

UNCLASSIFIED

PE NUMBER: 0305206F
 PE TITLE: Airborne Reconnaissance Systems

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems
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Cost (\$ in Millions)	FY 2007 Actual	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	51.842	64.441	149.752	235.372	228.121	151.980	75.926	Continuing	TBD
4818 Imaging and Targeting Support	15.594	26.774	110.518	195.334	187.651	110.757	33.882	Continuing	TBD
4819 Common Data Link (CDL)	34.757	35.922	37.577	38.443	38.931	39.654	40.443	Continuing	TBD
5092 JTC/SIL MUSE	1.491	1.745	1.657	1.595	1.539	1.569	1.601	Continuing	TBD

FY2008 funding totals do not include \$1.52M FY2008 GWOT requirements still pending Congressional consideration.

FY06, Project Number 675038, Network Centric Collaborative Targeting (NCCT) ACTD was completed and program developments were transferred 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)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	52.624	64.869	67.003
(U) Current PBR/President's Budget	51.842	64.441	149.752
(U) Total Adjustments	-0.782	-0.428	
(U) Congressional Program Reductions		-0.016	
Congressional Rescissions		-0.412	
Congressional Increases			
Reprogrammings	-0.782		
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			

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BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE		
07 Operational System Development				0305206F Airborne Reconnaissance Systems			4818 Imaging and Targeting Support		
Cost (\$ in Millions)	FY 2007 Actual	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	15.594	26.774	110.518	195.334	187.651	110.757	33.882	Continuing	TBD
Quantity of RDT&E Articles	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, persistent, wide area surveillance and common imagery reconnaissance sensor capabilities (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) and associated Tasking Processing Exploitation and Dissemination (TPED) 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, Low Light, Laser Radar [LADAR]) and their operational modes (High Resolution Imagery, Moving Target Indication, Persistent Surveillance, Wide Area Surveillance, Spectral Identification) for multiple airborne platforms.

Development and demonstration of advanced airborne tactical sensor and associated TPED processing algorithms and tools (automatic registration, automatic and assisted target detection, network centric warfare). Development of integrated multi-sensor capabilities to detect and identify obscured targets (OT). Development and implementation of 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).

Funding increase beginning in FY09 will meet Combatant Commander (COCOM) Wide Area Airborne Surveillance (WAAS) urgent operational need and will be managed by the Air Force through the 645th Aeronautical Systems Group (AESG, aka BIG SAFARI), Reconnaissance Systems Wing, Aeronautical Systems Center, Air Force Material Command.

Starting in FY09, provide a temporary Air Force funding repository for DARPA Blackswift program. Blackswift is an unmanned, hypersonic, on-demand, large-area ISR and strike vehicle. A separate Program Element will be established later this year.

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

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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 4818 Imaging and Targeting Support
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(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Continue development and delivery of sensor models for airborne reconnaissance platforms.	0.157	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.	7.650	8.630	6.000
(U) Develop Obscured Target (OT) sensor capabilities (e.g. foliage penetration synthetic aperture radar (FOPEN SAR) and target identification (ID) laser radar (LADAR)).	3.379	5.590	5.070
(U) Continue Obscured Target Roadmap Study	1.075	0.250	0.000
(U) Develop automatic and assisted target detection algorithms and tools.	0.000	0.500	3.500
(U) Procure 4 ACES Hy Sensors, integrate onto the MQ-1 Predator UAS, and provide training and support for these systems.	0.000	10.182	10.233
(U) Continue image quality base lining and assessment efforts for airborne reconnaissance platforms.	2.000	0.000	0.000
(U) Initiate development of wide area airborne surveillance (sensors, platforms, and associated TPED) capability, using manned and unmanned testbeds.	0.000	0.000	34.000
(U) Provide a temporary repository for AF funds supporting DARPA Blackswift unmanned, hypersonic ISR and Strike vehicle.	0.000	0.000	50.000
(U) Mission Support	1.333	1.622	1.715
(U) Total Cost	15.594	26.774	110.518

(U) C. Other Program Funding Summary (\$ in Millions)	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>		
(U) Joint Capability Technology Demonstration (0604648D8Z, OSD)			2.000	6.000	6.000	7.000	7.000	0.000	28.000
(U) AFRDT & E (PE 63203F, AFRL)	3.500	1.500	0.000	0.000	0.000	0.000	0.000	0.000	5.000
-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.

