Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance Systems

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	111.170	145.413	168.963	0.000	168.963	152.123	105.939	79.914	72.442	Continuing	Continuing
674818: Imaging and Targeting Support	20.742	52.635	13.345	0.000	13.345	12.254	13.836	13.939	14.361	Continuing	Continuing
674819: Common Data Link (CDL)	37.475	37.694	37.806	0.000	37.806	38.021	38.685	39.268	39.845	Continuing	Continuing
675092: JTC/SIL MUSE	1.653	3.470	3.374	0.000	3.374	3.388	3.473	3.488	3.500	Continuing	Continuing
675291: Gorgon Stare	37.500	46.000	31.833	0.000	31.833	0.000	0.000	0.000	0.000	Continuing	Continuing
675292: Airborne Cueing & Exploitation Sys- Hyperspectral(ACES HY)	13.800	5.614	3.894	0.000	3.894	2.908	2.893	2.944	2.930	0.000	0.000
675382: Wide Area Airborne Surveillance Program of Record (WAAS POR)	0.000	0.000	78.711	0.000	78.711	95.552	47.052	20.275	11.806	0.000	0.000

## 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.

Funds in any project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

#### **UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance Systems

## **B. Program Change Summary (\$ in Millions)**

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	103.870	143.892	0.000	0.000	0.000
Current President's Budget	111.170	145.413	168.963	0.000	168.963
Total Adjustments	7.300	1.521	168.963	0.000	168.963
<ul> <li>Congressional General Reductions</li> </ul>		0.000			
<ul> <li>Congressional Directed Reductions</li> </ul>		0.000			
<ul> <li>Congressional Rescissions</li> </ul>	0.000	0.000			
<ul> <li>Congressional Adds</li> </ul>		0.000			
<ul> <li>Congressional Directed Transfers</li> </ul>		0.000			
<ul> <li>Reprogrammings</li> </ul>	0.000	0.000			
<ul> <li>SBIR/STTR Transfer</li> </ul>	0.000	0.000			
<ul> <li>Other Adjustments</li> </ul>	7.300	1.521	168.963	0.000	168.963

## **Change Summary Explanation**

Note: Funding added for Gorgon Stare improvements (\$3.5M) and FY08 funding withhold payback (\$3.8M).

Exhibit R-2A, RDT&E Project Just	tification: Pl	3 2011 Air F	orce						<b>DATE</b> : Feb	ruary 2010	
APPROPRIATION/BUDGET ACTI 3600: Research, Development, Tes BA 7: Operational Systems Develo	st & Evaluatio	n, Air Force			<b>IOMENCLA</b> 6F: <i>Airborne</i>		sance	PROJECT 674818: Imaging and Targeting Suppo			port
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674818: Imaging and Targeting Support	20.742	52.635	13.345	0.000	13.345	12.254	13.836	13.939	14.361	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

#### 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 areas:

Development and integration of common radar and electro-optical sensors (Synthetic Aperture Radar [SAR], Low Frequency SAR, and antennas, 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).

ACES HY moved to new BPAC 675292 starting in FY09.

**UNCLASSIFIED** 

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			<b>DATE</b> : February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0305206F: Airborne Reconnaissance	674818: <i>Im</i>	aging and Targeting Support
BA 7: Operational Systems Development	Systems		

GORGON STARE (formerly WAAS) moved to new BPAC 675291 starting in FY09.

