PE NUMBER: 0305206F
PE TITLE: Airborne Reconnaissance Systems

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2006

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305206F Airborne Reconnaissance 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	60.633	55.737	52.824	54.885	56.860	58.378	59.262	Continuing	TBD
4818	Imaging and Targeting Support	12.201	17.652	15.653	16.769	17.208	17.930	18.216	Continuing	TBD
4819	Common Data Link (CDL)	36.295	35.383	35.674	36.378	38.003	38.862	39.513	Continuing	TBD
4882	Compass Bright	2.105	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5038	Network Centric Collaborative Targeting	8.101	0.952	0.000	0.000	0.000	0.000	0.000	0.000	TBD
5092	JTC/SIL MUSE	1.931	1.750	1.497	1.738	1.649	1.586	1.533	Continuing	TBD

- FY 2006, Congressional GWOT add $3.0M, Project Number, 674818, to integrate Common Image Processor (CIP) in Theater Airborne Reconnaissance System (TARS)
- FY 2006, Congressional add $1.8M, Project Number, 674819, to conduct Airborne Optical Comm Flight Demonstration
- FY 2006, Project Number 675038, Network Centric Collaborative Targeting (NCCT) ACTD completes
- FY 2006-2011, Project Number 674882, Compass Bright, efforts were transferred from PE 0305206F, Airborne Reconnaissance Systems, to PE 0305260F, Airborne SIGINT Enterprise, Project, 675185; this consolidated AF SIGINT development efforts.

(U) A. Mission Description and Budget Item Justification

The Airborne Reconnaissance Systems program coordinates the development of advanced airborne reconnaissance system technologies (i.e., 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 2005	FY 2006	FY 2007
(U)	Previous President's Budget	60.921	51.769	52.659
(U)	Current PBR/President's Budget	60.633	55.737	52.824
(U)	Total Adjustments	-0.288	3.968	
(U)	Congressional Program Reductions		-0.025	
	Congressional Rescissions		-0.807	
	Congressional Increases		4.800	
	Reprogrammings	-0.288		
	SBIR/STTR Transfer			

(U) Significant Program Changes:

In FY06, $5.254M was moved from Project 674882 (Compass Bright) to the PE 0304260F, Airborne SIGINT Enterprise.

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems

In FY07, $5.608M was moved from Project 674882 (Compass Bright) to the PE 0304260F, Airborne SIGINT Enterprise.

Exhibit R-2a, RDT&E Project Justification			DATE: February 2006
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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4818 Imaging and Targeting Support	12.201	17.652	15.653	16.769	17.208	17.930	18.216	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

FY2006, Congressional GWOT add $3.0M, to integrate and test Common Image Processor (CIP) in Theater Airborne Reconnaissance System (TARS).

(U) A. Mission Description and Budget Item Justification

The purpose of the Imaging and Targeting Support (I&TS) program is to develop next-generation, common imagery reconnaissance sensors (e.g., radar and electro-optical systems) for multiple airborne platforms, and sensor products to aid in rapid targeting (e.g., geolocation models, sensor-based exploitation tools, sensor networking capabilities). Developmental efforts pursued are improved sensors (such as hyperspectral information [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) technologies 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 (e.g., Synthetic Aperture Radar [SAR], Low Frequency SAR, Electro-Optical [EO], Infrared [IR], Hyperspectral [HSI], Laser Radar [LADAR]) and their operational modes (e.g., High Resolution Imagery, Moving Target Indication, Spectral Identification) for multiple airborne platforms.

Development of advanced airborne tactical sensor processing algorithms and tools (e.g. automatic registration, automatic target detection/recognition, network centric warfare). Development of an integrated multi-sensor capability to detect and identify obscured targets (OT). Development of open architecture between tactical sensor models and target exploitation tools. Development of tactical sensor models for airborne reconnaissance platforms. Development and implementation of imagery standards (e.g. Common Ground Moving Target Indicator (GMTI), National Imagery Transmission Format (NITF) for HSI. 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.

Enhancement of Imagery Intelligence (IMINT) product quality. Monitoring and enhancement of IMINT product quality (e.g., radar and EO/IR imagery, GMTI data, and spectral information) and timeliness throughout the image chain (i.e. from sensor to user). Development and enhancement of compression techniques and algorithms for all instances of SAR and EO/IR data.

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 2005	FY 2006	FY 2007
(U) Theater Airborne Reconnaissance System (TARS)	0.430	3.500	1.000
(U) Continue development and delivery of sensor models for tactical airborne reconnaissance platforms.	2.660	4.000	3.100
(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.	6.695	5.100	
(U) Develop Obscured Target (OT) sensor capabilities		1.975	7.500

Exhibit R-2a, RDT&E Project Justification		DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 4818 Imaging and Targeting Support

(U)	B. Accomplishments/Planned Program ($ in Millions)	FY 2005	FY 2006	FY 2007
(U)	Continue development and integration of compression techniques for Synthetic Aperture Radar (SAR) complex data.	0.145		1.000
(U)	Continue image quality baselining and assessment efforts for airborne reconnaissance platforms.	1.340	2.000	1.937
(U)	Mission Support	0.931	1.077	1.116
(U)	Total Cost	12.201	17.652	15.653

(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 (PE 63203F, AFRL)	3.316	1.500	0.600	0.000	0.000	0.000	0.000	0.000	8.084

-Air Force Research Lab is contributing to the SPIRITT HSI sensor development.

