PE NUMBER: 0207423F
PE TITLE: Advanced Communications Systems

Exhibit R-2, RDT&E Budget Item Justification	DATE: February 2006
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0207423F Advanced Communications Systems

	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	17.940	28.501	52.112	61.670	60.182	56.356	60.499	Continuing	TBD
4934	Tactical Air Control Party (TACP)	17.940	11.554	8.537	8.977	5.893	6.069	6.085	Continuing	TBD
5189	C2ISR JTRS Integration	0.000	16.947	43.575	52.693	54.289	50.287	54.414	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting air operations, aerospace C2 aircraft/agencies and Intelligence, Surveillance and Reconnaissance (ISR) aircraft/agencies. The TACP-Modernization (TACP-M) Program is intended to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and video technology available to improve the system's Situational Awareness (SA), increase targeting accuracy, reduce kill chain decision time, provide more mobility and flexibility, improve data flows/information exchange and increase joint and multinational interoperability and reduce fratricide. TACP-M is divided into two segments: Dismounted and Vehicular. The dismounted TACP provides a modernized capability via a streamlined acquisition using non-developmental, Commercial off-the-shelf (COTS) Manpack Radios (MPR) and Handheld Radios (HHR), Laser Targeting Devices (LTD), and ruggedized mission computers combined with TACP SA software. In Sep 2005, the TACP-M program withdrew from the JTRS Cluster 1 program due to program (cost, schedule, techincal) delays. The Air Force directed the program to develop and interim Vehicular Communications System (VCS) using legacy technology until JTRS sets are available.

The integration of capability via Joint Tactical Radio System (JTRS) will provide Command and Control and Intelligence, Surveillance and Reconnaissance platforms with a common family of software programmable radios for reliable multi-channel voice, data, imagery, and video communications. JTRS radios will be modular, scalable, and network ready. The funding provides such capabilities on various C2 and ISR platforms to include Global Hawk, Predator, AWACS, Rivet Joint, and JSTARS and non-traditional ISR platform such as F-22 and F-15E. These platforms will integrate an airborne network capability through JTRS along with selected legacy waveforms as required to meet mission and joint interoperability requirements. The airborne network will provide unprecedented capabilities allowing the platforms to exchange voice and data in a heterogeneous environment, including service-only, joint, coalition, and allied operations. This capability requires systems engineering efforts to standardize critical network parameters to permit the easy transmission and receipt of time-sensitive data that will give the tactical warrior transformational capabilities. Physical, functional, and data integration on the platforms will be resolved as part of this integration and engineering standardization. Information assurance system engineering will ensure the data exchange capabilities will meet operational commander, theatre, and national requirements in a multi-enclave environment.

This program is in budget activity 7, Operational System Development, since it examines appropriate emerging technologies for the continuing spiral development of commercial (COTS) equipment, provides software development, and determines and resolves integration issues pertaining to COTS.

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems

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

		FY 2005	FY 2006	FY 2007
(U)	Previous President's Budget	18.040	28.938	0.000
(U)	Current PBR/President's Budget	17.940	28.501	52.112
(U)	Total Adjustments	-0.100	-0.437	
(U)	Congressional Program Reductions	-0.100	-0.022	
	Congressional Rescissions		-0.415	
	Congressional Increases			
	Reprogrammings			
	SBIR/STTR Transfer			

(U) Significant Program Changes:

FY07 increase PE is related to C2ISR JTRS Integration efforts for system engineering, interoperability planning and testing associated with airborne networking integration, network standardization, and information assurance.

Exhibit R-2a, RDT&E Project Justification			DATE: February 2006
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0207423F Advanced Communications Systems	PROJECT NUMBER AND TITLE: 4934 Tactical Air Control Party (TACP)	