New Wide Area Surveillance Program of Record included in BPAC for FY10 only (\$38.705 RDT&E). Moved to new BPAC 675382 starting in FY11.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

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

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Develop/demonstrate next-gen Hyperspectral (HSI), Foliage/Ground Penetration (FOPEN/GPEN), Obscured Target (OT), Wide Area Airborne Surveillance (WAAS) and Cooperative Observation Ca	20.742	52.635	13.345	0.000	13.345
FY 2009 Accomplishments: In FY 2009: continue HSI and FOPEN/GPEN efforts. Start OT investigations and Multiple UAS Cooperative Observation and Engagement effort.					
FY 2010 Plans: In FY 2010: continue all efforts. Expand WAAS efforts by initiating a WAAS Program of Record (POR).					
FY 2011 Base Plans: In FY 2011: continue FY 2010 efforts except Multiple UAS Cooperative Observation and Engagement WAAS POR (move to separate BPAC 675382).					
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	20.742	52.635	13.345	0.000	13.345

## **UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE PROJECT

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance

674818: Imaging and Targeting Support

BA 7: Operational Systems Development

Systems

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

			FY 2011	<u>FY 2011</u>	<u>FY 2011</u>					Cost Io	
<u>Line Item</u>	FY 2009	FY 2010	<b>Base</b>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
PE Not Provided (392): Activity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Not Provided											

## **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.

#### **E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

Systems

**PROJECT** 

674818: Imaging and Targeting Support

## **Product Development (\$ in Millions)**

				FY 2	FY 2010		2011 se	FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BAE Systems (SPIRITT)	C/CPFF	BAE Greenlawn, NY	45.435	8.000	Jan 2010	7.890	Jan 2011	0.000		7.890	Continuing	Continuing	Continuing
Essex Corp (MS-SAR)	TBD/TBD	Essex Columbia, MD	13.114	2.400	Jan 2010	2.000	Jan 2011	0.000		2.000	Continuing	Continuing	Continuing
Proxy Aviation (Multiple UAS Cooperation)	TBD/TBD	Proxy Germantown, MD	4.100	1.600	May 2010	0.000		0.000		0.000	0.000	5.700	0.000
Wide Area Surveillance Program of Record	TBD/TBD	TBD TBD	0.000	38.705	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Others	Various/ Various	Various Various	6.460	0.000		1.505	Jan 2011	0.000		1.505	Continuing	Continuing	Continuing
		Subtotal	69.109	50.705		11.395		0.000		11.395			

#### Remarks

## **Management Services (\$ in Millions)**

				FY 2	010	FY 2 Ba	-	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASC (ITS)	Various/ Various	ASC Wright Patterson, AFB	2.200	1.930	Oct 2009	1.950	Oct 2010	0.000		1.950	Continuing	Continuing	Continuing
		Subtotal	2.200	1.930		1.950		0.000		1.950			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**PROJECT** 

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance

674818: Imaging and Targeting Support

BA 7: Operational Systems Development

**Systems** 

## **Management Services (\$ in Millions)**

				FY 2	2010		2011 ise		2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

#### Remarks

	Total Prior Years Cost	FY 2010		2011 ase		2011 CO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	71.309	52.635	13.345		0.000		13.345			

#### Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

**DATE:** February 2010

#### APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

#### R-1 ITEM NOMENCLATURE

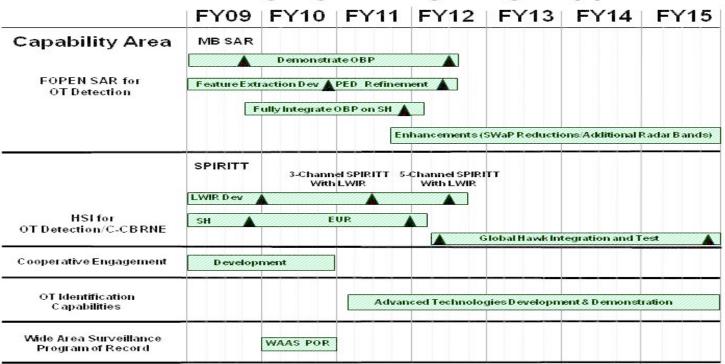
PE 0305206F: Airborne Reconnaissance

**Systems** 

## **PROJECT**

674818: Imaging and Targeting Support

## Imaging & Targeting Support



C-CBRNE: Counter-Chemical, Biological, Radiological, Nuclear, & Explosive EUR: Extended Use of Residuals

