PE NUMBER: 0305206F
PE TITLE: Airborne Reconnaissance Systems

Exhibit R-2, RDT&E Budget Item Justification

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

	Cost ($ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	55.711	52.624	64.869	67.003	66.624	63.326	63.444	64.659	Continuing	TBD
4818	Imaging and Targeting Support	17.652	15.594	26.951	27.441	26.203	22.465	21.824	22.209	Continuing	TBD
4819	Common Data Link (CDL)	35.357	35.539	36.161	37.891	38.811	39.307	40.036	40.834	Continuing	TBD
5038	Network Centric Collaborative Targeting	0.952	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	TBD
5092	JTC/SIL MUSE	1.750	1.491	1.757	1.671	1.610	1.554	1.584	1.616	Continuing	TBD

- FY06, Project Number 675038, Network Centric Collaborative Targeting (NCCT) ACTD was completed and program developments were transfered to PE 0305221F, as Project 675197.

(U) A. Mission Description and Budget Item Justification

The Airborne Reconnaissance Systems program coordinates the development of advanced airborne reconnaissance system technologies (sensors, data links, targeting networks and products, and quick reaction capabilities) in support of multiple airborne reconnaissance platforms, both manned and unmanned. Its objective is to develop, demonstrate, and rapidly transition advanced, interoperable, multi-platform solutions to reduce the find, fix, target, and track kill chain timeline. This program also coordinates the development of common collection, processing, and dissemination solutions for near-real time intelligence, surveillance, and reconnaissance (ISR).

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

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

		FY 2006	FY 2007	FY 2008	FY 2009
(U)	Previous President's Budget	55.737	52.824	54.885	56.860
(U)	Current PBR/President's Budget	55.711	52.624	64.869	67.003
(U)	Total Adjustments	-0.026	-0.200		
(U)	Congressional Program Reductions		0.000		
	Congressional Rescissions		0.006		
	Congressional Increases				
	Reprogrammings	-0.026	-0.200		
	SBIR/STTR Transfer				
(U)	Significant Program Changes:				

Exhibit R-2a, RDT&E Project Justification

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
4818 Imaging and Targeting Support

Cost ($ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
4818 Imaging and Targeting Support	17.652	15.594	26.951	27.441	26.203	22.465	21.824	22.209	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The purpose of the Imaging and Targeting Support (I&TS) program is to develop and demonstrate next-generation, common imagery reconnaissance sensors (radar and electro-optical systems) for multiple airborne platforms, and sensor products to aid in rapid targeting (geolocation models, sensor-based exploitation tools, sensor networking capabilities). Developmental efforts pursued are improved sensor capabilities (such as hyperspectral imagery [HSI], measurement and signature intelligence [MASINT], polarimetric imaging, ground moving target indication, foliage penetration, and other radar and electro-optical modes), increased geolocation accuracy, advanced sensor data correlation, automated target detection, network centric warfare, and other Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to reduce both target search and kill chain timelines; as well as, supporting traditional intelligence activities. I&TS will increase interoperability among developed systems by developing common standards and tools. I&TS focuses on the following thrust areas:

Development and integration of common radar and electro-optical sensors (Synthetic Aperture Radar [SAR], Low Frequency SAR, Electro-Optical [EO], Infrared [IR], HSI, Laser Radar [LADAR]) and their operational modes (High Resolution Imagery, Moving Target Indication, Spectral Identification) for multiple airborne platforms.

Development and demonstration of advanced airborne tactical sensor processing algorithms and tools (automatic registration, automatic and assisted target detection, network centric warfare). Integration and test Common Image Processor (CIP) in Theater Airborne Reconnaissance System (TARS). Development of integrated multi-sensor capabilities to detect and identify obscured targets (OT). Development of open architecture between sensor models and target exploitation tools. Development of sensor models for airborne reconnaissance platforms. Development and implementation of national and international imagery standards (Common Ground Moving Target Indicator (GMTI), National Imagery Transmission Format (NITF)). These efforts focus on reducing the find, fix and track elements of the time critical targeting kill-chain timeline while improving operator and decision-maker efficiency and effectiveness.

Enhancement of Imagery Intelligence (IMINT) product quality. Monitoring and enhancement of IMINT product quality (radar and EO/IR imagery, GMTI data, and spectral information) and timeliness throughout the image chain (from sensor to user).