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
4934	Tactical Air Control Party (TACP)	17.940	11.554	8.537	8.977	5.893	6.069	6.085	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting air operations, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) aircraft/agencies. TACP-M provides TACP and Air Support Operations Centers (ASOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) joint air request net (JARN) operations. The TACP-Modernization (TACP-M) Program is intended to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and video (i.e. Remote Operations Video Enhanced Receivers (ROVER III)) technology available to improve the system's Situational Awareness (SA), increase targeting accuracy, reduce kill chain decision time, provide more mobility and flexibility, improve data flows/information exchange and reduce fratricide. This will increase joint and multinational interoperability in direct support to the Army Modular Force Program. TACP-M is divided into two segments: Dismounted and Vehicular. The dismounted TACP provides a modernized/modular capability via a streamlined acquisition using non-developmental, commercial off-the-shelf (COTS) Manpack Radios (MPR) and Handheld Radios (HHR), Laser Targeting Devices (LTD), and ruggedized mission computer combined with TACP SA software. The TACP-M program is an active participant in the GWOT and continues to significantly increase the mission effectiveness of the TACPs and ASOCs during Operations Enduring and Iraqi Freedom. The TACP-M program was also instrumental in establishing ground communications support during recent Hurricanes (Katrina and Rita) strikes upon the US.

This program is in budget activity 7, Operational System Development, since it examines appropriate emerging technologies for the continuing spiral development of commercial (COTS) equipment, provides software development, and determines and resolves integration issues pertaining to COTS.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2005	FY 2006	FY 2007
(U) Continue JTRS TACP Vehicular Communication System (VCS) hardware development	12.416	5.734	4.553
(U) Software development and System integration	4.523	5.511	1.890
(U) Operational and interoperability test planning	1.001	0.309	2.094
(U) Total Cost	17.940	11.554	8.537

(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) Advanced Communications System Other Procurement, AF	37.037	16.407	58.791	124.036	140.415	99.019	93.964	Continuing	TBD

Exhibit R-2a, RDT&E Project Justification		DATE February 2006
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207423F Advanced Communications Systems**	PROJECT NUMBER AND TITLE **4934 Tactical Air Control Party (TACP)**

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

PE 0207423F

(U) D. Acquisition Strategy

The TACP-M is executing an incremental/spiral development for the dismounted segment. System engineering, design, integration, and fielding support is being provided under a full and open competition award (Time and Materials (T&M)). The prototype Vehicular Communication System (VCS) is a current effort with Naval Surface Warfare Center-Crane, IN. This also is a T&M effort which will assist with the generation of key acquisition/contractual documentation (CONOPS, TTPs, ICDs, and TRD) for the FY07 full and open competition award. This contract will deliver an integrated system (both segments) with an emphasis on Reduced Total Ownership Cost (RTOC) over the life cycle of the program.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: **February 2006**

BUDGET ACTIVITY: **07 Operational System Development**

PE NUMBER AND TITLE: **0207423F Advanced Communications Systems**

PROJECT NUMBER AND TITLE: **4934 Tactical Air Control Party (TACP)**

(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												
Boeing Company	C/PAF	Army Tactical Command & Control Sys, Ft Monmouth, NJ		10.558	Nov-04					0.000	10.558	TBD
ESC Sys Int Software Dev't	T&M	MultiMax, Inc. Largo, Maryland		4.009	Nov-04	6.332	Nov-05	2.011	Nov-06	Continuing	TBD	TBD
VCS (JTRS compliant radios or alternate systems)						1.886	Apr-06	2.764	Apr-07	Continuing	TBD	TBD
Subtotal Product Development			0.000	14.567		8.218		4.775		Continuing	TBD	TBD
Remarks:												
(U) Support												
ESC	C/FFP	Various		2.372	Oct-04	3.027	Oct-05	1.668	Oct-06	Continuing	TBD	TBD
Subtotal Support			0.000	2.372		3.027		1.668		Continuing	TBD	TBD
Remarks:												
(U) Test & Evaluation												
Test Agency Support	MIPR	Various		1.001	Nov-04	0.309	Nov-05	2.094	Nov-06	Continuing	TBD	TBD
Subtotal Test & Evaluation			0.000	1.001		0.309		2.094		Continuing	TBD	TBD
Remarks:												
(U) Management												
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	17.940		11.554		8.537		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems	PROJECT NUMBER AND TITLE 4934 Tactical Air Control Party (TACP)