(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 2006**

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 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												
BAE Systems (SPIRITT)	C/CPFF	Greenlawn, NY	13.500	6.146	Nov-04	3.500	Nov-05	0.000		0.000	23.146	34.151
BAE Systems (TARS)	SS/CPFF	Greenlawn, NY	0.000	0.430	May-05	3.500	Feb-06	1.000	Nov-06	0.000	4.930	1.930
General Atomics (HYCAS)	SS/CPFF	Rancho Bernardo, CA	0.000	0.000		0.900	Feb-06	0.000		0.900	1.800	0.900
EOIR Technologies (HYCAS)	SS/CPFF	Fredricksburg, VA	0.000	0.000		0.700	Feb-06	0.000		0.000	0.700	0.700
Northrup Grumman (Complex SAR Compression)	SS/CPFF	Linthicum Heights, MD	1.800	0.145	Dec-04	0.000		1.000	Nov-06	0.000	2.945	2.807
ITT Space Systems (Image Quality)	SS/CPFF	Rochester, NY	2.100	0.740	Nov-04	1.000	Nov-05	1.000	Nov-06	0.000	4.840	4.869
General Dynamics (Image Quality)	SS/CPFF	Ypsilanti, MI	1.850	0.600	Nov-04	1.000	Nov-05	1.000	Nov-06	0.000	4.450	4.941
General Dynamics (API/TRD)	SS/CPFF	Dayton, OH	1.700	0.965	Nov-04	1.000	Nov-05	0.750	Nov-06	0.000	4.415	4.500
Others	Various	Various		2.244	Mar-05	5.000	Mar-06	9.787	Mar-07	Continuing	TBD	10.842
Subtotal Product Development			20.950	11.270		16.600		14.537		Continuing	TBD	65.640
Remarks: Majority of "Others" consitutes contracts to be competed for Tactical Sensor Models												
(U) Support												
											0.000	
Subtotal Support			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
Remarks:												
(U) Management												
ASC (ITS)	Various	Wright Patterson, AFB		0.931	Oct-04	1.052	Oct-05	1.116	Oct-06	Continuing	TBD	TBD
Subtotal Management			0.000	0.931		1.052		1.116		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			20.950	12.201		17.652		15.653		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 4818 Imaging and Targeting Support

PE 35206F, Airborne Reconnaissance Systems
BPAC 4818, Imaging and Targeting Support

