PE NUMBER: 0207443F
PE TITLE: FAMILY OF INTEROP OPERATIONAL PIC (FIOP)

Exhibit R-2, RDT&E Budget Item Justification							DATE February 2006		

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)					

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	43.440	28.880	0.000	0.000	0.000	42.822	43.568	Continuing	TBD
5137	Family of Interoperable Operational Pictures (FIOP)	43.440	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.607
5187	Single Integrated Air Picture (SIAP)	0.000	28.880	0.000	0.000	0.000	42.822	43.568	Continuing	TBD

In FY06, Project #655137, Family of Interoperable Operational Pictures (FIOP) was terminated by an OSD budget decision. OSD directed the Under Secretary of Defense (AT&L) with the Chairman of the Joint Chiefs of Staff to leverage the Single Integrated Air Picture (SIAP) systems engineering process and the Joint Capabilities Integration and Development System (JCIDS) process to determine and implement the Common Operational Picture (COP) standard to inform the next development milestone for the Joint Command and Control program of record. Project #655187, Single Integrated Air Picture (SIAP) FY07 funding was transferred to PE 0207451F.

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

The Family of Interoperable Operational Pictures (FIOP) is a program designed to implement web-based technologies into Systems of Record, making their data, and thus the Common Operational and Tactical Pictures, consistent throughout the Services and at all echelons of Combat Operations. The Joint Requirements Oversight Council (JROC) directed the FIOP program to "...provide an all-source picture of the Battlespace containing actionable, decision quality information through the fusion of existing databases" in JROC Memorandum 156-02. Ultimately, the FIOP effort will lead to the underpinnings of Network Centric Operational Warfare. The FIOP program focus includes the following areas:

Joint Blue Force Situational Awareness (JBFSA)
Situational Awareness Data Interoperability (SADI)
Tactical Data Link Integration
Precision Fires Support
Network Based Services
Web Enabled Execution Management
Red Force Situational Awareness Picture
Ground Moving Target Indicators (GMTI)
Meterology Oceanography (METOC)
Targeting Interoperability

The air portion of the Common Tactical Picture (CTP), the Single Integrated Air Picture (SIAP), consists of common, continual and unambiguous tracks of airborne objects of interest in the surveillance area. SIAP is derived from real time and near real time data and consists of correlated air object tracks and associated information. SIAP systems integration efforts include, but are not limited to: defining the SIAP Platform Independent Model (PIM) functionality, the required SIAP architecture, and the integration methodology for AF C2 weapons systems.

Exhibit R-2, RDT&E Budget Item Justification	DATE
	February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE
05 System Development and Demonstration (SDD)	**0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)**

These activities are in Budget Activity 5 (System Development and Demonstration) because they support development, integration solutions, fielding, operational support activities, and special projects.

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

		FY 2005	FY 2006	FY 2007
(U)	Previous President's Budget	46.607	29.296	20.450
(U)	Current PBR/President's Budget	43.440	28.880	0.000
(U)	Total Adjustments	-3.167	-0.416	
(U)	Congressional Program Reductions			
	Congressional Rescissions		-0.416	
	Congressional Increases			
	Reprogrammings	-1.858		
	SBIR/STTR Transfer	-1.309		

(U) Significant Program Changes:

In FY06, Project #655137, Family of Interoperable Operational Pictures (FIOP) was terminated by an OSD budget decision. OSD directed the Under Secretary of Defense (AT&L) with the Chairman of the Joint Chiefs of Staff to leverage the Single Integrated Air Picture (SIAP) systems engineering process and the Joint Capabilities Integration and Development System (JCIDS) process to determine and implement the Common Operational Picture (COP) standard to inform the next development milestone for the Joint Command and Control program of record. Project #655187, Single Integrated Air Picture (SIAP) FY07 funding was transferred to PE 0207451F.

Exhibit R-2a, RDT&E Project Justification							DATE **February 2006**		
BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**				PE NUMBER AND TITLE **0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)**			PROJECT NUMBER AND TITLE **5137 Family of Interoperable Operational Pictures (FIOP)**		

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
5137	Family of Interoperable Operational Pictures (FIOP)	43.440	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.607
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

In FY 2006, Project #655137, Family of Interoperable Operational Pictures was terminated. OSD directed the Under Secretary of Defense (AT&L) with the Chairman of the Joint Chiefs of Staff to leverage the Single Integrated Air Picture (SIAP) systems engineering and the Joint Capabilities Integration and Development System (JCIDS) process to determine and implement the Common Operational Picture (COP) standard to inform the next development milestone for the Joint Command and Control program of record.

