661	0.670	0.681	Continuing	Continuing

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 Atlantic Treaty Organization (NATO) member states and major non-NATO allies and friendly foreign countries. 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 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 technology transition from the laboratory to operational use.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	0.632	0.635	0.644	-	0.644
Current President's Budget	0.609	0.635	0.642	-	0.642
Total Adjustments	-0.023	-	-0.002	-	-0.002
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.023	-			
• Other Adjustments	-	-	-0.002	-	-0.002

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603791F: International Space Cooperative R&D				PROJECT 645035: Intl Space Coop R&D			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
645035: Intl Space Coop R&D	0.609	0.635	0.642	-	0.642	0.651	0.661	0.670	0.681	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 Atlantic Treaty Organization (NATO) member states and major non-NATO allies and friendly foreign countries. 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 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 technology transition from the laboratory to operational use.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Energy Transport by Neutral Winds During Magnetic Storms	0.609	0.285	-	-	-
Description: Energy Transport by Neutral Winds During Magnetic Storms (AFRL and France).					
FY 2010 Accomplishments: Continuation of cooperative project with France for the development of a database of neutral wind values in the Ionosphere-Thermosphere, using the Neutral Wind Meter on Comm/Nav Outage Forecast System together with the STAR accelerometers on the CHAMP and GRACE spacecraft. This cooperative effort will establish a set of unprecedented neutral wind values and allow for the first reliable estimate of neutral energy transport during storms.					
FY 2011 Plans: Continuation of cooperative project with France for the development of a database of neutral wind values in the Ionosphere-Thermosphere, using the Neutral Wind Meter on Comm/Nav Outage Forecast System together with the STAR accelerometers on the CHAMP and GRACE spacecraft. This cooperative effort will establish a set					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603791F: International Space Cooperative R&D		PROJECT 645035: Intl Space Coop R&D			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
of unprecedented neutral wind values and allow for the first reliable estimate of neutral energy transport during storms. FY 2012 Base Plans: FY 2012 OCO Plans:							
Title: Post Mission Analysis of High Frequency (HF) Radar Description: Post Mission Analysis of High Frequency (HF) Radar (AFSPC and Australia). FY 2010 Accomplishments: FY 2011 Plans: Cooperative project with Australia to demonstrate the potential of improved Ballistic Missile Defense and warning applications by fusing Overhead Persistent Infrared Radar data and Australia's High Frequency Radar component technologies/data. FY 2012 Base Plans: Continuation of cooperative project with Australia to demonstrate the potential of improved Ballistic Missile Defense and warning applications by fusing Overhead Persistent Infrared Radar data and Australia's High Frequency Radar component technologies/data. FY 2012 OCO Plans:			-	0.350	0.333	-	0.333
Title: Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace Description: Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace (AFSPC and UK) FY 2010 Accomplishments: FY 2011 Plans: FY 2012 Base Plans:			-	-	0.309	-	0.309

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force				DATE: February 2011							
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</i>		PROJECT 645035: <i>Intl Space Coop R&D</i>							
B. Accomplishments/Planned Programs (\$ in Millions)				FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total			
Cooperative effort with the United Kingdom to increase capabilities to users of current and future military systems adversely affected by the ionosphere											
FY 2012 OCO Plans:											
Accomplishments/Planned Programs Subtotals				0.609	0.635	0.642	-	0.642			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• Activity Not Provided: <i>Title Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
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.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603791F: International Space Cooperative R&D				PROJECT 645035: Intl Space Coop R&D						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
AFRL, WPAFB	Various	AFRL:Dayton, OH	0.120	0.200	Dec 2010	-		-		-	0.000	0.320	0.000	
AFRL, Edwards AFB	Various	AFRL:Edwards, CA	0.389	0.100	Dec 2010	-		-		-	0.000	0.489	0.000	
Space Systems Center	Various	SMC:Los Angeles, CA	-	0.200	Dec 2010	0.542	Feb 2011	-		0.542	0.000	0.742	0.000	
Subtotal			0.509	0.500		0.542		-		0.542	0.000	1.551	0.000	
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
AFRL	Various	AFRL:Edwards, CA	0.100	0.135	Dec 2010	-		-		-	0.000	0.235	0.000	
Space Systems Center	Various	SMC:Los Angeles, CA	-	-		0.100	Jul 2011	-		0.100	0.000	0.100	0.000	
Subtotal			0.100	0.135		0.100		-		0.100	0.000	0.335	0.000	
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			0.609	0.635		0.642		-		0.642	0.000	1.886	0.000	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force						DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603791F: <i>International Space Cooperative R&D</i>			PROJECT 645035: <i>Intl Space Coop R&D</i>			
	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks									

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
3600: Research, Development, Test & Evaluation, Air Force	PE 0603791F: International Space Cooperative	645035: Intl Space Coop R&D
BA 4: Advanced Component Development & Prototypes (ACD&P)	R&D	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603791F: *International Space Cooperative R&D*

PROJECT

645035: *Intl Space Coop R&D*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Energy Transport by Neutral Winds During Magnetic Storms	1	2010	1	2010
- Technical Development	1	2010	4	2010
- Test and analysis	1	2011	4	2011
Post Mission Analysis of High Frequency Radar - Overhead Persistent Infrared Data Fusion Experiments for Early Launch Detection and Tracking	1	2011	1	2011
- Technical Development (1)	1	2011	4	2011
Ionospheric Effects on Intel, Surveillance and Reconnaissance, Space Situational Awareness and Defensive Counterspace	1	2012	4	2016
-Signed Agreement	1	2012	1	2012
-Research, Development, Test, and Evaluation	2	2012	3	2016
Final Report	3	2010	4	2016

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