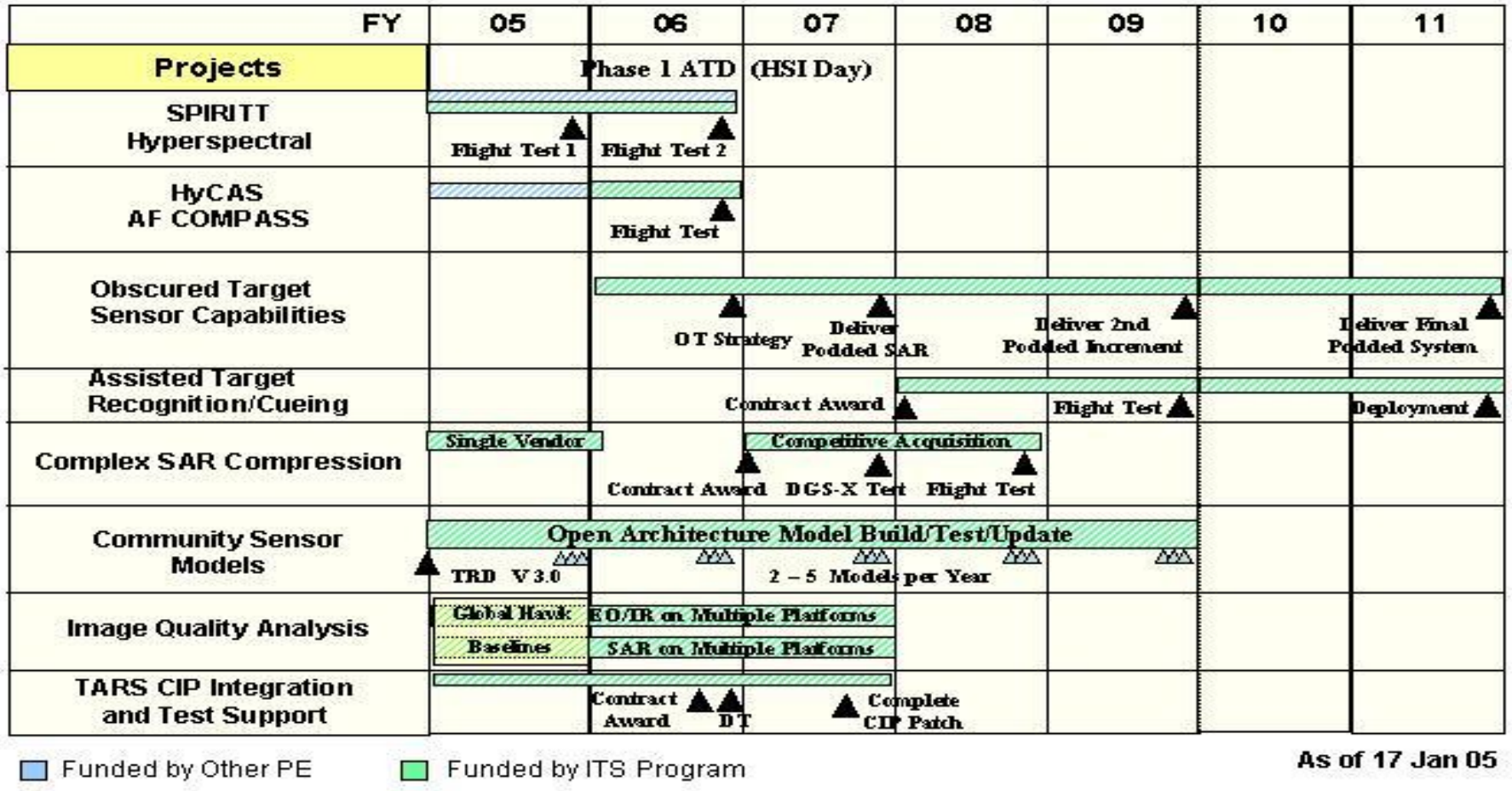

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Exhibit R-4a, RDT&E Schedule Detail

DATE: February 2006

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 2005	FY 2006	FY 2007
(U) ITS: SPIRITT ATD Phase I Flight Test	4Q		
(U) ITS: SPIRITT ATD Phase I Flight Test #2		3Q	
(U) ITS: Community Sensor Model Contract Award	2Q	2-3Q	1Q
(U) ITS: Community Sensor Model Deliveries	1-4Q	4Q	4Q
(U) ITS: Image Quality Baseline Global Hawk Complete	3Q		
(U) ITS: Image Quality Baseline Predator complete		3Q	
(U) ITS: Image Quality Baseline for TARS EO complete			4Q
(U) ITS: Complex SAR Compression Contract Award			1Q
(U) ITS: Complex SAR Compression Algorithm Downselect			4Q
(U) ITS: Obscured Target Sensor Capabilities Study Contract Award		2Q	
(U) ITS:Obscured Target Sensor Capabilities Podded SAR Contract Award		3Q	
(U) ITS:Obscured Target Sensor Capabilities Study Strategy Report		4Q	
(U) ITS: Obscured Target Sensor Capabilities Podded SAR Delivery			4Q
(U) TARS: Contract Award		3Q	
(U) TARS: DT Begins		3Q	
(U) TARS: DT completes			2Q
(U) TARS: CIP patch complete			3Q

Exhibit R-2a, RDT&E Project Justification

DATE: February 2006

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4819 Common Data Link (CDL)	36.295	35.383	35.674	36.378	38.003	38.862	39.513	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

- FY05 $6.1M Congressional Plus-up to support Software Communications Architecture (SCA) compliance.
- FY06 $1.8M Congressional Plus-up to support Ultra-Wideband Airborne Laser Communications Development

(U) A. Mission Description and Budget Item Justification

The objective of the CDL effort within the Air Force is to define an interoperable command, control, and communications capability for intelligence and reconnaissance assets to include both manned and unmanned platforms. As the Executive Agent, the Air Force will oversee joint development of CDL systems and specifications. CDL will achieve interoperable communications by employing a Joint Tactical Radio System (JTRS) Software Communications Architecture (SCA) architecture based on previously and newly developed hardware, software, and waveforms that promote commonality among the services, NATO, and allies. As the CDL executive agent, the Air Force is responsible for managing these multi-service funds, ensuring design configuration commonality and interoperability.

The CDL design will permit 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, or via satellite or air-to-air relay when the asset and ground site are not within line-of-sight. The effort will integrate commercial and other classified satellite communications into the available satellite relay options to ensure sufficient wideband data relay capability. The system will have sufficient bandwidth to accommodate numerous sensors collecting Signals Intelligence (SIGINT), Imagery Intelligence (IMINT) (including video), multi-spectral and other data.

CDL concept development, technology development, system development and demonstration efforts support continuous improvements and implementation of line-of-sight and network Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities and the migration to software re-programmable cryptographic (COMSEC) equipment to enable a joint global strike task force. Modular design allows for future technology insertion. The commonality of modular components reduces non-recurring engineering and lifecycle costs to the user. Interoperability provides for the exchange of data across service and agency boundaries. (Note: the term A-series refers to full rate/capability CDL systems and T-Series refers to Tactical Common Data Link (TCDL).