(U) A. Mission Description and Budget Item Justification

FIOP was comprised of the following six integrated product teams. They are of varying size, scope and longevity.

(1) Joint Blue Force Situational Awareness (JBFSA) - Many DoD systems provide data regarding friendly forces. There is no single system or mission application that provides a totally integrated (i.e., all blue force data) set of data to the warfighter. This task will perform the systems engineering, architecture development, and integration activities leading to a secure, web-based blue force data dissemination network service. This task is being led by the Army and is being done in coordination with the Blue Force Tracking and Single Integrated Ground Picture programs and the Joint Blue Force Situational Awareness Advanced Concept Technology Demonstration.

(2) Situational Awareness Data Interoperability - This task will allow the bidirectional sharing of data with our coalition partners through the development of a Common Operational Environment (COE)-compliant, web-based network gateway mission application and development of an Interface Control Document.

(3) Tactical Data Link Integration -Improves the integration of the multi-Tactical Data Link (TADIL) networks of the Joint Data Network (JDN) and the Global Command and Control Systems (GCCS) Family of Systems (FoS) of the Joint Planning Network (JPN). The evolving primary mechanism for supporting this type of integration is the Multi-TADIL Capability segment, which provides the ability to establish two-way interfaces between GCCS FoS and Link 11/16 (via the Air Defense Systems Integrator). The objective of this effort is to expand and strengthen this integration, with a focus on near-term delivery of warfighting capability, but is simultaneously designed to support a longer range transition to architectures that converge the JDN and JPN environments and evolve the GCCS FoS to Joint Command and Control and finally the Link processors to a converged implementation.

(4) Precision Fires Support - Ground Fires systems require accurate target coordinates. This task will provide web-based Global Positioning Systems enhanced target coordinates to those systems. This is a critical element of the DoD's efforts to reduce fratricide while increasing combat effectiveness.

(5) Network Based Services - For several FIOP tasks, an implicit requirement is that the network infrastructure can support the information being promulgated in a warfighting environment. The collective set of infrastructure components that can provide the network based services support can be referred to as the common integrated infrastructure (CII). This task includes support for the development of those CII components that will be made part of the Command and Control (C2) Enterprise and enable the use of the web-based network services that were developed for the C2 Community of Interest. The CII provides smart adaptive services that

Exhibit R-2a, RDT&E Project Justification	DATE February 2006

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	PROJECT NUMBER AND TITLE 5137 Family of Interoperable Operational Pictures (FIOP)

allow warfighters to rapidly access, manipulate and display trusted data in a changing environment.

(6) Web Enabled Execution Management - This task provides new, web-based tools to Operations Center personnel that are used during the execution of the battle. These tools are comprised of mission managers and task coordination managers and use the standard DoD COE set of mission applications and segments. These tools will provide greater horizontal and vertical integration of the Joint Forces Commander's decisions.

This activity is in Budget Activity 5 (System Development and Demonstration) because it supports development, integration solutions, fielding, operational support activities, and special projects.

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

	FY 2005	FY 2006	FY 2007
(U) No Activity			
(U) Web Enabled Execution Management Spirals 4 & 5	15.660		
(U) Situational Awareness Data Interoperability	1.410		
(U) Network Based Services	5.047		
(U) Precision Fires Support	4.920		
(U) Joint Blue Force Situational Awareness	12.693		
(U) Tactical Data Link Integration	3.710		
(U) Total Cost	43.440	0.000	0.000

(U)   C. Other Program Funding Summary ($ 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 Cost
(U) AF RDT&E									

(U)   D. Acquisition Strategy

JROC-directed activity to spiral develop, integrate, and sustain web-enabled COP capabilities that are interoperable with existing Service systems by identifying execution-level requirements and candidate solutions which will be tested and then migrated to Service Systems of Record for sustainment using an acquisition strategy normally composed of pre-competed existing contracts.