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009
(U) Theater Airborne Reconnaissance System (TARS)	3.644	0.150	0.000	0.000
(U) Continue development and delivery of sensor models for airborne reconnaissance platforms.	3.537	0.400	0.000	0.000
(U) Continue efforts to transition HSI technology, such as the Spectral Infrared Imaging Technology Transition Testbed (SPIRITT) sensor and the Hyperspectral Collection and Analysis System (HyCAS) into airborne reconnaissance platforms.	6.127	7.868	4.500	3.000

Exhibit R-2a, RDT&E Project Justification

DATE **February 2007**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**4818 Imaging and Targeting Support**

(U) **B. Accomplishments/Planned Program ($ in Millions)**	FY 2006	FY 2007	FY 2008	FY 2009
(U) Develop Obscured Target (OT) sensor capabilities (e.g., foliage penetration synthetic aperture radar (FOPEN SAR) and target identification (ID) laser radar (LADAR)).	1.206	4.096	9.000	8.800
(U) Develop automatic and assisted target detection algorithms and tools.	0.000	0.000	2.000	4.000
(U) Procure 4 HyCAS Sensors, integrate onto the MQ-1 Predator UAS, and provide training and support for these systems.			10.182	10.233
(U) Continue image quality base lining and assessment efforts for airborne reconnaissance platforms.	2.000	2.000	0.000	0.000
(U) Mission Support	1.138	1.080	1.269	1.408
(U) Total Cost	17.652	15.594	26.951	27.441

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

	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
(U) Joint Capability Technology Demonstration (0604648D8Z, OSD)				2.000	6.000	6.000	7.000	7.000	0.000	28.000
(U) AF RDT & E (PE 63203F, AFRL)	1.850	3.300	1.400	0.000	0.000	0.000	0.000	0.000	0.000	8.084

-Air Force Research Lab is contributing to SPIRITT HSI sensor development, including a longwave infrared (LWIR) hyperspectral channel.

(U) D. Acquisition Strategy

Acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods; including the use of Engineering Change Proposals (ECP) to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

Exhibit R-3, RDT&E Project Cost Analysis

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
4818 Imaging and Targeting Support

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2006 Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development														
BAE Systems (SPIRITT)	C/CPFF	Greenlawn, NY	19.646	4.927	Nov-05	6.500	Jan-07	1.500	Jan-08	3.000	Jan-09	0.000	35.573	35.573
BAE Systems (TARS)	SS/CPFF	Greenlawn, NY	0.480	3.644	Feb-06	0.000						0.000	4.124	4.124
General Atomics (HYCAS)	SS/CPFF	Rancho Bernardo, CA	0.000	0.000		0.350	Mar-07	2.000	Feb-08	4.500	Jan-09	0.000	6.850	0.350
EOIR Technologies (HYCAS)	SS/CPFF	Fredricksburg, VA	0.000	0.635	Feb-06	0.000						0.000	0.635	0.635
Essex Corp (OT-SAR)	Phase III SBIR	Columbia, MD	0.000	0.750	Jun-06	2.000	Feb-07	0.000		0.000		0.000	2.750	2.750
BAE Systems (CSM)	SS/CPFF	Rancho Bernardo, CA	0.000	1.348	Jun-06	0.000		0.000				0.000	1.348	1.348
ITT Space Systems (Image Quality)	SS/CPFF	Rochester, NY	2.840	1.000	Nov-05	1.000	Dec-06					0.000	4.840	4.840
General Dynamics (Image Quality)	SS/CPFF	Ypsilanti, MI	2.450	1.000	Dec-06	1.000	Nov-06					0.000	4.450	4.450
General Dynamics (API/TRD)	SS/CPFF	Dayton, OH	2.665	0.503	Nov-05	0.000						0.000	3.168	3.168
Others	Various	Various		2.707	Mar-06	3.664	Mar-07	22.182	Mar-08	18.533	Mar-09	Continuing	TBD	TBD
Subtotal Product Development			28.081	16.514		14.514		25.682		26.033		Continuing	TBD	TBD
Remarks:														
(U) Support														
													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Test & Evaluation														
												0.000	0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Management														
ASC (ITS)	Various	Wright Patterson, AFB		1.138	Oct-05	1.080	Oct-06	1.269	Oct-07	1.408	Oct-08	Continuing	TBD	TBD
Subtotal Management			0.000	1.138		1.080		1.269		1.408		Continuing	TBD	TBD
Remarks:														
(U) Total Cost			28.081	17.652		15.594		26.951		27.441		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**4818 Imaging and Targeting Support**