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 2005	FY 2006	FY 2007
(U) Continued evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, Tactical UAV and Predator.	23.570	21.242	16.477
(U) Continued Airborne Information Transmission (ABIT) (A-Series) technology integration into CDL systems for application to ISR platforms such as Theater Airborne Reconnaissance System and completed ABIT system cost reduction initiatives.	0.000	0.023	0.552
(U) Continued configuration control of CDL architecture, standards, specification, and modules; provide for Joint-Service interoperability certification and spectrum management.	2.593	2.079	2.012
(U) Continued current development phase of COMSEC replacement and CDL transition to development of reprogrammable COMSEC.	0.045	0.043	3.157

Exhibit R-2a, RDT&E Project Justification		DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 4819 Common Data Link (CDL)

	B. Accomplishments/Planned Program ($ in Millions)	FY 2005	FY 2006	FY 2007
(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.	3.087	0.972	1.100
(U)	Continued Multi-Platform-Common Data Link (MP-CDL) development of wideband integrated common data link to support Multi-Platform Radar Technology Insertion Program (MP-RTIP) and network centric communications development.	4.183	5.056	8.905
(U)	Continued NCCT ACTD wideband integrated common data link development.	1.000	1.000	0.000
(U)	Continued Ultra-wideband Airborne Laser Communications development. This is an FY06 Congressional Plus-up.	0.000	1.800	0.000
(U)	Provide CDL technical and engineering support.	1.817	3.168	3.471
(U)	Total Cost	36.295	35.383	35.674

(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) None									

(U) D. Acquisition Strategy

CDL funds are managed by various government laboratories and program offices to support new and on-going contracted development efforts in support of providing a common, interoperable wideband data link as mandated by ASD(NII) policy. CDL contracts are/were awarded under 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: **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 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												
L-3 Communications	C & S; CPAF, CPFF, CPIF	Salt Lake City, UT	115.215	24.480	Nov-04	14.175	Feb-06	21.207	Nov-06	Continuing	TBD	TBD
Harris Corp	C & S; CPFF	Melbourne, FL	2.811	0.505	Nov-04	0.000		1.000	Nov-06	Continuing	TBD	TBD
SATCOM Interop/Global Grid/Other Govt Orgs	S; MIPR, CPIF	Multiple	8.092	0.015	Feb-05	0.000		0.100	Jan-07	Continuing	TBD	TBD
L-3 COMCEPT	C; CPFF	Rockwall, TX	19.619	1.000	Jun-05	1.000	Feb-06			0.000	21.619	21.619
ITT	C; IDIQ	Beavercreek, OH	2.700			1.800	Jun-06			0.000	4.500	4.500
Cubic	C, CPFF	San Diego, CA	12.005	1.945	Nov-04	8.022	Feb-06	1.650	Nov-06	Continuing	TBD	TBD
Other	S; MIPR, CPFF	Multiple	2.850	0.250	Nov-04	0.000	Feb-06	1.000	Nov-06	Continuing	TBD	TBD
Subtotal Product Development			163.292	28.195		24.997		24.957		Continuing	TBD	TBD
Remarks:												
(U) Support												
Various	C & S; CPFF, MIPR	Multiple	23.127	5.092	Nov-04	6.075	Dec-05	6.024	Nov-06	Continuing	TBD	TBD
Subtotal Support			23.127	5.092		6.075		6.024		Continuing	TBD	TBD
Remarks:												
(U) Test & Evaluation												
JITC	MIPR	Fort Huachuca, AZ	3.523	0.500	Nov-04	0.300	Feb-06	0.309	Nov-06	Continuing	TBD	TBD
Subtotal Test & Evaluation			3.523	0.500		0.300		0.309		Continuing	TBD	TBD
Remarks:												
(U) Management												
Various	MIPR	Multiple	7.231	2.508	Oct-04	4.011	Oct-05	4.384	Oct-06	Continuing	TBD	TBD
Subtotal Management			7.231	2.508		4.011		4.384		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			197.173	36.295		35.383		35.674		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE: February 2006

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 (PE 0305206F)