Project 5137	R-1 Shopping List - Item No. 98-5 of 98-13	Exhibit R-2a (PE 0207443F)

Exhibit R-3, RDT&E Project Cost Analysis		DATE February 2006

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)**	PROJECT NUMBER AND TITLE **5137 Family of Interoperable Operational Pictures (FIOP)**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Web Enabled Execution Management												
	Various	Various		15.660	Dec-04			0.000			15.660	14.000
Subtotal Web Enabled Execution Management			0.000	15.660		0.000		0.000		0.000	15.660	14.000
Remarks:	The WEEMC effort has been planned, programmed and budgeted in prior years in PE0207438F. This is not a New Start											
(U) Tactical Data Link Integration												
	MIPR	Various contractors managed by SPAWAR PM-157, San Diego, CA		3.710	Dec-04	0.000		0.000			3.710	3.710
Subtotal Tactical Data Link Integration			0.000	3.710		0.000		0.000		0.000	3.710	3.710
Remarks:	This effort has been planned, programmed and budgeted in prior years in PE0604754F. This is not a new start.											
(U) Situational Awareness Data Interoperability												
	MIPR	Various contractors managed by CECOM PEO/C3T		1.410	Feb-05			0.000			1.410	1,410.000
Subtotal Situational Awareness Data Interoperability			0.000	1.410		0.000		0.000		0.000	1.410	1,410.000
Remarks:	This effort has been planned, programmed and budgeted in prior years in PE0604754F. This is not a new start.											
(U) Network Based Services												
	Various	Various contractors managed by HQ ESC/NI-2, Hanscom AFB, MA		5.047	Jan-05						5.047	7.047
Subtotal Network Based Services			0.000	5.047		0.000		0.000		0.000	5.047	7.047
Remarks:	This effort has been planned, programmed and budgeted in prior years in PE0604754F. This is not a new start.											
(U) Joint Blue Force Situational Awareness												
	MIPR	Various contractors managed by HQ Dept of Army/G8, Washington DC		12.693	Mar-05						12.693	13.860

Project 5137	R-1 Shopping List - Item No. 98-6 of 98-13	Exhibit R-3 (PE 0207443F)

Exhibit R-3, RDT&E Project Cost Analysis	DATE February 2006

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	PROJECT NUMBER AND TITLE 5137 Family of Interoperable Operational Pictures (FIOP)

Subtotal Joint Blue Force Situational Awareness			0.000	12.693	0.000	0.000	0.000	12.693	13.860
Remarks:		This effort has been planned, programmed and budgeted in prior years in PE0603850F. This is not a new start.							
(U) Precision Fires Support									
	MIPR	Various contractors managed by USMC Systems Command, Quantico, VA	4.920	Jan-05				4.920	4.920
Subtotal Precision Fires Support			0.000	4.920	0.000	0.000	0.000	4.920	4.920
Remarks:		This effort has been planned, programmed and budgeted in prior years in PE0604754F. This is not a new start.							
(U) Red Force Picture Distribution								0.000	0.000
Subtotal Red Force Picture Distribution			0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:									
(U) Targeting Interoperability					0.000			0.000	0.000
Subtotal Targeting Interoperability			0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:									
(U) Ground Moving Target Indicators					0.000			0.000	0.000
Subtotal Ground Moving Target Indicators			0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:									
(U) Meteorology and Oceanographic								0.000	0.000
Subtotal Meteorology and Oceanographic			0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:									
(U) Total Cost			0.000	43.440	0.000	0.000	0.000	43.440	1,453.537

Exhibit R-4, RDT&E Schedule Profile	DATE February 2006

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	PROJECT NUMBER AND TITLE 5137 Family of Interoperable Operational Pictures (FIOP)

FIOP Milestone Schedule

FY	2003	2004	2005	2006	2007	2008	2009
JBMC2		▲SBWG/JFCOM Eng Plan ▲					
WEEMC	▲ Cont Award Spiral	▲ 1 ▲ 2 ▲ 3	▲ 4 ▲ 5				
COP W/S	▲C2PC V5.9	C2PC V6.0 Delivery – Tactical COP Wor					
JBFSA		CONOPS	▲ Integrated ▲				
TDL Int.	CONOPS	▲ ▲ SP. 1	▲ SP. 2				
SADI		▲ SP. 1	▲ 2 ▲ 3				
NBS	Cross System WTP Info-Service	▲ NBS Guidance to C2COI	▲				
Prec Fires Sppt.		▲ SP. 1	▲ SP. 2				

In FY06, Project #655137, Family of Interoperable Operational Pictures was terminated by an OSD budget decision

Project 5137	R-1 Shopping List - Item No. 98-8 of 98-13	Exhibit R-4 (PE 0207443F)