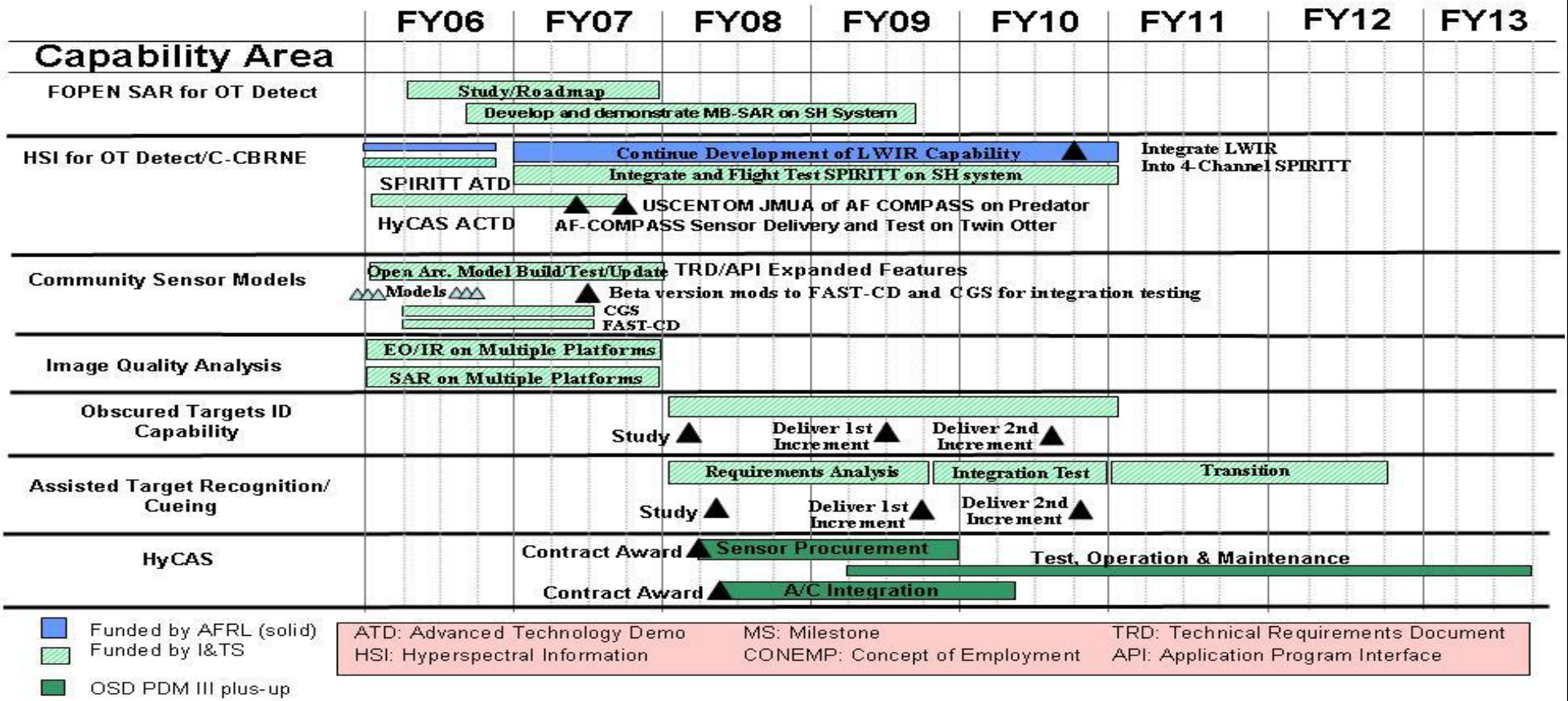

Exhibit R-4a, RDT&E Schedule Detail

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**4818 Imaging and Targeting Support**

(U) Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009
(U) TARS: Contract Award	3Q			
(U) TARS: CIP Patch Complete		3Q		
(U) ITS: Community Sensor Model Contract Award	2Q			
(U) ITS: Community Sensor Model Deliveries		2Q		
(U) ITS: SPIRITT ATD Phase I Flight Test #2	4Q			
(U) ITS: Demonstrate SPIRITT in C-130 Pod		4Q		
(U) ITS: SPIRITT Long Wave Hyperspectral Integration				3Q
(U) ITS: Obscured Target Sensor Capabilities Study Contract Award	2Q			
(U) ITS: Obscured Target Sensor Capabilities Study Strategy Report	4Q			
(U) ITS: Obscured Target UHF SAR Phase 1 Enhancement Contract Award	3Q			
(U) ITS: Obscured Target UHF SAR Phase 1 Enhancement Delivery		3Q		
(U) ITS: Obscured Target UHF SAR Phase 2 Enhancement Contract Award		2Q		
(U) ITS: Obscured Target UHF SAR Phase 2 Enhancement Delivery			1Q	
(U) ITS: Obscured Target ID Capability Study Contract Award			1Q	
(U) ITS: Assisted Target Recognition Capability Study Contract Award			2Q	
(U) ITS: Deliver Podded MB SAR Capability		4Q		
(U) ITS: Demonstrate LADAR Sensor for OT Identification			3Q	
(U) ITS: Image quality Baseline Global Hawk Complete	2Q			
(U) ITS: Image Quality Baseline Predator CONUS TPED complete		1Q		
(U) ITS: Image Quality Contracts complete		4Q		
(U) ITS: HyCAS Contract Award Sensor Procurement			2Q	
(U) ITS: HyCAS Contract Award A/C Integration			2Q	

Exhibit R-2a, RDT&E Project Justification

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
4819 Common Data Link (CDL)

Cost ($ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
4819 Common Data Link (CDL)	35.357	35.539	36.161	37.891	38.811	39.307	40.036	40.834	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

Common Data Link (CDL) provides an interoperable joint command, control, and communications capability for manned/unmanned Intelligence, Surveillance, and Reconnaissance (ISR) assets. As the CDL Executive Agent (EA), the Air Force oversees acquisition of developmental datalinks and update of the CDL specification. CDL Military Intelligence Program (MIP) funds are used to ensure design configuration, commonality, and interoperability among the service's ISR platforms. Updates to the CDL specification and developmental systems impact approximately 500 DoD airborne and ground ISR systems with CDL capabilities. The CDL program is working to comply with OSD mandates for Software Communications Architecture (SCA) waveform development, Internet Protocol Version 6 (IPv6), and software re-programmable cryptographic (COMSEC) equipment.