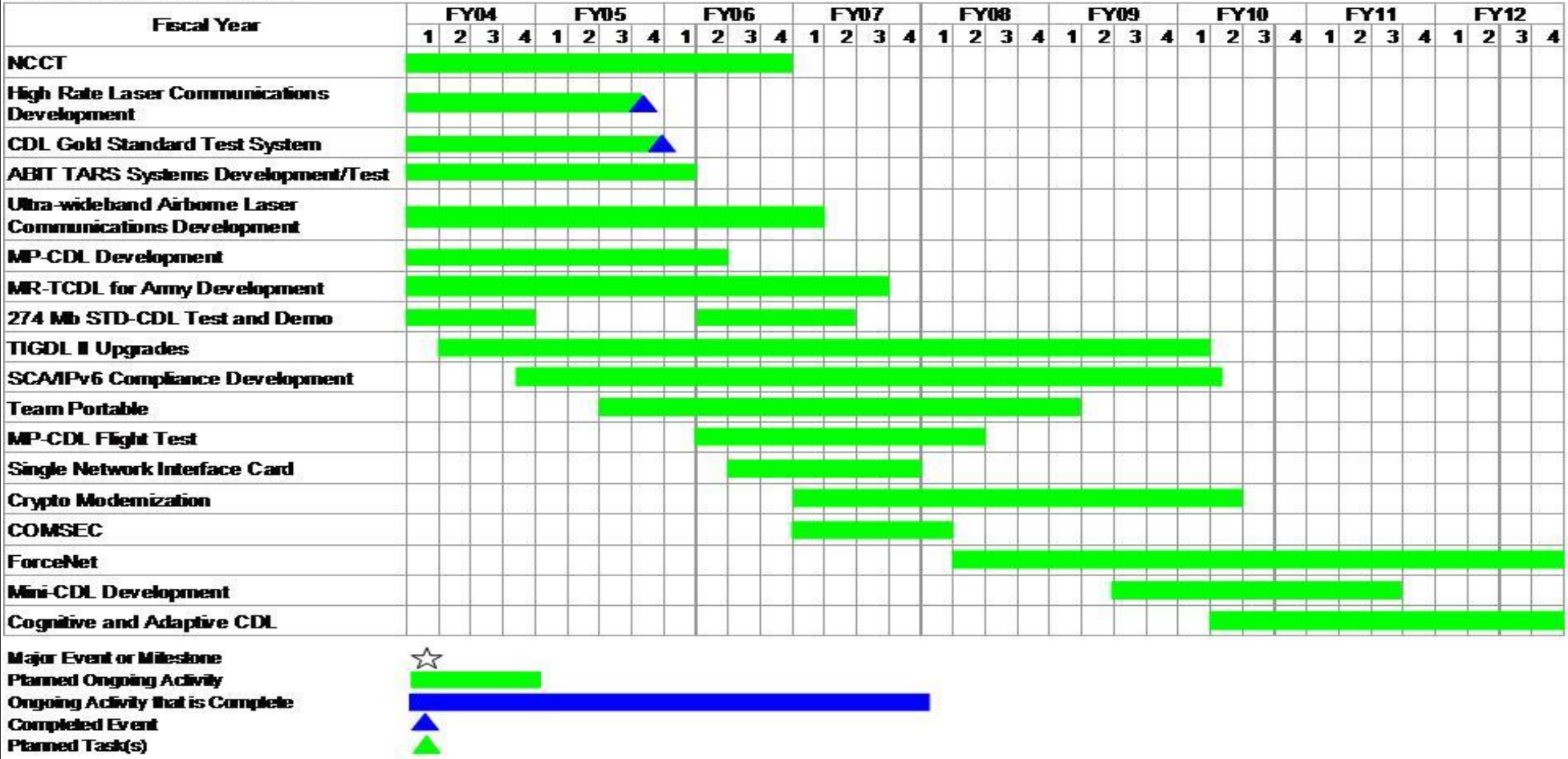


Exhibit R-4a, RDT&E Schedule Detail		DATE February 2006
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305206F Airborne Reconnaissance Systems**	PROJECT NUMBER AND TITLE **4819 Common Data Link (CDL)**

(U) **Schedule Profile**	FY 2005	FY 2006	FY 2007
(U) NCCT	1-4Q	1-4Q	
(U) High Data Rate Laser Communications Development	1-4Q		
(U) CDL Gold Standard Test System	1-4Q		
(U) ABIT TARS Systems Development/Test	1-4Q	1Q	
(U) Ultra-wideband Airborne Laser Communications Development	1-4Q	1-4Q	1Q
(U) MP-CDL Development	1-4Q	1-2Q	
(U) MR-TCDL for Army Development	1-4Q	1-4Q	1-3Q
(U) 274 Mbp STD-CDL Test and Demo		2-4Q	1-2Q
(U) TIGDL II Upgrades	1-4Q	1-4Q	1-4Q
(U) SCA/IPv6 Compliance Development	1-4Q	1-4Q	1-4Q
(U) Team Portable	3-4Q	1-4Q	1-4Q
(U) COMSEC			1-4Q
(U) MP-CDL Flight Test		2-4Q	1-4Q
(U) Single Network Interface Card		3-4Q	1-4Q
(U) Crypto Modernizaton			1-4Q

Exhibit R-2a, RDT&E Project Justification

DATE: February 2006

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE: 4882 Compass Bright

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
4882 Compass Bright	2.105	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) Beginning in FY06, all funding for Compass Bright is transferred from PE 0305206F, Project 674882, to the new PE 0304260F Airborne SIGINT Enterprise

(U) A. Mission Description and Budget Item Justification

The Compass Bright program develops, demonstrates, and rapidly transitions advanced Air Force-specific signal intelligence (SIGINT) and radio frequency (RF) measurement and signature intelligence (MASINT) capabilities against emerging and future target signals. It is the only USAF program that pursues basic SIGINT research.