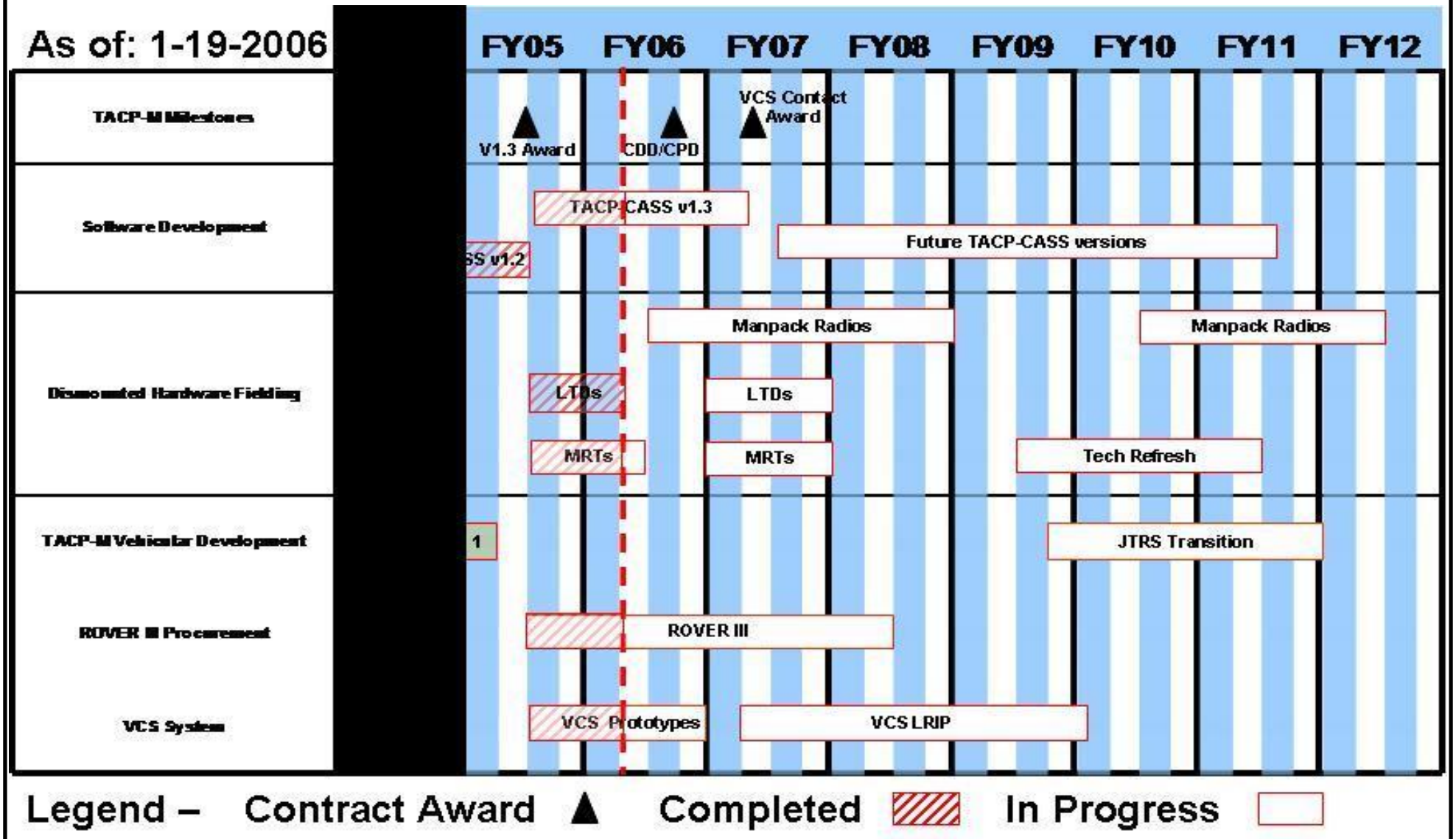

Exhibit R-4a, RDT&E Schedule Detail		DATE February 2006
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207423F Advanced Communications Systems**	PROJECT NUMBER AND TITLE **4934 Tactical Air Control Party (TACP)**