The CDL design permits existing and future reconnaissance assets to operate worldwide, providing sensor data directly via point-to-point or point-to-multipoint broadcast to ground sites and airborne platforms. It also provides the capability to relay data via air-to-air or satellite links when the asset and ground site are not within line-of-sight. CDL provides bandwidth to accommodate numerous sensors collecting Signals Intelligence (SIGINT) and Imagery Intelligence (IMINT) (including video) data.

Concept, technology, and developmental efforts support continuous improvements and implementation of line-of-sight and network Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities. CDL's modular design provides for future technology insertion and reduces non-recurring engineering and life-cycle costs to the user. (Note: the term A-series refers to full data rate/network capable CDL systems and T-Series refers to less capable, lower data rate CDL systems.)

This program is categorized as Budget Activity 07 because it provides for development of technologies and capabilities in support of operational system development.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009
(U) Continued evolutionary development of T-Series CDL terminals and waveforms (e.g. Team Portable, Mini CDL, and Joint Tactical Edge Network) for use on C2ISR platforms (e.g. Guardrail Legacy Replacement, Airborne Reconnaissance Low, P-3, Predator, Reaper, other tactical and small UAVs) and man portable systems.	9.890	5.982	10.583	13.884
(U) Continued development of A-Series terminals and waveforms (e.g. MR-TCDL and SCA/IPv6) for integration into ISR platforms and programs such as ACS, Apache, DCGS-A and Objective Gateway.	12.771	14.363	11.360	9.119
(U) Continued Multi-Platform-Common Data Link (MP-CDL) (A-Series) development of wideband integrated common data link to support Multi-Platform Radar Technology Insertion Program (MP-RTIP) and network centric communications development.	5.099	6.405	0.294	0.000

Exhibit R-2a, RDT&E Project Justification

DATE **February 2007**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**4819 Common Data Link (CDL)**

(U) **B. Accomplishments/Planned Program ($ in Millions)**	FY 2006	FY 2007	FY 2008	FY 2009
(U) Continued configuration control of CDL architecture, standards, specification, and modules.	1.920	2.108	2.553	2.720
(U) Continued current development phase of COMSEC replacement and CDL transition to development of software reprogrammable COMSEC.	0.526	3.644	1.483	0.893
(U) Continued development of advanced technology insertion activities (to include studies and analysis of future data link requirements and architectures), CDL certification test equipment development, and related Joint Service interoperability certification and spectrum management requirements to include OSD mandates.	0.788	0.732	7.373	8.569
(U) Complete NCCT ACTD wideband integrated common data link development.	1.000	0.000	0.000	0.000
(U) Complete Ultra-wideband Airborne Laser Communications development. This is an FY06 Congressional Plus-up.	1.774	0.000	0.000	0.000
(U) Provide CDL technical and engineering support.	1.589	2.305	2.515	2.706
(U) Total Cost	35.357	35.539	36.161	37.891

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

	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
(U) None										

(U) D. Acquisition Strategy

CDL funds are managed by various government program offices and laboratories to support new and on going contracted development efforts in support of providing a common, interoperable wideband ISR data link as mandated by Assistant Secretary of Defense (Networks and Information Integration) (ASD(NII)) policy. Platforms are responsible for CDL procurement, integration, and installation. Acquisition strategy varies by contract. When possible contracts are awarded under full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
4819 Common Data Link (CDL)