 In response to an urgent operational need the WAAS program will be executed by the 645 AESG (BIG SAFARI program office) using an incremental 'baseline'

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Systems**

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4818 Imaging and Targeting Support

strategy to mitigate risk, find affordable end-to-end architecture solutions and field needed capabilities quickly.

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Exhibit R-3, RDT&E Project Cost Analysis

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07 Operational System Development				0305206F Airborne Reconnaissance Systems				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 2007 Cost	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) <u>Product Development</u>												
BAE Systems (SPIRITT)	C/CPFF	Greenlawn, NY	24.573	5.900	Oct-06	6.530	Jan-08	6.000	Jan-09	Continuing	TBD	TBD
General Atomics (HYCAS)	SS/CPFF	Rancho Bernardo, CA		0.238	Dec-07						0.238	0.350
Essex Corp (OT-SAR)	Phase III SBIR	Columbia, MD	0.750	2.354	Feb-07	4.420	Feb-08	3.000	Jan-09	Continuing	TBD	10.524
ITT Space Systems (Image Quality)	SS/CPFF	Rochester, NY	3.840	1.000	Dec-06						4.840	4.840
General Dynamics (Image Quality)	SS/CPFF	Ypsilanti, MI	3.450	1.000	Nov-06						4.450	4.450
Georgia Tech Research Institute (GTRI)	SS/CPFF	Dayton, OH	0.200	0.471	Nov-06	0.250	Jan-08				0.921	0.921
Lockheed Martin ADP (SPIRITT)	SS/CPFF	Palmdale, CA	0.000	0.925	Nov-06	1.200	Feb-08				2.125	2.125
											0.000	
Others (including new WAAS program of record and Blackswift funding for DARPA)	Various	Various		2.373	Mar-07	12.752	Mar-08	99.803	Mar-09	Continuing	TBD	TBD
Subtotal Product Development			32.813	14.261		25.152		108.803		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u>											0.000	
Subtotal Support			0.000	0.000		0.000		0.000			0.000	0.000
Remarks:												
(U) <u>Test & Evaluation</u>											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000			0.000	0.000
Remarks:												
(U) <u>Management</u>												
ASC (ITS)	Various	Wright Patterson, AFB		1.333	Oct-06	1.622	Oct-07	1.715	Oct-08	Continuing	TBD	TBD
Subtotal Management			0.000	1.333		1.622		1.715		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			32.813	15.594		26.774		110.518		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

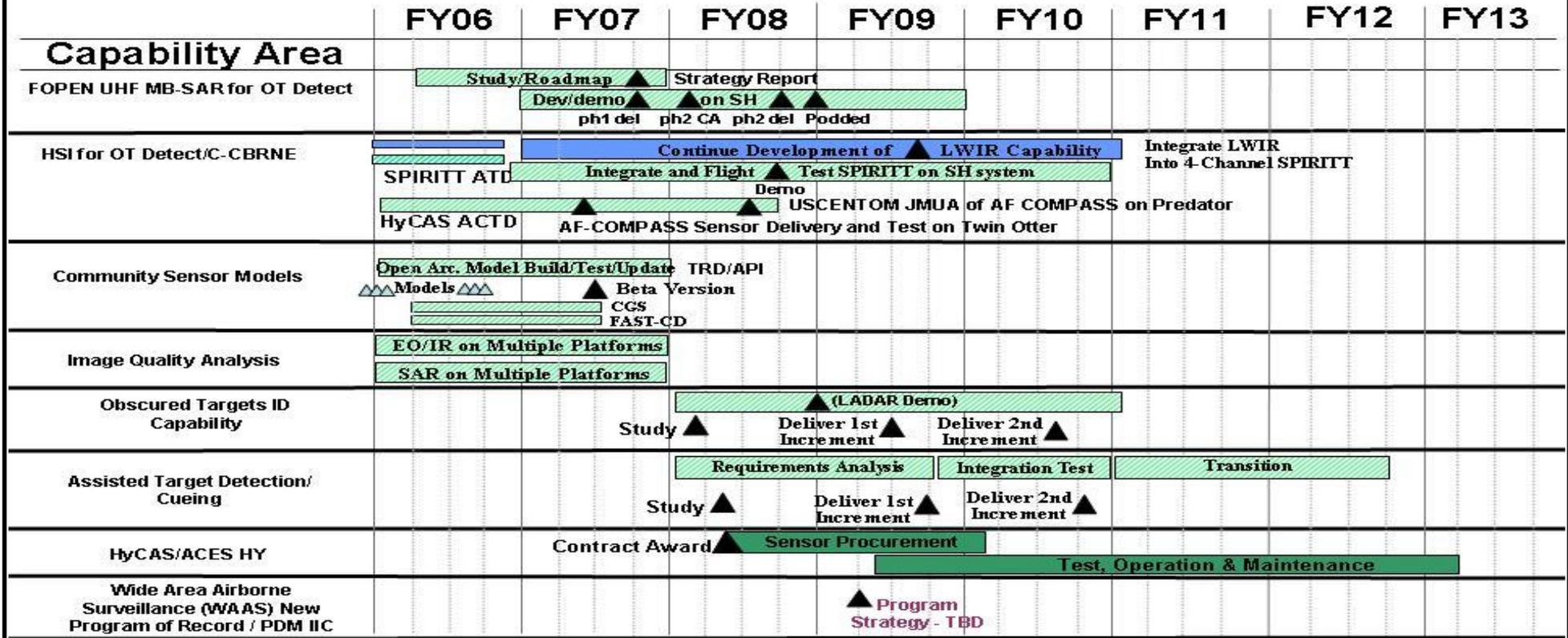
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07 Operational System Development