(U) **Schedule Profile**	FY 2005	FY 2006	FY 2007
(U) TACP-CASS v1.3 Contract award	3Q		
(U) CDD/CPD		3Q	
(U) VCS Contract Award			2Q
(U) Software Development - TACP-CASS v1.2	1-2Q		
(U) Software Development - TACP-CASS v1.3	3-4Q	1-4Q	1Q
(U) Software Development - Future TACP-CASS Versions			3-4Q
(U) Dismounted Hardware Fielding - Manpack Radios		3-4Q	1-4Q
(U) Dismounted Hardware Fielding - LTDs	3-4Q	1Q	1-4Q
(U) Dismounted Hardware Fielding - Ruggedized Computers	3-4Q	1-2Q	1-4Q
(U) TACP-M Vehicular Development (JTRS)	1Q		
(U) ROVER III	3-4Q	1-4Q	1-4Q
(U) VCS System	3-4Q	1-4Q	2-4Q

Exhibit R-2a, RDT&E Project Justification

DATE: **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0207423F Advanced Communications Systems**	**5189 C2ISR JTRS Integration**

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
5189 C2ISR JTRS Integration	0.000	16.947	43.575	52.693	54.289	50.287	54.414	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The integration of capability via Joint Tactical Radio System (JTRS) will provide C2 and ISR platforms with a common family of software programmable radios for reliable multi-channel voice, data, imagery, and video communications. JTRS radios will be modular, scalable, and network ready. The funding provides such capabilities on various C2 and ISR platforms to include Global Hawk, Predator, AWACS, Rivet Joint, and JSTARS. These platforms will integrate an airborne network capability through JTRS along with selected legacy waveforms as required to meet mission and joint interoperability requirements. The airborne network will provide unprecedented capabilities allowing the platforms to exchange voice and data in a heterogeneous environment, including the service-only, joint, coalition, and allied operations. This capability requires systems engineering efforts to standardize critical network parameters to permit the easy transmission and receipt of time-sensitive data that will give the tactical warrior transformational capabilities. Physical, functional, as well as data integration onto the platforms will be resolved as part of this integration and engineering standardization. Information assurance system engineering will ensure the data exchange capabilities will meet operational commander, theatre, and national requirements in a multi-enclave environment.

C2ISR JTRS program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2005	FY 2006	FY 2007
(U) System Engineering		6.778	17.430
(U) Planning and Integration		5.932	15.251
(U) Operational and interoperability test planning		4.237	10.894
(U) Total Cost	0.000	16.947	43.575

(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) Advanced Communication System-Aircraft Procurement, AF PE 0207423F		17.594	0.000	70.297	192.760	236.980	331.025		848.656
(U) Advanced Communication System-Other Procurement, AF PE 0207423F		11.404	39.514	112.760	161.941	168.992	246.383		

(U) D. Acquisition Strategy

All major contracts within this Program Element and progam will be awarded through a full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: **February 2006**

BUDGET ACTIVITY: **07 Operational System Development**

PE NUMBER AND TITLE: **0207423F Advanced Communications Systems**

PROJECT NUMBER AND TITLE: **5189 C2ISR JTRS Integration**

(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												
System Engineering	TBD	Electronic Systems Center (Various), Hanscom AFB, MA		0.000		2.237	Feb-06	5.752	Nov-06	Continuing	TBD	TBD
System Engineering	MIPR/TBD	ASC/AA (Various), Wright-Patters on AFB, OH				4.541	Feb-06	11.678	Nov-06	Continuing	TBD	TBD
Planning and Integration	TBD	Electronic Systems Center (Various), Hanscom AFB, MA				1.958	Feb-06	5.033	Nov-06	Continuing	TBD	TBD
Planning and Integration	MIPR/TBD	ASC/AA (Various), Wright-Patters on AFB, OH				3.974	Feb-06	10.218	Nov-06	Continuing	TBD	TBD
Operational and Interoperability Test Planning	MIPR/TBD	Test Agency Support (Various)				4.237	Feb-06	10.894	Nov-06	Continuing	TBD	TBD
Subtotal Product Development			0.000	0.000		16.947		43.575		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			0.000	0.000		16.947		43.575		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems	PROJECT NUMBER AND TITLE 5189 C2ISR JTRS Integration