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2006 Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development														
L-3 Communications	C & S; CPAF, CPFF, CPIF	Salt Lake City, UT	139.695	16.956	Feb-06	18.569	Jan-07	16.826	Jan-08	15.566	Jan-09	Continuing	TBD	TBD
Harris Corp	C & S; CPFF	Melbourne, FL	3.441	0.167	Sep-06	1.167	Jan-07	0.333	Jan-08	0.000		0.000	5.108	TBD
SATCOM Interop/Global Grid/Other Govt Orgs	S; MIPR, CPIF	Multiple	8.107	0.000		0.100	Jan-07	1.400	Jan-08	3.800	Jan-09	Continuing	TBD	TBD
L-3 COMCEPT	C; CPFF	Rockwall, TX	20.619	1.000	Feb-06							0.000	21.619	21.619
ITT	C; IDIQ	Beavercreek, OH	2.700	1.774	Jun-06							0.000	4.474	4.500
Cubic	C, CPFF	San Diego, CA	14.075	6.193	Feb-06	3.117	Jan-07	1.733	Jan-08	1.500	Jan-09	Continuing	TBD	TBD
Viasat	CPIF	San Diego CA	0.000	0.167	Sep-06	1.167	Jan-07	0.333	Jan-08	0.000		0.000	1.667	
Other	S; MIPR, CPFF	Multiple	5.004	2.306	Feb-06	3.500	Jan-07	6.494	Jan-08	7.639	Jan-09	Continuing	TBD	TBD
Subtotal Product Development			193.641	28.563		27.620		27.119		28.505		Continuing	TBD	TBD
Remarks:														
(U) Support														
Various	C & S; CPFF, MIPR	Multiple	28.219	5.464	Dec-05	5.434	Jan-07	5.950	Jan-08	6.188	Jan-09	Continuing	TBD	TBD
Subtotal Support			28.219	5.464		5.434		5.950		6.188		Continuing	TBD	TBD
Remarks:														
(U) Test & Evaluation														
JITC	MIPR	Fort Huachuca, AZ	4.023	0.300	Feb-06	0.309	Jan-07	0.318	Jan-08	0.328	Jan-09	Continuing	TBD	TBD
Subtotal Test & Evaluation			4.023	0.300		0.309		0.318		0.328		Continuing	TBD	TBD
Remarks:														
(U) Management														
Various	MIPR	Multiple	9.739	1.030	Oct-05	2.176	Jan-07	2.774	Jan-08	2.870	Jan-09	Continuing	TBD	TBD
Subtotal Management			9.739	1.030		2.176		2.774		2.870		Continuing	TBD	TBD
Remarks:														
(U) Total Cost			235.622	35.357		35.539		36.161		37.891		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**4819 Common Data Link (CDL)**

EXHIBIT R-2A(PE0305206F)

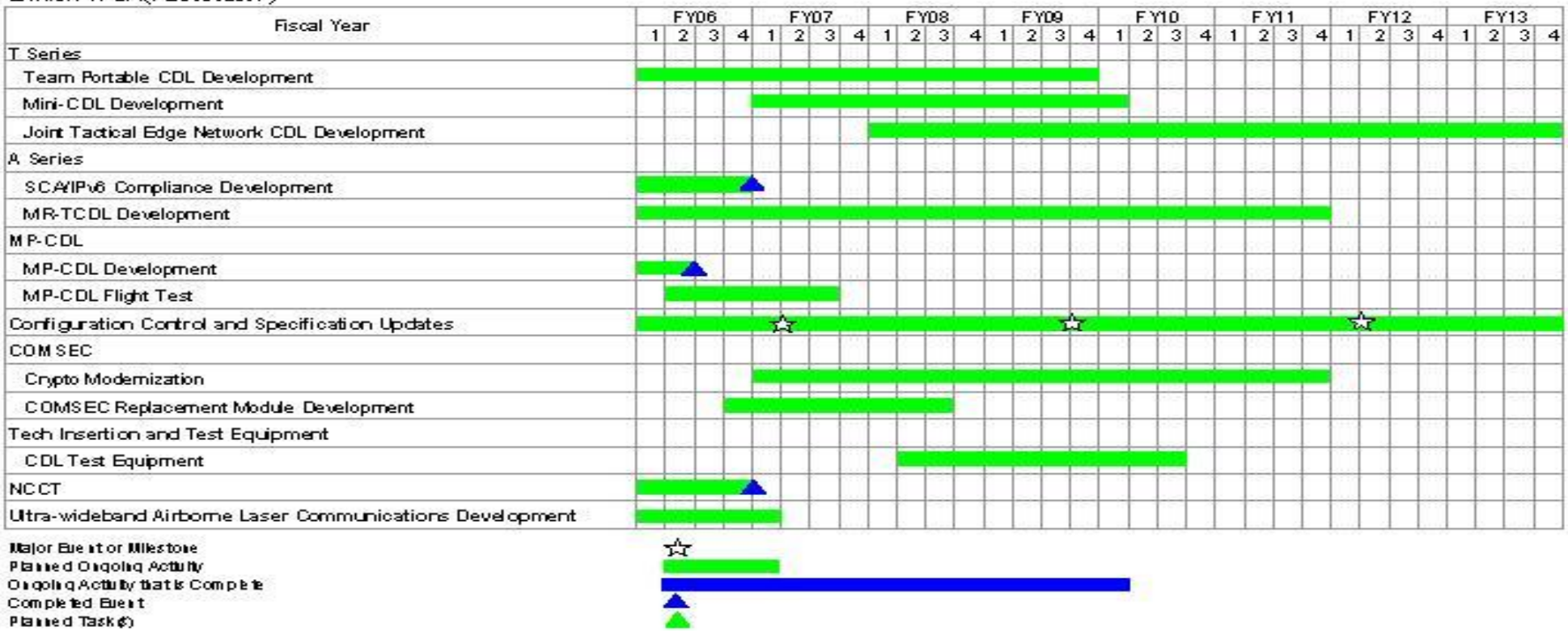

Exhibit R-4a, RDT&E Schedule Detail

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**4819 Common Data Link (CDL)**