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2006

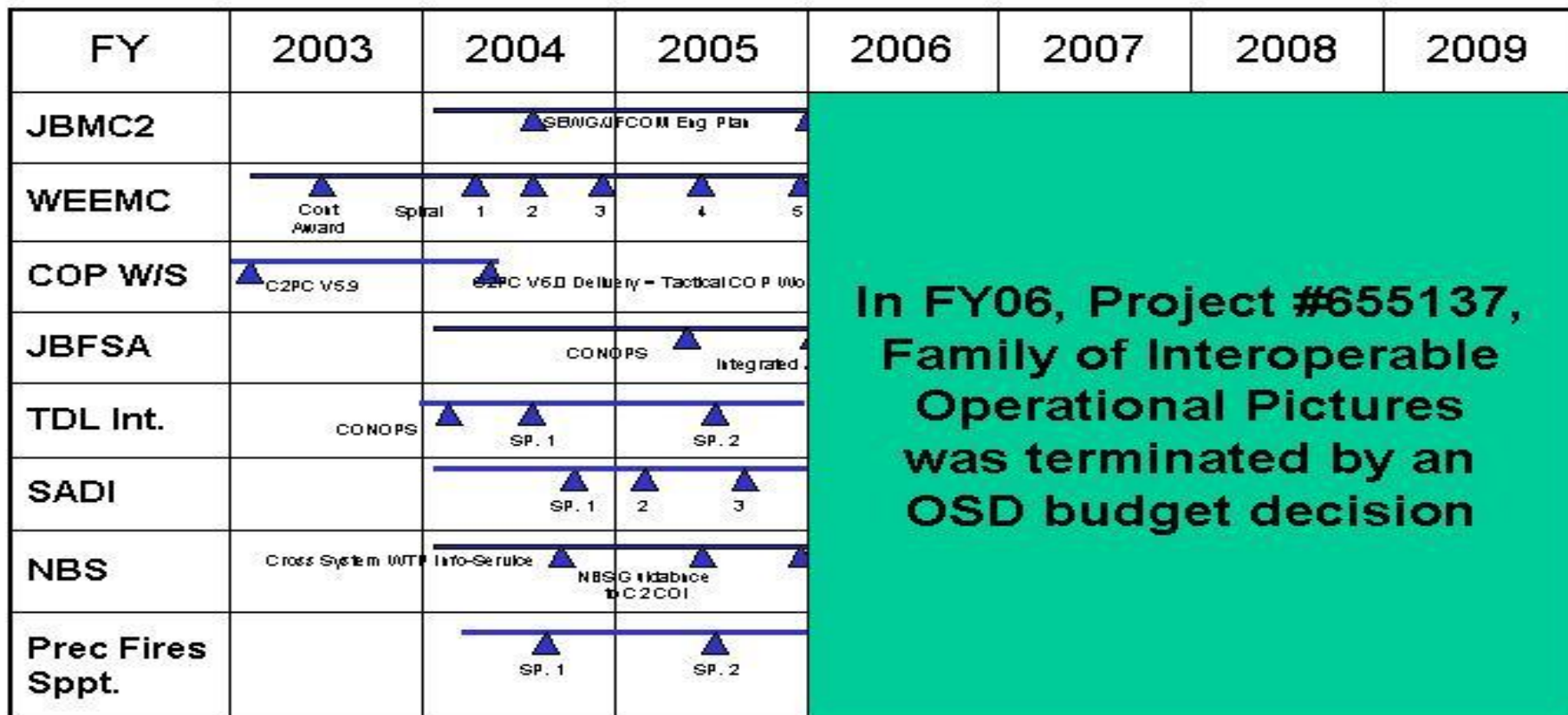| BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	PROJECT NUMBER AND TITLE 5137 Family of Interoperable Operational Pictures (FIOP)

(U) **Schedule Profile**	FY 2005	FY 2006	FY 2007
(U) WEEMC Spiral 4 Delivery	2Q		
(U) WEEMC Spiral 5 Delivery	4Q		
(U) JBMC2 - FIOP Sys. Engineering Working Group (SEWG) and JFCOM Initial Engineering Plan Completed--Updates Follow	2Q		
(U) JBMC2 - Semi Annual Architectural Updates	1&3Q		
(U) JBFSA - CONOPS Complete	2Q		
(U) JBFSA - 1st iteration of Integrated and Operational Architectures feeding into Integrated Capability Delivery	4Q		
(U) TDL Integration - Spiral 2 Delivery	3Q		
(U) SADI - Spiral 2	2Q		
(U) SADI - Spiral 3	3Q		
(U) NBS - C2 Community of Interest Guidance published	2Q		
(U) Precision Fires Suppt. - Spiral 2	3Q		

Exhibit R-2a, RDT&E Project Justification	DATE February 2006

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	PROJECT NUMBER AND TITLE 5187 Single Integrated Air Picture (SIAP)

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
5187 Single Integrated Air Picture (SIAP)	0.000	28.880	0.000	0.000	0.000	42.822	43.568	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

Project #655187, Single Integrated Air Picture (SIAP) FY07 funding was transferred to PE 0207451F.