PE NUMBER AND TITLE
0305206F Airborne Reconnaissance Systems

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4818 Imaging and Targeting Support



- Funded by AFRL
- Funded by I&TS
- OSD PDM III plus-up
- OSD PDM IIC

ATD: Advanced Technology Demo MS: Milestone TRD: Technical Requirements Document
 HSI: Hyperspectral Information CONEMP: Concept of Employment API: Application Program Interface
 FOPEN: Foliage Penetration SPIRITT: Spectral Infrared Remote Imaging Transition Testbed
 HyCAS: Hyperspectral Collection and Analysis System

Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 4818 Imaging and Targeting Support
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(U) <u>Schedule Profile</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) ITS: Community Sensor Model Deliveries	2Q		
(U) ITS: Demonstrate SPIRITT in C-130 Pod		4Q	
(U) ITS: SPIRITT Long Wave Hyperspectral Integration			3Q
(U) ITS: Obscured Target Sensor Capabilities Study Strategy Report	2Q		
(U) Obscured Target UHF SAR Phase 1 Enhancement Delivery	3Q		
(U) Obscured Target UHF SAR Phase 2 Enhancement Contract Award		1Q	
(U) Obscured Target UHF SAR Phase 2 Enhancement Delivery		4Q	
(U) ITS: Deliver Podded MB SAR Capability		4Q	
(U) ITS: Demonstrate LADAR Sensor for OT Identification			2Q
(U) ACES Hy Contract Award		2Q	
(U) WAAS: Initiate WAAS program development			2Q

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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 2007 Actual	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)	34.757	35.922	37.577	38.443	38.931	39.654	40.443	Continuing	TBD
Quantity of RDT&E Articles	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)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(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.	5.782	12.206	11.093
(U) Continued development of A-Series terminals and waveforms (e.g. MR-TCDL and SCA/IPv6 compliant waveforms) for integration into ISR platforms and programs such as ACS, Apache, DCGS-A and Objective Gateway.	14.363	10.116	8.991
(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.	6.205	0.000	0.000
(U) Continued configuration control of CDL architecture, standards, specification, and modules.	2.108	2.563	2.683
(U) Continued development of COMSEC replacement and transition to development of software reprogrammable COMSEC.	3.262	0.228	0.910

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Exhibit R-2a (PE 0305206F)

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(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(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 interoperability certification and spectrum management requirements to include OSD mandates.	0.732	8.909	11.943
(U) CDL technical and engineering support.	2.305	1.900	1.957
(U) Total Cost	34.757	35.922	37.577

(U) C. Other Program Funding Summary (\$ in Millions)	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) None									