FOPEN: Foliage Penetration HSI: Hyperspectral Imaging LWR: Long-Wave InfraRed OBP: On-Board Processor OT: Obscured Target PED: Processing, Exploitation, & Dissemination SH: Shadow Harvest

SPIRITT: Spectral Infrared Remote Imaging Transition Testbed SWaP: Size, Weight, & Power

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force			<b>DATE:</b> February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0305206F: Airborne Reconnaissance	674818: <i>Im</i>	aging and Targeting Support
BA 7: Operational Systems Development	Systems		

## Schedule Details

	St	art	End		
Event	Quarter	Year	Quarter	Year	
FOPEN/GPEN SAR Development	1	2009	4	2011	
HSI/SPIRITT Development	1	2009	4	2011	
Obscured Targets ID Capability	1	2011	4	2011	
Wide Area Surveillance Program of Record	1	2010	4	2010	
Cooperative Engagement	1	2009	4	2010	

DATE: February 2010

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APPROPRIATION/BUDGET ACTIV 3600: Research, Development, Test BA 7: Operational Systems Develop	& Evaluatio	n, Air Force			<b>IOMENCLA</b> 6F: <i>Airborne</i>	TURE Reconnaiss	ance	<b>PROJECT</b> 674819: <i>Co</i>	mmon Data	Link (CDL)	
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674819: Common Data Link (CDL)	37.475	37.694	37.806	0.000	37.806	38.021	38.685	39.268	39.845	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

#### A. Mission Description and Budget Item Justification

Fyhibit R-24 RDT&F Project Justification: PR 2011 Air Force

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 data-link terminals and update/maintenance of the CDL specification. CDL Military Intelligence Program (MIP) funds are used to ensure design configuration, commonality, and interoperability, including testing, 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 also focused on complying with OSD mandates for Internet Protocol Version 6 (IPv6) incorporation, use of cryptographic (COMSEC) equipment; and direction to minimize spectrum usage and occupancy.

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 lifecycle costs to the user.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

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

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

**UNCLASSIFIED** 

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0305206F: Airborne Reconnaissa Systems	ance	<b>PROJECT</b> 674819: <i>Cc</i>	mmon Data	Link (CDL)	
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Utilize MIP funds for CDL evolutionary terminal d CDL Executive Agent (CDL EA)	evelopment per CDL IPT direction to the	23.475	14.768	9.109	0.000	9.109
FY 2009 Accomplishments: In FY 2009: CDL completed development of a software-prograr platform use. The CDL community also continued developmen MultiRole-Tactical CDL (MR-TCDL), and Mini-CDL) for integrat such as Apache, Phoenix, DCGS-A, VideoScout, and SkyWarri	t of terminals (e.g. Team Portable-CDL, tion into ISR platforms and programs					
FY 2010 Plans: In FY 2010: Continues development of TP-CDL, MR-TCDL, and finishing Increment 2 Mini-CDL terminals from both vendors.	d Mini-CDL, with the accomplishment of					
FY 2011 Base Plans: In FY 2011: Will complete development of TP-CDL and will draw CDL. Will begin development of a tactical Network-CDL (N-CDL)						
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Utilize MIP funds for CDL specification and wave CDL IPT direction to the CDL EA.	eform maintenance and development per	7.882	8.934	8.094	0.000	8.094
FY 2009 Accomplishments:  In FY 2009: Continued development of Revision H to the Stand began development of Revision A to the Bandwidth Efficient CE maintained configuration control of the CDL architecture, standa Continued study of the proposed Radar-CDL waveform.	DL (BE-CDL) specification, as well as					

