Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605432F / *Polar MILSATCOM (SPACE)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	104.582	103.552	-	103.552	72.563	51.727	24.930	-	-	357.354
657105: *Polar Satellite Communications*	0.000	-	104.582	103.552	-	103.552	72.563	51.727	24.930	-	-	357.354
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
MDAP/MAIS Code: 121												

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY2014, Project 657105, Polar Satellite Communications, efforts were transferred from PE 0603432F, Polar MILSATCOM (Space), Project 644052, Polar Satellite Communications, in order to transition to Budget Activity 5.

A. Mission Description and Budget Item Justification

This program element acquires the Polar Military Satellite Communications (MILSATCOM) system that provides protected communications (anti-jam and low probability of intercept and detection) for users in the north polar region.

Through FY05, Polar Satellite Communications funded three low data rate (LDR) Milstar packages on three classified host satellites as an expedited, interim solution for protected connectivity requirements in the north polar region (i.e., Interim Polar System (IPS)). Two satellites with hosted packages are required to provide the necessary 24-hour coverage. The third package went into operations in November 2008 to sustain the 24-hour coverage.

In FY06, the DoD began funding the next generation Polar Satellite Communications capability with two more polar packages via the same host vehicle type (i.e., Enhanced Polar System (EPS)). The host spacecraft and the polar communications packages required design modifications that replaced obsolete components and took advantage of the more capable Advanced Extremely High Frequency (AEHF) technology including the eXtended Data Rate (XDR) waveform. The EPS Capability Development Document (CDD), approved by the Joint Requirements Oversight Council in September 2006, is based on a two-package, hosted XDR program with operational availability in CY15 and CY17. The EPS system is comprised of four segments: Payload, Ground Control, Gateway, and Terminal (acquired by each Service's Terminal Program Office). Milestone B is scheduled for FY2014.

The Polar MILSATCOM program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605432F / *Polar MILSATCOM (SPACE)*	

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	124.805	96.782	-	96.782
Current President's Budget	-	104.582	103.552	-	103.552
Total Adjustments	-	-20.223	6.770	-	6.770
• Congressional General Reductions	-	-0.223			
• Congressional Directed Reductions	-	-20.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	6.770	-	6.770

Change Summary Explanation

FY14: -$20.0M, Congressional Directed Reduction for unjustified increase

FY15: +8.163M, funds to the Service Cost Position cost estimate; -$1.393M inflation adjustment

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: EPS	-	104.582	103.552

Description: Develop and acquire EPS MILSATCOM which consists of 1) two Extremely High Frequency payloads, using AEHF's eXtended Data Rate (XDR) waveform, on hosted spacecraft, 2) a standalone Control and Planning Segment to provide command and control and XDR mission planning capability, and 3) one gateway to provide connectivity between polar and mid-latitude users through the Global Information Grid

FY 2013 Accomplishments:

Not applicable.

FY 2014 Plans:

Continue integration of the two EPS payloads onto the host satellites. Will complete the CAPS development and conduct the Critical Design Review (CDR). Will initiate the CAPS build and integration and test. Will continue integration and test of the ground Gateway segment and conduct site preparation planning. Will hold an EPS Milestone B review and conduct an EPS system-level CDR.

FY 2015 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605432F / *Polar MILSATCOM (SPACE)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue integration of Payload #2 onto the host satellite and will conduct Payload #1 test. Will conduct ground Gateway segment installation. Will continue the Control and Planning Segment (CAPS) installation and test, and will verify a fully functional EPS CAPS that fully integrates with all other segments of EPS.			
Accomplishments/Planned Programs Subtotals	-	104.582	103.552

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDT&E: BA04: PE 0603432F: *Polar MILSATCOM (Space)*	77.202	-	-	-	-	-	-	-	-	-	77.202

Remarks

E. Acquisition Strategy

The Enhanced Polar System (EPS) is the follow-on to the currently operational Interim Polar System (IPS) and is a component of the Extremely High Frequency SATCOM architecture providing secure, protected communications to worldwide users. The EPS acquisition consists of four segments (Payload, Ground Control, Gateway, and Terminal) acquired by separate procurement actions. Each EPS payload and its integration onto classified host satellites is funded by the EPS program while the development and integration is performed by the host organization. The MILSATCOM System Directorate will procure the Ground Control and Planning Segment. The Ground Gateway segment, funded by the EPS program, will be organically developed by the Navy's Space and Naval Warfare Systems Center Pacific (SSC-Pacific). The MILSATCOM System Directorate is the prime systems integrator for the EPS payload, ground control, and gateway segments. The Terminals that will use EPS will be acquired by each Service's Terminal Program Office.