C2ISR JTRS Schedule

As of: 17 Jan 06

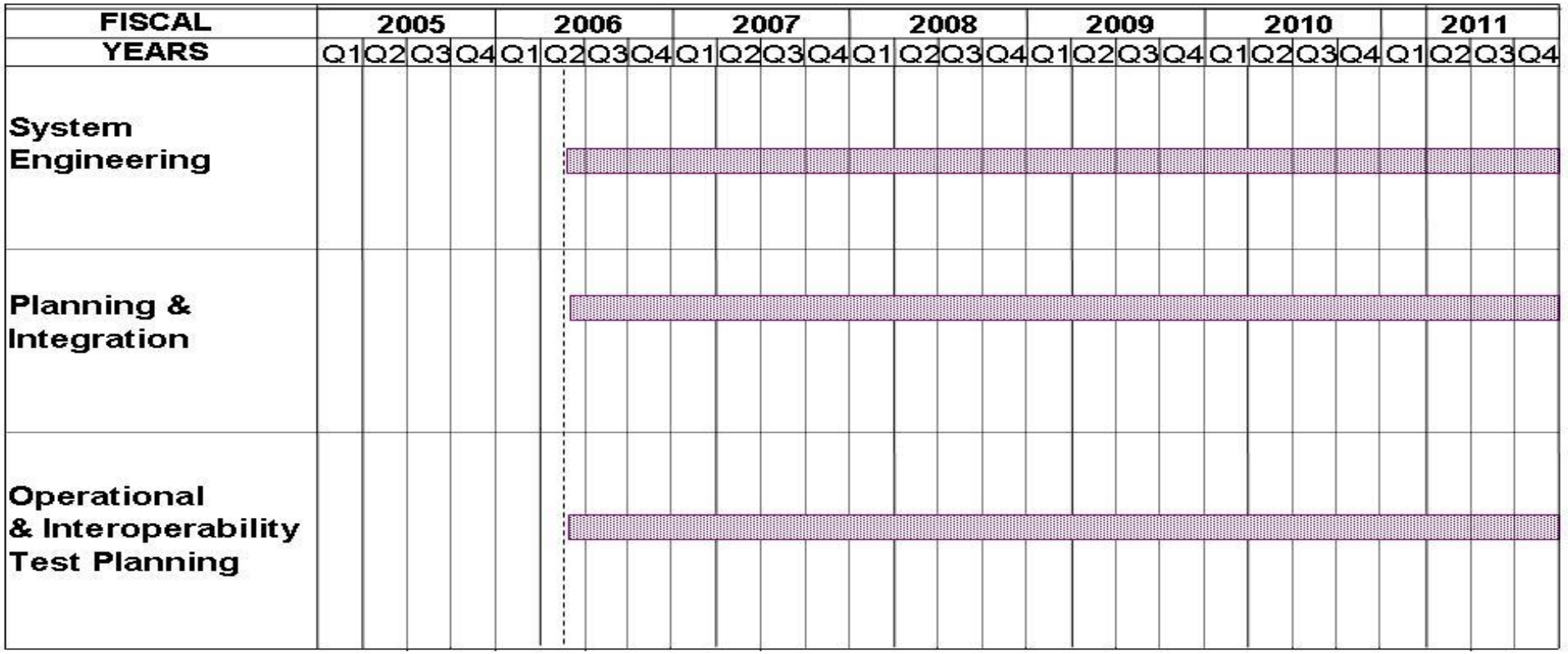

Exhibit R-4a, RDT&E Schedule Detail		DATE: February 2006
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0207423F Advanced Communications Systems	PROJECT NUMBER AND TITLE: 5189 C2ISR JTRS Integration

(U) Schedule Profile	FY 2005	FY 2006	FY 2007
(U) ESC System Engineering Effort		2-4Q	1-4Q
(U) ASC/AA System Engineering Effort		2-4Q	1-4Q
(U) ESC Planning and Integration Contract Award		2-4Q	1-4Q
(U) ASC/AA Planning and Integration Contract Award		2-4Q	1-4Q
(U) Operational & Interoperability Test Planning Efforts		2-4Q	1-4Q