(U) **D. Acquisition Strategy**
 The CDL Executive Agent, supported by the 653rd Electronics System Group (ELSG) in concert with other program offices and laboratories, provides for development of common, interoperable wideband ISR data links 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.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE				
07 Operational System Development				0305206F Airborne Reconnaissance Systems				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 2007 Cost	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) <u>Product Development</u>												
L-3 Communications	C & S; CPAF, CPFF, CPIF	Salt Lake City, UT		18.569	Jan-07	13.137	Jan-08	5.486	Jan-09	Continuing	TBD	TBD
Rockwell Collins Harris Corp	C & S; CPFF	Melbourne, FL		1.167	Jan-07		Jan-08	3.424	Jan-09	Continuing	TBD	TBD
SATCOM Interop/Other Govt Orgs	S; MIPR, CPIF	Multiple		0.100	Jan-07	0.450	Jan-08	2.058	Jan-09	Continuing	TBD	
L-3 COMCEPT ITT	C; CPFF; C; IDIQ	Rockwall, TX Beavercreek, OH									0.000	21.619
Cubic Raytheon	C, CPFF	San Diego, CA		3.117	Jan-07	2.200	Jan-08	1.900	Jan-09	Continuing	TBD	TBD
TBD (pending competitive selection for test set vendor)								2.239	Apr-09	Continuing	TBD	TBD
Viasat	CPIF	San Diego CA		1.167	Jan-07	0.000	Jan-08				1.167	
Other	S; MIPR, CPFF	Multiple		3.500	Jan-07	6.600	Jan-08	5.839	Jan-09	Continuing	TBD	TBD
Subtotal Product Development			0.000	27.620		26.646		27.946		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u>												
Various	C & S; CPFF, MIPR	Multiple		5.434	Jan-07	5.380	Jan-08	5.582	Jan-09	Continuing	TBD	TBD
Subtotal Support			0.000	5.434		5.380		5.582		Continuing	TBD	TBD
Remarks:												
(U) <u>Test & Evaluation</u>												
JITC	MIPR	Fort Huachuca, AZ		0.309	Jan-07	0.800	Jan-08	0.824	Jan-09	Continuing	TBD	TBD
Subtotal Test & Evaluation			0.000	0.309		0.800		0.824		Continuing	TBD	TBD
Remarks:												
(U) <u>Management</u>												
Various	MIPR	Multiple		1.394	Jan-07	3.096	Jan-08	3.225	Jan-09	Continuing	TBD	TBD
Subtotal Management			0.000	1.394		3.096		3.225		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			0.000	34.757		35.922		37.577		Continuing	TBD	TBD

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Exhibit R-3 (PE 0305206F)

Exhibit R-4, RDT&E Schedule Profile

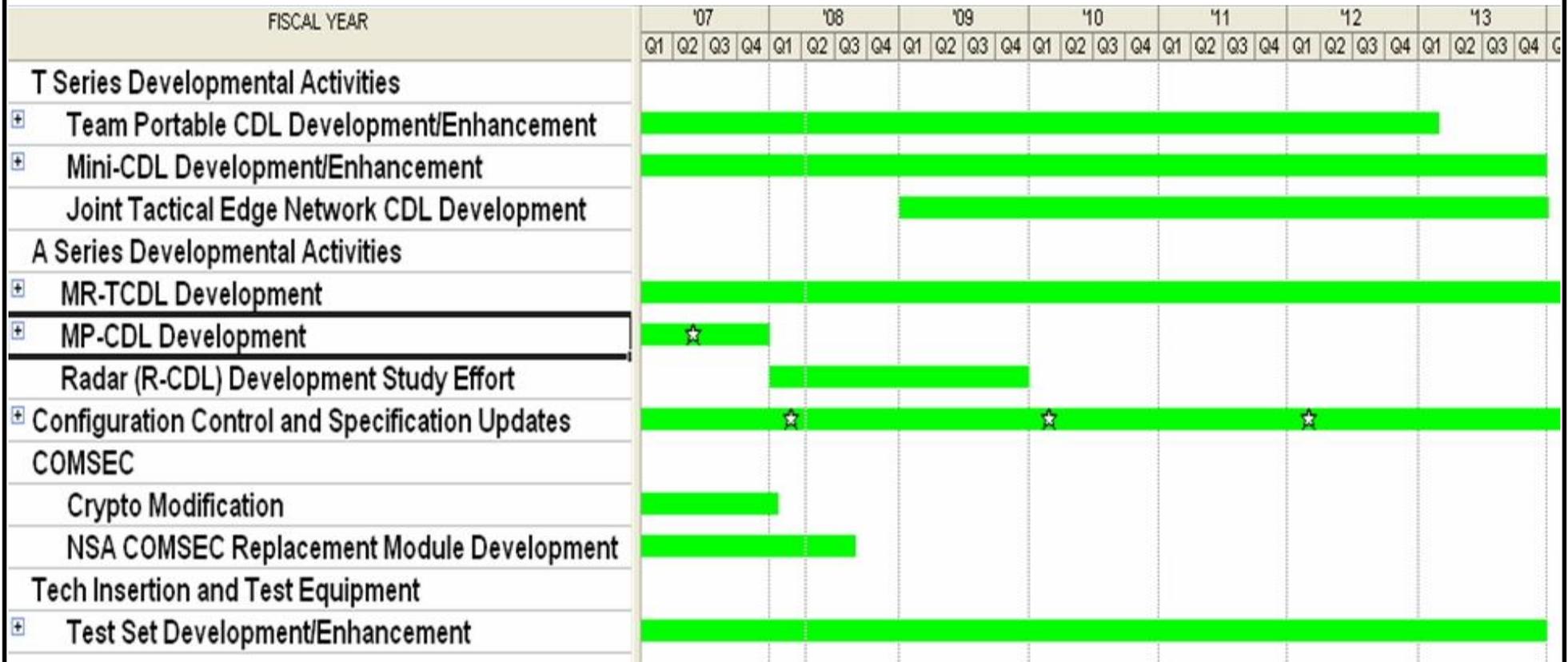
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PROJECT NUMBER AND TITLE
4819 Common Data Link (CDL)