(U) Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009
(U) Team Portable CDL Development	1-4Q	1-4Q	1-4Q	1-4Q
(U) Mini-CDL Development		1-4Q	1-4Q	1-4Q
(U) Joint Tactical Edge Network CDL Development			1-4Q	1-4Q
(U) SCA/IPv6 Compliance Development	1-4Q			
(U) MR-TCDL for Army Development	1-4Q	1-4Q	1-4Q	1-4Q
(U) MP-CDL Development	1-2Q			
(U) MP-CDL Flight Test	2-4Q	1-4Q		
(U) Configuration Control and Specification Updates	1-4Q	1-4Q	1-4Q	1-4Q
(U) Crypto Modernization		1-4Q	1-4Q	1-4Q
(U) COMSEC Replacement Module Development	4Q	1-4Q	1-4Q	
(U) CDL Test Equipment			1-4Q	1-4Q
(U) NCCT	1-4Q			
(U) Ultra-wideband Airborne Laser Communications Development	1-4Q	2Q		

Exhibit R-2a, RDT&E Project Justification

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
5038 Network Centric Collaborative Targeting

Cost ($ in Millions)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
5038	Network Centric Collaborative Targeting	0.952	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

This project completed the Network Centric Collaborative Targeting (NCCT) Advanced Concept Technology Demonstration (ACTD). NCCT transitioned from ACTD to formal Air Force program status in FY06. All NCCT development and fielding efforts now fall under PE 35221F.

NCCT is a networked application that uses machine-to-machine interfaces and Internet Protocol connectivity to horizontally integrate Battle Management/Command and Control (BM/C2)/Intelligence, Surveillance, and Reconnaissance (ISR) assets to provide timely detection, identification, and geo-location of time-sensitive and high priority targets to combatant commanders and their forces. NCCT will develop and deploy the capability to share multi-source sensor-level data, coordinate sensor activity, and provide rapidly correlated results between dissimilar BM/C2/ISR platforms and decision-making nodes. NCCT will also develop and refresh BM/C2/ISR asset and decision-making node interfaces in coordination with participant program offices.

NCCT Core Technology develops machine-to-machine hardware and software to horizontally integrate dissimilar BM/C2/ISR assets to include, but not limited to, Rivet Joint, Joint Surveillance Target Attack Radar System (Joint STARS), Deployable Common Ground Station (DCGS)/U2, Falconer Air and Space Operations Center (AOC), national systems and Army Guardrail. NCCT Core Technology includes, but is not limited to, network messages and formats, correlation software and data rules of interaction, and platform specific Platform Interface Modules (PIMs). Core technology supports the Systems Integration Lab (SIL) used to test NCCT development, modications and PIMs. Core technology also supports Air Force and Joint experiments, demonstrations, and exercises as necessary.

This program is categorized as Budget Activity 7 because it provides for development of technologies in support of operational system development.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009
(U)				
(U) Complete development of NCCT core technology such as NCCT Network Controller, NCCT Communications Equipment, and NCCT Operations Interface for the ACTD.	0.952			
(U) Total Cost	0.952	0.000	0.000	0.000

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

	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
(U) RC-135 PE 0305207F	0.100								0.000	2.100
(U) CDL PE 0305206F (Project 4819)	1.000								0.000	2.000

Exhibit R-2a, RDT&E Project Justification		DATE February 2007
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305206F Airborne Reconnaissance Systems**	PROJECT NUMBER AND TITLE **5038 Network Centric Collaborative Targeting**

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

(U)	OSD PE 0603750D	1.000	0.000	2.000
(U)	Army Guardrail PE 0203744A	1.000	0.000	2.000
(U)	Other APPN			

The ACTD includes participating platforms as shown above. United Kingdom Nimrod also participated in the ACTD with their own funds.

(U) D. Acquisition Strategy

ASC/BSSG, Big Safari Systems Group at Wright Patterson AFB, manages the Cost Plus Fixed Fee contract used to develop NCCT core technology and oversee system demonstration while individual platform program offices (Rivet Joint, Joint STARS, AWACS, Air Force DCGS, Airborne Overhead Introperability Office, Senior Scout, UK Nimrod and Army Guardrail) manage and contract directly for Platform Interface Module development and integration on their platforms.