**UNCLASSIFIED** 

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0305206F: Airborne Reconnaissa Systems	ance	<b>PROJECT</b> 674819: <i>Co</i>	mmon Data	Link (CDL)	
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Having released Revision H of Std-CDL, continuing begining reviews of Discovery-CDL (D-CDL) and the CAPSTON to maintain configuration control of the CDL architecture, stands  FY 2011 Base Plans: In FY 2011: Will continue review of the CAPSTONE specification CDL specification. Will continue to maintain configuration control specifications, and modules.	NE overarching specification. Continue ards, specifications, and modules.					
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Utilize MIP funds for CDL advanced technology i to the CDL EA.	nsertion studies per CDL WIPT direction	6.118	13.992	20.603	0.000	20.603
FY 2009 Accomplishments: In FY 2009: Conducted advanced technology insertion studies, certification test equipment and implementing related joint inter-						
FY 2010 Plans: In FY 2010: Continuing advanced technology insertion efforts in capability to build BE-CDL waveforms (advanced CDL wavefor information with the Digital Data Link program, sending CDL ov demonstrating CDL waveforms in other portions of the radio free	m development), sharing networking er phased array antennas, and					
FY 2011 Base Plans: In FY 2011: Technology developments will continue to increase implementation and development of a high data rate CDL wave						

**UNCLASSIFIED** 

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE PROJECT

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance 674819: Common Data Link (CDL)

BA 7: Operational Systems Development

Systems

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
multispectral CDL waveform portability, increased spectrum efficiency, and multi-sensor to multi-user studies.					
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	37.475	37.694	37.806	0.000	37.806

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

		•	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<b>Base</b>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	<b>Complete</b>	Total Cost
• PE Not Provided (665): Activity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Not Provided											

## 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, NSA/JITC certifications, integration, and installation. Acquisition strategy varies by contract. When possible, contracts are awarded under full and open competition.

#### **E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

Systems

**PROJECT** 

674819: Common Data Link (CDL)

## **Product Development (\$ in Millions)**

				FY 2	2010	FY 2 Ba	-	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
L-3 Communications (Mini, MR-TCDL)	Various/ Various	L-3 Communications Salt Lake City, UT	9.370	3.710	Jan 2010	1.000	Jan 2011	0.000		1.000	Continuing	Continuing	Continuing
Rockwell Collins (Mini)	SS/CPFF	Rockwell Collins Cedar Rapids, IA	3.500	1.566	Jan 2010	1.000	Jan 2011	0.000		1.000	Continuing	Continuing	Continuing
SATCOM Interop/Other Govt Orgs	SS/Various	Various Various	0.300	0.000	Jan 2010	0.312	Jan 2011	0.000		0.312	Continuing	Continuing	0.000
Centech Group (Radar CDL)	SS/CPFF	Centech Group Arlington, VA	0.000	0.000		5.000	Jan 2011	0.000		5.000	0.000	5.000	0.000
Centech Group (CDL Spec Support Team)	SS/CPFF	Centech Group Salt Lake City, UT	1.989	2.400	Feb 2010	2.400	Feb 2011	0.000		2.400	0.000	6.789	0.000
ITT	C/TBD	ITT Beavercreek, OH	0.000	0.000		0.000		0.000		0.000	0.000	0.000	4.500
Cubic (Team Portable, AWV, AESA Demo, MultiSpectral)	C/CPFF	Cubic San Diego, CA	2.140	9.797	Feb 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Lear Siegler Services (Test Set)	TBD/TBD	LSI Shrewsbury, NJ	2.865	3.236	Jan 2010	4.500	Jan 2011	0.000		4.500	Continuing	Continuing	Continuing
Other	SS/Various	Various Various	3.873	4.171	Jan 2010	6.797	Jan 2011	0.000		6.797	Continuing	Continuing	Continuing
		Subtotal	24.037	24.880		21.009		0.000		21.009			

**Remarks** 

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

**R-1 ITEM NOMENCLATURE** 

**PROJECT** 

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance

674819: Common Data Link (CDL)