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 2005	FY 2006	FY 2007
(U) Continue Compass Bright development projects in the signal intelligence (SIGINT) and radio frequency (RF) and measurement and signature intelligence (MASINT) areas	1.822		
(U) Mission Support, Program Management Activities	0.283		
(U)			
(U) Total Cost	2.105	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) PE 0304260F, Project 5185 - Compass Bright Airborne SIGINT Development		0.392	8.157	8.366	8.596	8.829	9.011	Continuing	TBD

(U) Beginning in FY06, all funding for Compass Bright is transferred from PE 0305206F, Project 674882, to the new PE 0304260F Airborne SIGINT Enterprise

(U) D. Acquisition Strategy

On-going Compass Bright technology development and demonstration contracts will continue through existing laboratory relationships and other existing contractual vehicles with future development projects emphasizing full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: **February 2006**

BUDGET ACTIVITY: **07 Operational System Development**

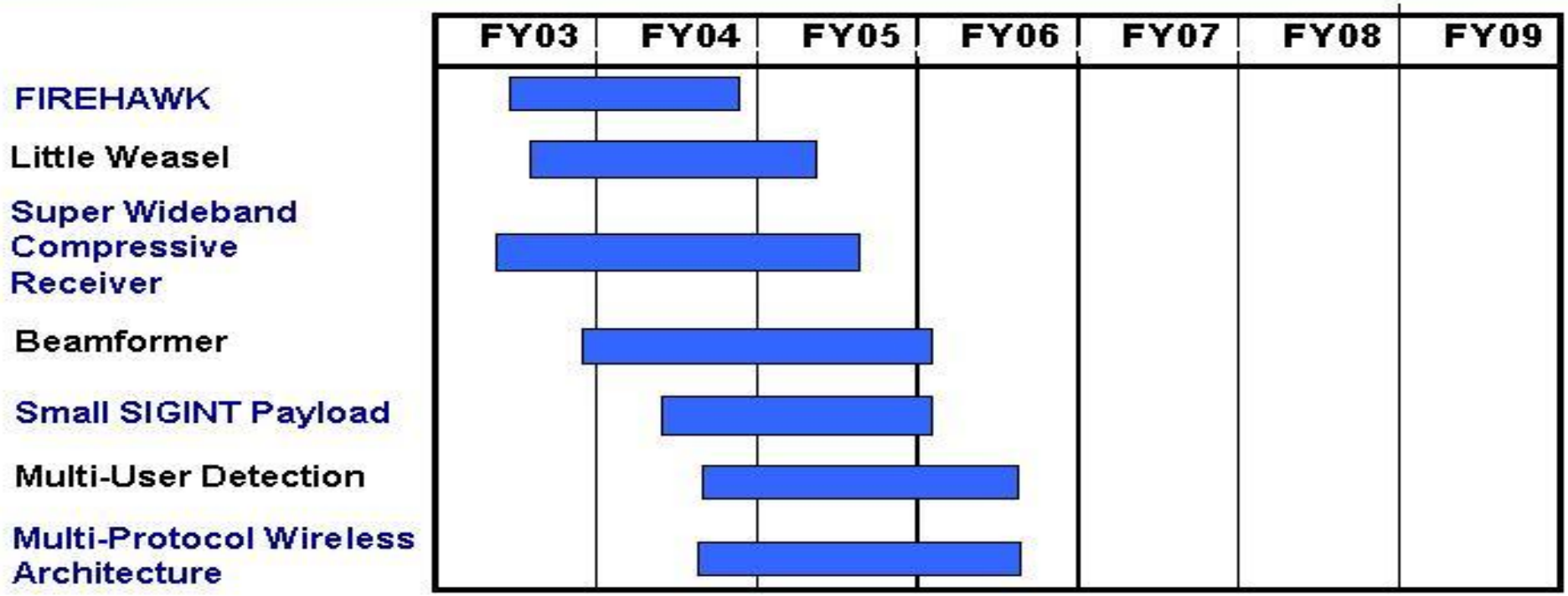
PE NUMBER AND TITLE: **0305206F Airborne Reconnaissance Systems**

PROJECT NUMBER AND TITLE: **4882 Compass Bright**

(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												
Various	TBD	AFRL		1.822							1.822	
Subtotal Product Development			0.000	1.822		0.000		0.000		0.000	1.822	0.000
Remarks:												
(U) Management												
ASC/RAJ				0.283							0.283	
Subtotal Management			0.000	0.283		0.000		0.000		0.000	0.283	0.000
Remarks:												
(U) Total Cost			0.000	2.105		0.000		0.000		0.000	2.105	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE February 2006
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 4882 Compass Bright