Exhibit R-3, RDT&E Project Cost Analysis

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
5038 Network Centric Collaborative Targeting

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2006 Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development														
L-3 ComCept, Inc.	CPFF	Prime Contractor/Rockwall, TX		0.952	Nov-05							0.000	0.952	TBD
Subtotal Product Development			0.000	0.952		0.000		0.000		0.000		0.000	0.952	TBD
Remarks:														
(U) Support														
													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	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	0.000
Remarks:														
(U) Management														
													0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			0.000	0.952		0.000		0.000		0.000		0.000	0.952	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE
February 2007

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
5038 Network Centric Collaborative Targeting

	Task Name	2006				2007				2008			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Core Technology Development and Refinement												
										as of 19 Jan 2006			

Exhibit R-4a, RDT&E Schedule Detail

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**5038 Network Centric Collaborative Targeting**

(U) Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009
(U) Core Technology Development	1-4Q			

Exhibit R-2a, RDT&E Project Justification

DATE **February 2007**

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
5092 JTC/SIL MUSE

Cost ($ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
5092 JTC/SIL MUSE	1.750	1.491	1.757	1.671	1.610	1.554	1.584	1.616	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a center of technical excellence to support all Unmanned Air Systems (UAS) programs within the services. The mission includes Service-specific and Joint UAS and Intelligence Surveillance Reconnaissance (ISR) programs throughout DoD. The JTC/SIL provides a Government test bed for rapid prototyping, technology insertion and transition, systems engineering, modeling/simulation, training and Command Control Communications Computers and Intelligence (C4I) optimization. The cornerstone of its diverse tool set is the Multiple Unified Simulation Environment (MUSE), which is the Department's simulation/training system of choice for ISR systems, sensors, and platforms. The MUSE is also known as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) in its Air Force application.

The Services and Warfighting Commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on-force simulations. The MUSE creates a realistic operational environment which supports the ability to assess military utility, architecture and Concept of Operations (CONOPS) development, Tactics, Techniques, and Procedures (TTP) development and refinement, the conduct of emerging concepts experimentation and C4I optimization within warfighting exercises and experiments. The MUSE/AFSERS is the only capability within the Department that allows all Services to train with UAS and ISR assets in a Joint training environment. The MUSE also creates a realistic operational environment that supports an embedded training capability for multiple Program Managers. These tools help to minimize acquisition and life cycle cost and schedule impacts.

The MUSE is currently in use within all services and unified commands simulating PREDATOR, GLOBAL HAWK, HUNTER, Shadow 200 and PIONEER UASs, national and commercial satellite collectors, P-3 and the U-2. During warfighting exercises, the JTC/SIL integrates realistic high-fidelity imagery simulations, emulating the C4I construct. For those assets normally not available for training, the JTC/SIL provides surrogate systems and interfaces. Distributed training environments, virtually linking participants from various locations worldwide, are routinely supported within the MUSE architecture. The MUSE/AFSERS is also used as a Mission Rehearsal Tool for current on-going combat operations.

This program is categorized as Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

	B. Accomplishments/Planned Program ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009
(U)	Laboratory sustainment	0.334	0.334	0.334	0.334
(U)	Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) development	0.916	0.657	0.923	0.837
(U)	Maintenance, Licenses and equipment purchases	0.500	0.500	0.500	0.500
(U)	Total Cost	1.750	1.491	1.757	1.671

Exhibit R-2a, RDT&E Project Justification		DATE February 2007
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305206F Airborne Reconnaissance Systems**	PROJECT NUMBER AND TITLE **5092 JTC/SIL MUSE**

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

	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost

(U) Other

The program receives approximately $2.3 per year from the Army (PE 0305204A) and $1.7M per year from the Navy (PE P0305204N) thru FY2009.

(U) D. Acquisition Strategy

All contracts are awarded after full and open competition and when situations dictate, via sole source.

Exhibit R-3, RDT&E Project Cost Analysis

DATE
February 2007

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE
5092 JTC/SIL MUSE

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2006 Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development														
JTC/SIL	MIPR	Redstone Arsenal, Huntsville, AL		1.750	Nov-05	1.491	Jan-07	1.757	Jan-08	1.671	Jan-09	Continuing	TBD	TBD
Subtotal Product Development			0.000	1.750		1.491		1.757		1.671		Continuing	TBD	TBD
Remarks:														
(U) Total Cost			0.000	1.750		1.491		1.757		1.671		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE February 2007
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305206F Airborne Reconnaissance Systems**	PROJECT NUMBER AND TITLE **5092 JTC/SIL MUSE**