(U)   A. Mission Description and Budget Item Justification

The implementation of the SIAP Block 0 (zero) consists of the implementation of three Interface Change Proposals (ICPs) [Correlation/Decorrelation, ID Taxonomy, and ID Conflict Resolution] across ten AF weapons systems. The Block 0 schedule for implementation has various completion dates across the ten weapons systems with all being completed in 2008.

The Model Driven Architecture (MDA) approach will provide enhanced interoperability by implementing Joint common Battle Management Command and Control (BMC2) functionality in weapons systems, thus enabling more accurate situational awareness, and reduced fratricide. The SIAP funding in PE 0207443F integrates the SIAP functionality into initial Air Force weapons system (e.g., E-3 AWACS, Battle Control System [BCS], RC-135V/W RIVET JOINT).

The Air Force is applying expertise in the various AF weapons System Program Offices (SPOs) to assist with defining the SIAP Platform Independent Model (PIM) functionality, the required SIAP architecture, and the integration methodology for AF C2 weapons systems. This effort funds AF specific, SIAP-related engineering efforts and the independent verification/validation efforts for AF weapon system-specific models used in SIAP integration. Also, the Air Force has staff working on site with the Joint SIAP Systems Engineering Office (JSSEO) to help define and develop the functional content of the SIAP PIM scheduled for delivery 2005. BCS will be integrating on Air Force platforms September 2007.

This activity is in Budget Activity 5 (System Development and Demonstration) because it supports development, integration solutions, fielding, operational support activities, and special projects.

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

			FY 2005	FY 2006	FY 2007
(U)	BLOCK 0			6.200	
(U)	MDA Integrating and Implementation			22.680	
(U)	Total Cost		0.000	28.880	0.000

(U)   C. Other Program Funding Summary ($ 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 Cost
(U) RDT&E									
(U) 0207434F Link 16 Support & Sustainment	32.886	10.800	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U)   D. Acquisition Strategy

The Air Force SIAP Program Office (SPO) provides for common development and integration across multiple Air Force platforms via existing contract mechanisms.

Project 5187	R-1 Shopping List - Item No. 98-10 of 98-13	Exhibit R-2a (PE 0207443F)

Exhibit R-3, RDT&E Project Cost Analysis	DATE February 2006

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)**	PROJECT NUMBER AND TITLE **5187 Single Integrated Air Picture (SIAP)**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
AWACS Block 30/35 Block 0 Corr/Decorr	CPIF	Boeing Seattle, WA				6.200	Nov-05				6.200	
Integration Resource Center	CPFF	Alphatech Burlington, MA				3.500	Nov-05		Nov-06	Continuing	TBD	
MDA Integration and Implementation	TBD	TBD				14.180	Nov-05		Nov-06	Continuing	TBD	
Subtotal Product Development			0.000	0.000		23.880		0.000		Continuing	TBD	0.000
Remarks:												
(U) Support												
ESC	C/FFP	Titan Corp, Odyssey Consulting Group, BTAS, Inc, MITRE				5.000	Oct-05		Oct-06	Continuing	TBD	
Subtotal Support			0.000	0.000		5.000		0.000		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Management											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U)											0.000	
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	0.000		28.880		0.000		Continuing	TBD	0.000