COMPASS BRIGHT Project Schedules



Note1: COMPASS BRIGHT Projects are 1-2 years in duration, thus no outyear projects are shown

1

Exhibit R-4a, RDT&E Schedule Detail		DATE: February 2006
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE: 4882 Compass Bright

(U) **Schedule Profile**	FY 2005	FY 2006	FY 2007
(U) FY06 Proposal Call	3Q		
(U) SUAVE-A Demo	4Q		
(U) Superwide Band Compressive Receiver Flt Test	3Q		
(U) Beamformer Flt Test	3Q		
(U) Multi-User Detection Demo		2Q	
(U) Multi-Protocol Wireless Architecture Demo		2Q	

No new projects will be started in FY05 due to funding cut

Exhibit R-2a, RDT&E Project Justification			DATE: February 2006
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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5038	Network Centric Collaborative Targeting	8.101	0.952	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		

(U) A. Mission Description and Budget Item Justification

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

NCCT uses machine-to-machine interfaces and Internet Protocol connectivity to horizontally integrate Battle Management/Command and Control (BM/C2)/Intelligence, Surveillance, and Reconnaissance (ISR) platforms and provide timely detection, identification, and geo-location of high priority targets to combatant commanders and their forces. NCCT will develop and deploy the capability to share data, coordinate sensor activity, and provide rapidly correlated results between dissimilar collection platforms and decision-making nodes. NCCT will develop and refresh core technology required for network-centric interactions, develop platform interfaces system program offices, and field NCCT functionality.

NCCT Core Technology develops machine-to-machine technology to horizontally integrate dissimilar BM C2/ISR assets to include, but not limited to, Rivet Joint, Joint Surveillance Target Attack Radar System (Joint STARS), Airborne Warning and Control System (AWACS), 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 data guards. Core technology also supports the Systems Integration Lab used to develop and test NCCT network centric performance.

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 2005	FY 2006	FY 2007
(U)			
(U) Complete development of NCCT core technology such as NCCT Network Controller, NCCT Communications Equipment, and NCCT Operations Interface for the ACTD.	4.551	0.952	
(U) Platform Integration	2.600	0.000	
(U) Indirect Engineering Support	0.250	0.000	
(U) Test and Evaluation	0.200	0.000	
(U) Management	0.500	0.000	
(U) Total Cost	8.101	0.952	0.000

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

		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)	RC-135 PE 0305207F	1.000	0.100						0.000	2.100
(U)	CDL PE 0305206F (Project 4819)	1.000	1.000						0.000	2.000
(U)	OSD PE 0603750D	1.000	1.000						0.000	2.000
(U)	Army Guardrail PE 0203744A	1.000	1.000						0.000	2.000
(U)	Other APPN									

The ACTD includes participating platforms as shown above. United Kingdom Nimrod is also participating 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 2006**

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 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												
L-3 ComCept, Inc.	CPFF	Prime Contractor/Rockwall, TX		4.551	Oct-04	0.952	Nov-05			0.000	5.503	TBD
Platform Specific Contractors	Various	Platform Integration/ Various		2.600	Oct-04	0.000				0.000	2.600	TBD
Subtotal Product Development			0.000	7.151		0.952		0.000		0.000	8.103	TBD
Remarks:												
(U) Support												
Various Contractors	Various	Indirect engineering support to ACTD/Various locations		0.250	Mar-05	0.000				0.000	0.250	TBD
Subtotal Support			0.000	0.250		0.000		0.000		0.000	0.250	TBD
Remarks:												
(U) Test & Evaluation												
Various	Various	Military Utility Assessment/Various locations		0.200	Nov-04	0.000				0.000	0.200	TBD
Subtotal Test & Evaluation			0.000	0.200		0.000		0.000		0.000	0.200	TBD
Remarks:												
(U) Management												
ASC/BSSG		System Program Office/Dayton, OH		0.500	Jan-05	0.000				0.000	0.500	TBD
Subtotal Management			0.000	0.500		0.000		0.000		0.000	0.500	TBD
Remarks:												
(U) Total Cost			0.000	8.101		0.952		0.000		0.000	9.053	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE: **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	**0305206F Airborne Reconnaissance Systems**	**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 2006
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305206F Airborne Reconnaissance Systems**	PROJECT NUMBER AND TITLE **5038 Network Centric Collaborative Targeting**

(U) Schedule Profile	FY 2005	FY 2006	FY 2007
(U) Core Technology Development	1-4Q	1-4Q	

Exhibit R-2a, RDT&E Project Justification			DATE: February 2006
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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5092 JTC/SIL MUSE	1.931	1.750	1.497	1.738	1.649	1.586	1.533	Continuing	TBD
Quantity of RDT&E Articles	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 Vehicles (UAV) programs within the services. The mission includes Service-specific and Joint UAV 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 UAV 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 UAVs, 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.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2005	FY 2006	FY 2007
(U) Laboratory sustainment	0.367	0.367	0.367
(U) Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) development	1.064	0.883	0.630
(U) Maintenance, Licenses and equipment purchases	0.500	0.500	0.500
(U) Total Cost	1.931	1.750	1.497