JTC/SIL Schedule

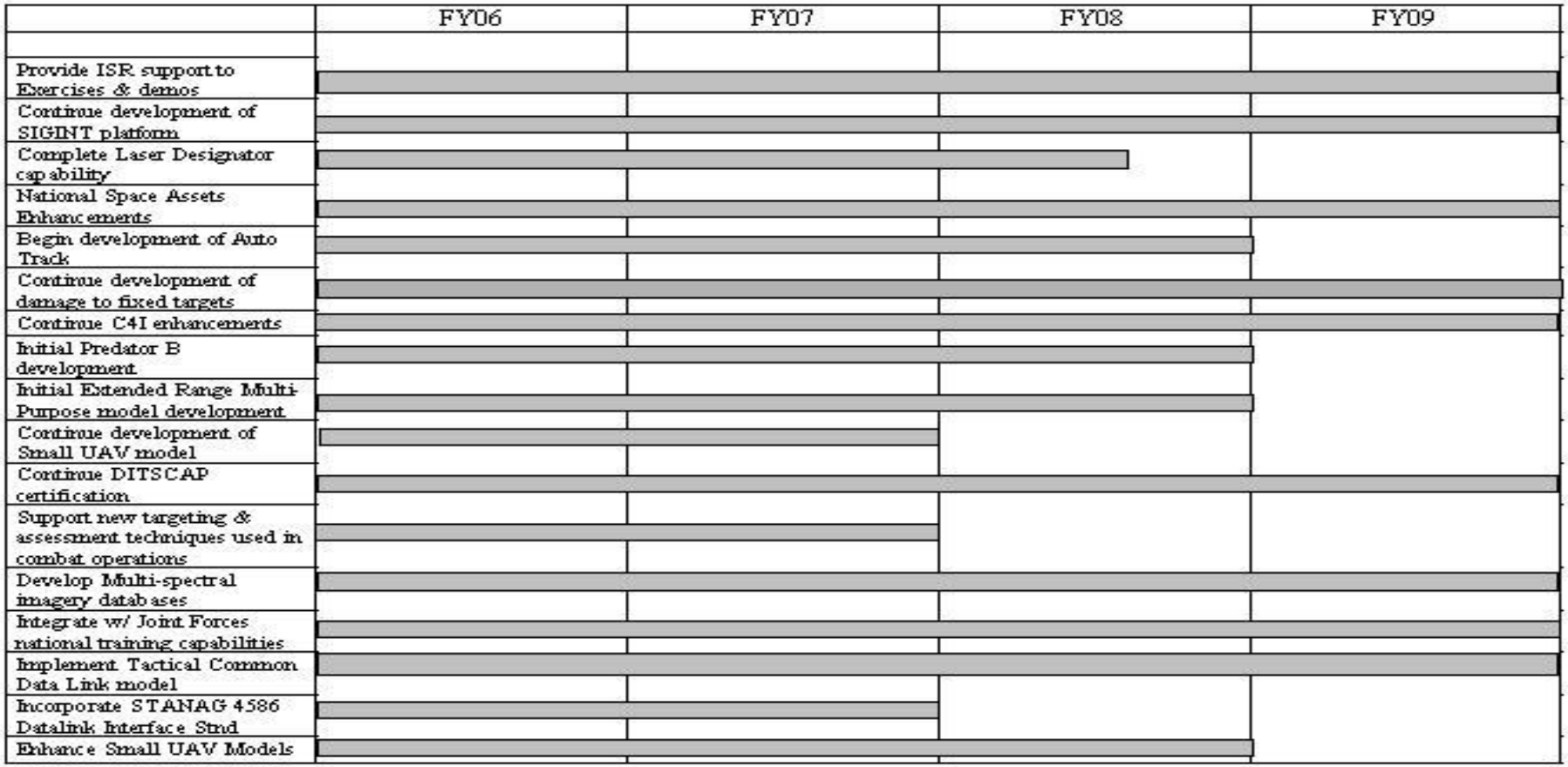

Exhibit R-4a, RDT&E Schedule Detail

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**5092 JTC/SIL MUSE**

(U) Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009
(U) Provide ISR support to exercises and demonstrations	1-4Q	1-4Q	1-4Q	1-4Q
(U) Continue development of SIGINT platforms	1-4Q	1-4Q	1-4Q	1-4Q
(U) Complete Laser Designator capability	1-4Q	1-4Q	1-2Q	
(U) National space assets enhancements	1-4Q	1-4Q	1-4Q	1-4Q
(U) Begin development of aut track	1-4Q	1-4Q	1-4Q	
(U) Continue development of damage to fixed targets	1-4Q	1-4Q	1-4Q	1-4Q
(U) Continue C4I enhancements	1-4Q	1-4Q	1-4Q	1-4Q
(U) Initial Predator B (Reaper) development	1-4Q	1-4Q	1-4Q	
(U) Initial extended range multi-purpose model development	1-4Q	1-4Q	1-4Q	
(U) Continue development of Small UAV model	1-4Q	1-4Q		
(U) Continue DITSCAP certification	1-4Q	1-4Q	1-4Q	1-4Q
(U) Support new targeting and assessment techniques used in combat operations	1-4Q	1-4Q		
(U) Develop multi-spectral imagery databases	1-4Q	1-4Q	1-4Q	1-4Q
(U) Integrate with Joint Forces national training capabilities	1-4Q	1-4Q	1-4Q	1-4Q
(U) Implement Tactical Commomn Data Link model	1-4Q	1-4Q	1-4Q	1-4Q
(U) Incorporate STANAG 4586 Datalink interface standard	1-4Q	1-4Q		
(U) Enhance Small UAV models	1-4Q	1-4Q	1-4Q	