BA 7: Operational Systems Development

Systems

## **Support (\$ in Millions)**

				FY 2	010	FY 2 Ba	2011 se	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various/ Various	Various Various	4.121	5.323	Jan 2010	12.294	Jan 2011	0.000		12.294	Continuing	Continuing	Continuing
		Subtotal	4.121	5.323		12.294		0.000		12.294			

#### Remarks

Advanced Technology Insertion Efforts FY 10/11 (Digital Data Link, Multi-spectral demos, High Data rate CDL)

## **Test and Evaluation (\$ in Millions)**

						FY 2	2011	FY 2		FY 2011			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2	Award Date	Ba Cost	Award Date	Cost	Award Date	Total Cost	Cost To	Total Cost	Target Value of Contract
Joint Interoperability Test Center	TBD/TBD	JITC Fort Huachuca, AZ	0.824	1.000	Jan 2010	1.200	Jan 2011	0.000	Date	1.200	Continuing	Continuing	Continuing
Northrop Grumman (MR- T CDL Test)	TBD/TBD	Northrup Grumman Herndon, VA	6.000	2.000	Dec 2009	0.000		0.000		0.000	0.000	8.000	0.000
		Subtotal	6.824	3.000		1.200		0.000		1.200			

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

Systems

**PROJECT** 

674819: Common Data Link (CDL)

## **Management Services (\$ in Millions)**

				FY 2	2010	FY 2 Ba	-	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	Various Various	2.493	4.491	Nov 2009	3.303	Jan 2011	0.000		3.303	Continuing	Continuing	Continuing
		Subtotal	2.493	4.491		3.303		0.000		3.303			

#### Remarks

	Total Prior Years Cost	FY 2010		2011 Ise	FY 2	-	FY 2011 Total	Cost To	Total Cost	Target Value of Contract
			_							
Project Cost Totals	37.475	37.694	37.806		0.000		37.806			l

#### **Remarks**

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

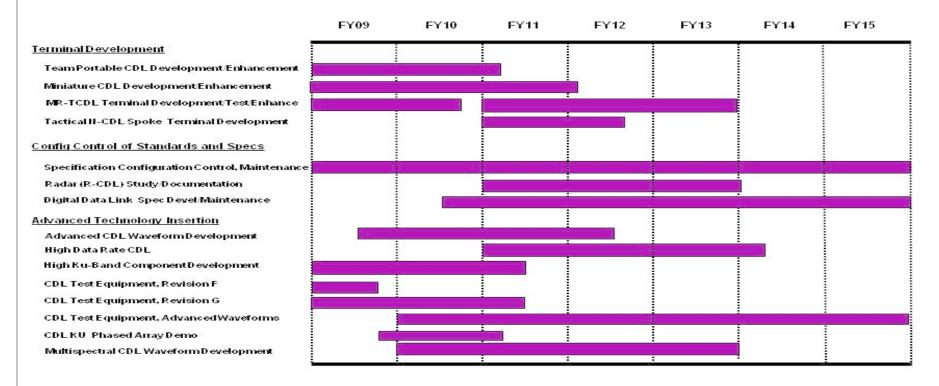
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

DATE: February 2010

R-1 ITEM NOMENCLATURE
PE 0305206F: Airborne Reconnaissance
Systems

PROJECT
674819: Common Data Link (CDL)

#### Common Data Link



As-of 17 Dec 09

#### **UNCLASSIFIED**

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

Systems

**PROJECT** 

674819: Common Data Link (CDL)