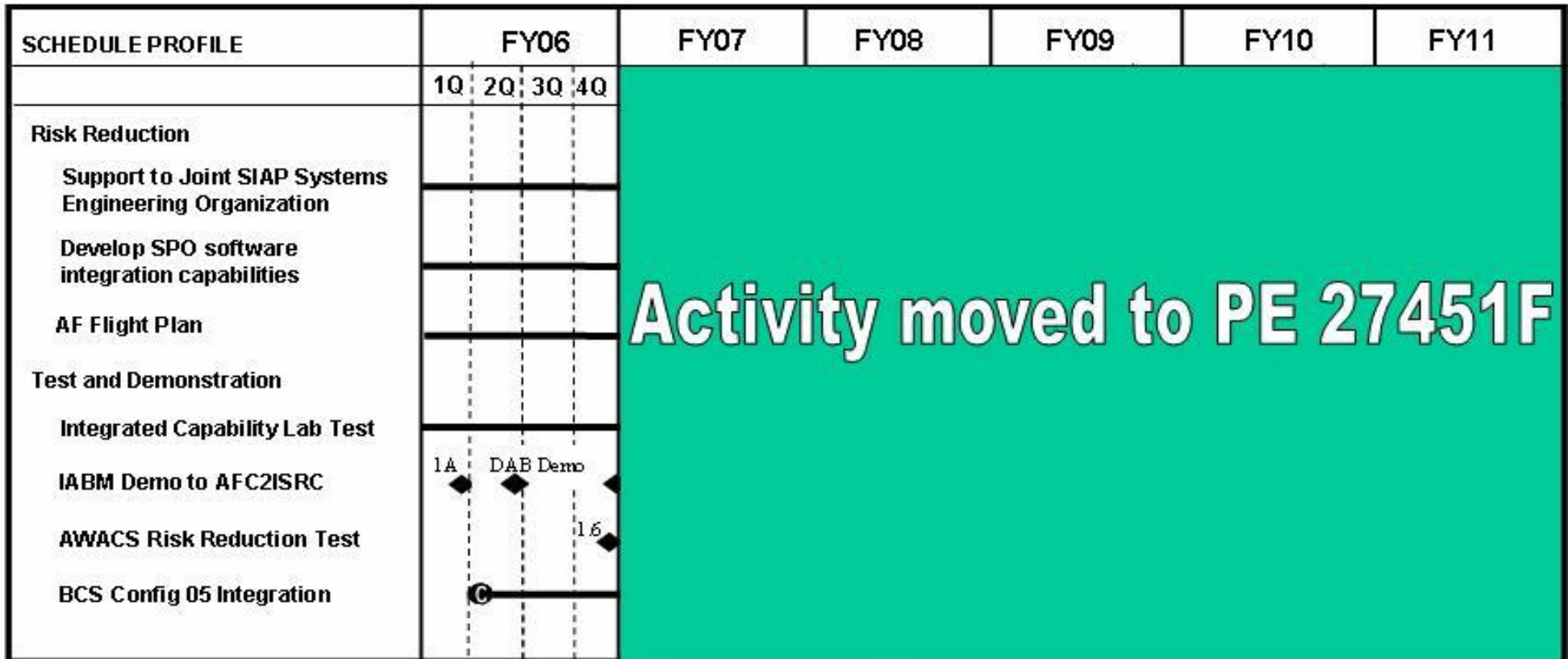| Exhibit R-4, RDT&E Schedule Profile	DATE February 2006

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	PROJECT NUMBER AND TITLE 5187 Single Integrated Air Picture (SIAP)

SCHEDULE PROFILE	FY06	FY07	FY08	FY09	FY10	FY11
	1Q 2Q 3Q 4Q					
Risk Reduction						
Support to Joint SIAP Systems Engineering Organization						
Develop SPO software integration capabilities						
AF Flight Plan						
Test and Demonstration						
Integrated Capability Lab Test						
IABM Demo to AFC2ISRC	1A DAB Demo					
AWACS Risk Reduction Test	1.6					
BCS Config 05 Integration	C					

Activity moved to PE 27451F

Legend
Contract Award **C** Development — End Date ◆

Project 5187	R-1 Shopping List - Item No. 98-12 of 98-13	Exhibit R-4 (PE 0207443F)

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2006

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)**	PROJECT NUMBER AND TITLE **5187 Single Integrated Air Picture (SIAP)**

(U) **Schedule Profile**	FY 2005	FY 2006	FY 2007
(U) Support to Joint SIAP Systems Engineering Support Office	1-4Q	1-4Q	
(U) Develop SPO software integration capabilities	1-4Q	1-4Q	
(U) AF SIAP Flight Plan	1-4Q	1-4Q	
(U) Integrated Capability Lab Test	1-4Q	1-4Q	
(U) IABM Demo to Air Force C2ISR Center	1-3Q		
(U) E-10/SIAP Prototype Lab Demo	4Q	1-3Q	
(U) AWACS Risk Reduction Test	1-4Q	1-4Q	
(U) BCS Config 05 Integration	4Q	1-3Q	

Project 5187

Exhibit R-4a (PE 0207443F)