F. 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605432F / *Polar MILSATCOM (SPACE)*	Project (Number/Name) 657105 / *Polar Satellite Communications*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Control and Planning Segment	C/CPIF	Northrop Grumman Information Systems : Redondo Beach, CA	0.000	-		50.040	Dec 2013	55.607	Nov 2014	-		55.607	70.495	176.142	-
Gateway architecture development	MIPR	Space and Naval Warfare Systems Command (SPAWAR) Systems Center - Pacific : San Diego, CA	0.000	-		16.585	Dec 2013	9.512	Nov 2014	-		9.512	17.014	43.111	-
EPS Design/Development Contract	SS/CPAF	NGAS : Redondo Beach, CA	0.000	-		10.280	Dec 2013	12.068	Nov 2014	-		12.068	16.589	38.937	-
IC2 Development	MIPR	Lincoln Labs : Boston, MA	0.000	-		1.850	Dec 2013	0.850	Nov 2014	-		0.850	2.400	5.100	-
		Subtotal	0.000	-		78.755		78.037		-		78.037	106.498	263.290	-

Remarks

FY14 funds transferred from PE 0603432F, Project 644052.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering & Integration	C/Various	Linquest : Los Angeles, CA	0.000	-		2.950	Dec 2013	4.420	Nov 2014	-		4.420	11.287	18.657	-
Systems Integration/ Ground Software Support	MIPR	Johns Hopkins University/Applied Physics Lab : Columbia, MD	0.000	-		2.700	Dec 2013	1.280	Nov 2014	-		1.280	2.632	6.612	-
		Subtotal	0.000	-		5.650		5.700		-		5.700	13.919	25.269	-

Remarks

FY14 funds transferred from PE 0603432F, Project 644052.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605432F / *Polar MILSATCOM (SPACE)*	Project (Number/Name) 657105 / *Polar Satellite Communications*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Planning/Management Support for T&E	MIPR	Space and Naval Warfare Systems Center - Pacific : San Diego, CA	0.000	-		0.558	Dec 2013	-		-		-	-	0.558	-
		Subtotal	0.000	-		0.558		-		-		-	-	0.558	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office FFRDC engineering (PMA)	Various	Various : Various,	0.000	-		9.745	Dec 2013	10.037	Nov 2014	-		10.037	19.178	38.960	-
Program Office Support	Various	Various : Various,	0.000	-		1.561	Dec 2013	1.604	Nov 2014	-		1.604	1.952	5.117	-
Travel/Business Ops Support Services/ Acquisition Mission Support (PMA)	Various	Various : Various,	0.000	-		8.313	Dec 2013	8.174	Nov 2014	-		8.174	7.673	24.160	-
		Subtotal	0.000	-		19.619		19.815		-		19.815	28.803	68.237	-

Remarks

FY14 funds transferred from PE 0603432F, Project 644052.

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		104.582		103.552		-		103.552	149.220	357.354	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0605432F / *Polar MILSATCOM (SPACE)*	**Project (Number/Name)** 657105 / *Polar Satellite Communications*