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

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 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												
JTC/SIL	MIPR	Redstone Arsenal, Huntsville, AL		1.931	Nov-05	1.750	Nov-06	1.497	Nov-07	Continuing	TBD	TBD
Subtotal Product Development			0.000	1.931		1.750		1.497		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			0.000	1.931		1.750		1.497		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE: February 2006
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE: 5092 JTC/SIL MUSE

PE 35206F, Airborne Reconnaissance Systems
BPAC 5092, JTC/SIL

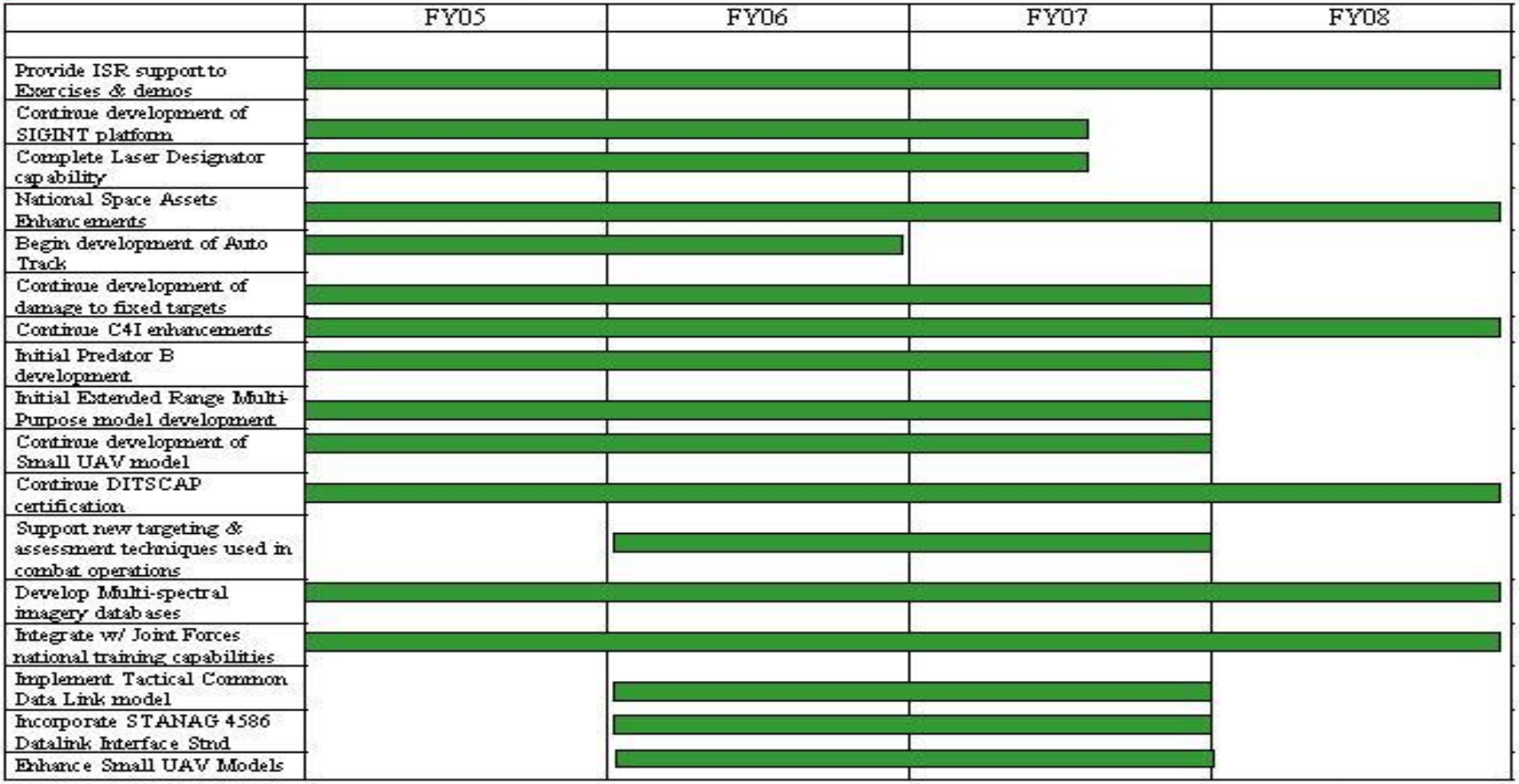


Exhibit R-4a, RDT&E Schedule Detail		DATE February 2006
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305206F Airborne Reconnaissance Systems**	PROJECT NUMBER AND TITLE **5092 JTC/SIL MUSE**

(U) Schedule Profile	FY 2005	FY 2006	FY 2007
(U) MIPR dollars to Redstone Arsenal, Huntsville, AL	1Q	1Q	1Q