LEGEND

Major Event or Milestone



Planned Ongoing Activity



Ongoing Activity That is Complete



Completed Event



Planned Task



As Of: 10 Jan 08

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4819 Common Data Link (CDL)

(U) Schedule Profile

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Multi-Role TCDL Development	1-4Q	1-4Q	1-4Q
(U) Team Portable CDL Development	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
(U) MP-CDL Development	1-4Q		
(U) Configuration Control and Specification Updates	1-4Q	1-4Q	1-4Q
(U) Crypto Modernization	1-4Q		
(U) COMSEC Replacement Module Development	1-4Q	1-2Q	
(U) CDL Test Equipment	1-4Q	1-4Q	1-4Q
(U) Radar CDL (R-CDL)		1-4Q	1-4Q

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Cost (\$ in Millions)	FY 2007 Actual	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	1.491	1.745	1.657	1.595	1.539	1.569	1.601	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 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.

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Laboratory sustainment	0.334	0.334	0.334
(U) Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) development	0.657	0.911	0.823
(U) Maintenance, Licenses and equipment purchases	0.500	0.500	0.500
(U) Total Cost	1.491	1.745	1.657

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PE NUMBER AND TITLE

0305206F Airborne Reconnaissance Systems

PROJECT NUMBER AND TITLE

5092 JTC/SIL MUSE

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(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.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2008

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 5092 JTC/SIL MUSE
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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2007 Cost</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u> JTC/SIL	MIPR	Redstone Arsenal, Huntsville, AL		1.491	Jan-07	1.745	Jan-08	1.657	Jan-09	Continuing	TBD	TBD
Subtotal Product Development			0.000	1.491		1.745		1.657		Continuing	TBD	TBD
Remarks:												
<u>(U) Total Cost</u>			0.000	1.491		1.745		1.657		Continuing	TBD	TBD

Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2008

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT NUMBER AND TITLE 5092 JTC/SIL MUSE		
		<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Schedule Profile		1-4Q	1-4Q	1-4Q
(U) Provide ISR support to exercises and demonstrations		1-4Q	1-4Q	1-4Q
(U) Continue development of SIGINT platforms		1-4Q	1-4Q	1-4Q
(U) Complete Laser Designator capability		1-4Q	1-4Q	1-4Q
(U) National space assets enhancements		1-4Q	1-4Q	1-4Q
(U) Continue development of aut track		1-4Q	1-4Q	1-4Q
(U) Continue development of damage to fixed targets		1-4Q	1-4Q	1-4Q
(U) Continue C4I enhancements		1-4Q	1-4Q	1-4Q
(U) Continue Predator B (Reaper) development		1-4Q	1-4Q	1-4Q
(U) Continue extended range multi-purpose model development		1-4Q	1-4Q	1-4Q
(U) Continue development of Small UAV model		1-4Q	1-4Q	1-4Q
(U) Continue HLA, DITSCAP certification, & DIACAP transition		1-4Q	1-4Q	1-4Q
(U) Support new targeting and assessment techniques used in combat operations		1-4Q	1-4Q	1-4Q
(U) Develop multi-spectral imagery databases		1-4Q	1-4Q	1-4Q
(U) Integrate with Joint Forces national training capabilities		1-4Q	1-4Q	1-4Q
(U) Implement Tactical Common Data Link model		1-4Q	1-4Q	1-4Q
(U) Incorporate STANAG 4586 Datalink interface standard		1-4Q	1-4Q	1-4Q
(U) Continue UAS survivability models & attributes		1-4Q	1-4Q	1-4Q