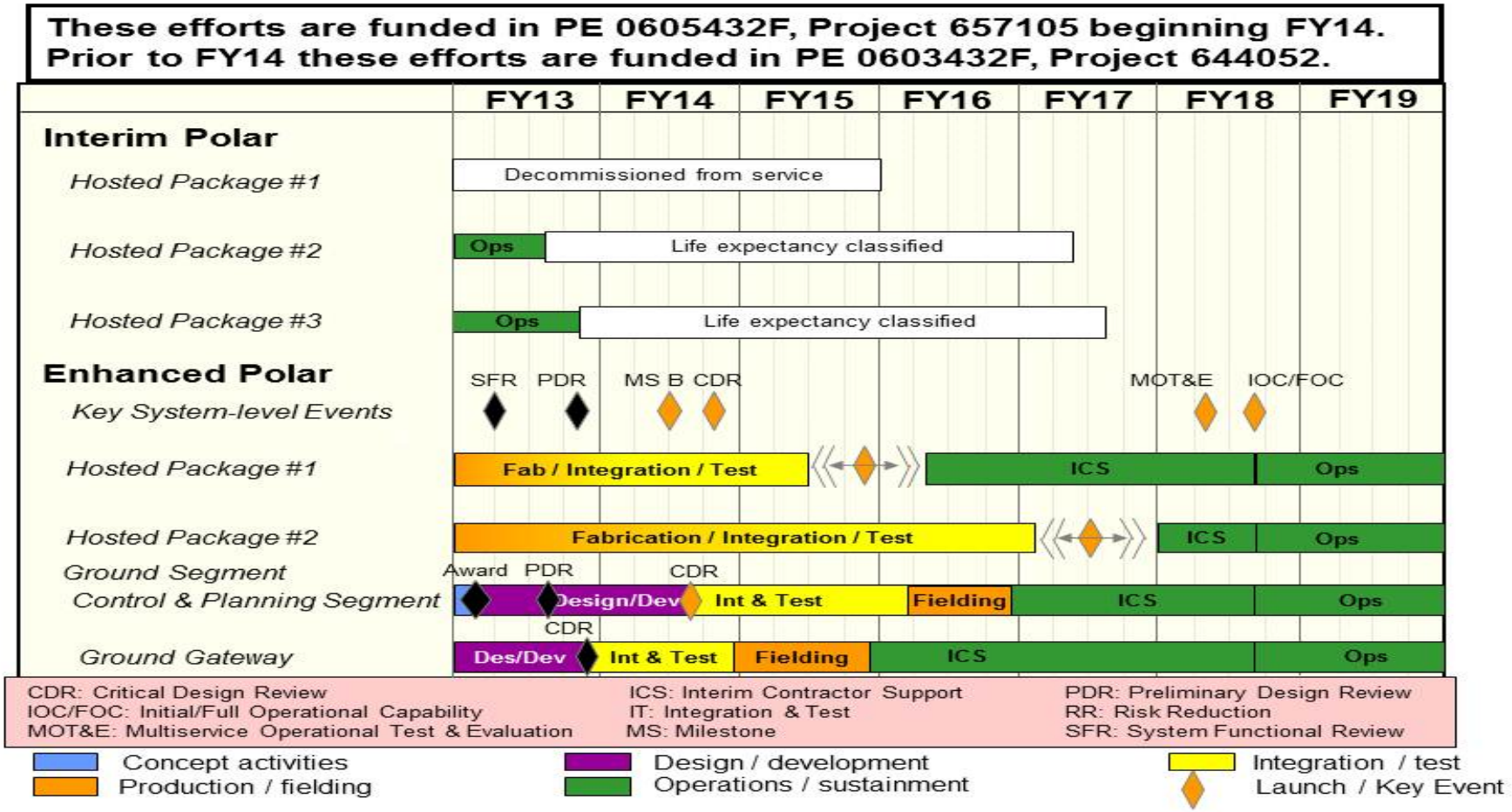

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0605432F / *Polar MILSATCOM (SPACE)*	**Project (Number/Name)** 657105 / *Polar Satellite Communications*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Enhanced Polar System (EPS) Milestone B Review	3	2014	3	2014
Control and Planning Segment (CAPS) Critical Design Review	3	2014	3	2014
EPS system-level Critical Design Review	4	2014	4	2014
Payload #1 available for test	2	2015	2	2015
Gateway Site Install	3	2015	4	2015
Field CAPS	1	2016	4	2016
Launch Payload #2	1	2017	4	2017
Conduct MOT&E	2	2018	2	2018
IOC/FOC declaration	3	2018	3	2018