## Schedule Details

	Sta	art	En	ıd
Event	Quarter	Year	Quarter	Year
Team Portable CDL Development	1	2009	1	2011
Miniature CDL Development	1	2009	4	2011
MR-TCDL Development	1	2009	3	2010
MR-TCDL Development and Test	1	2011	4	2011
Tactical N-CDL Spoke Terminal Development	1	2011	4	2011
Spec Configuration Control, V&V, Updates	1	2009	4	2011
Radar CDL Study/Spec Development	1	2011	4	2011
Digital Data Link Spec Development	2	2010	4	2011
Advanced CDL Waveforms Development/Test	2	2009	4	2011
High Data Rate CDL	1	2011	4	2011
High KU-Band Component Development	1	2009	2	2011
CDL Test Equipment, Rev F	1	2009	3	2009
CDL Test Equipment Rev G	1	2009	2	2011
CDL Test Equipment Advanced Waveforms	1	2010	4	2011
CDL Ku Phased Array Demo	4	2009	1	2011
Multi-spectral CDL Development/demo	1	2010	4	2011

**DATE:** February 2010

0

3.500 Continuing Continuing

APPROPRIATION/BUDGET ACTIVE 3600: Research, Development, Test BA 7: Operational Systems Develope	nent, Test & Evaluation, Air Force S Development FY 20				<b>IOMENCLA</b> 6F: <i>Airborne</i>	TURE Reconnaiss	sance	PROJECT 675092: JTC/SIL MUSE			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost

3.374

0

3.388

0

3.473

0

3.488

0

0.000

0

#### A. Mission Description and Budget Item Justification

675092: JTC/SIL MUSE

Quantity of RDT&E Articles

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

1.653

0

3.470

0

3.374

0

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.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

**UNCLASSIFIED** 

R-1 Line Item #206 Page 19 of 41

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			<b>DATE</b> : February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0305206F: Airborne Reconnaissance	675092: <i>JT</i>	C/SIL MUSE
BA 7: Operational Systems Development	Systems		

The JTC/SIL is supporting the OSD Task Force Staff and the Standards and Interoperability IPT as well as the joint team working the Ground Segment Interface (GSI). The JTC/SIL is the primary custodian of this interface and in that role performs various supporting task including development of tools for helping the definition and execution of an open architecture for joint service ground control systems, developing and maintaining STANAG 45 joint interoperability tasks to be defined on an annual basis.

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 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: DoD's simulation/training system of choice for ISR systems, sensors, and platforms (to include AFSERS, Common Ground Station Interface and infrastructure support)	1.653	3.470	3.374	0.000	3.374
FY 2009 Accomplishments: In FY 2009: continue AFSERS development and infrastructure support					
FY 2010 Plans: In FY 2010: continue FY 2009 efforts while adding new Common Ground Station Interface effort.					
FY 2011 Base Plans: In FY 2011: continue all FY 2010 efforts.					
FY 2011 OCO Plans: In FY 2011 OCO: N/A					
Accomplishments/Planned Programs Subtotals	1.653	3.470	3.374	0.000	3.374

**Exhibit R-2A**, **RDT&E Project Justification**: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE PROJECT

3600: Research, Development, Test & Evaluation, Air Force PE 0305206F: Airborne Reconnaissance 675092: JTC/SIL MUSE

BA 7: Operational Systems Development Systems

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

			<u>FY 2011</u>	<u>FY 2011</u>	<u>FY 2011</u>					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	<b>Complete</b>	<b>Total Cost</b>
• PE Not Provided (1097): Activity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Not Provided											

## **D. Acquisition Strategy**

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

#### **E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

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**R-1 ITEM NOMENCLATURE** 

PROJECT

3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development

PE 0305206F: Airborne Reconnaissance Systems

675092: JTC/SIL MUSE

**Product Development (\$ in Millions)** 

				FY 2	010	FY 2 Ba	2011 ise	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JTC/SIL	MIPR	Redstone Arsenal Huntsville, AL	1.653	3.470	Jan 2010	3.374	Jan 2011	0.000		3.374	Continuing	Continuing	Continuing
		Subtotal	1.653	3.470		3.374		0.000		3.374			

#### **Remarks**

	Total Prior Years Cost	FY 2	2010	FY 20 Bas		FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.653	3.470		3.374		0.000	3.374			

#### Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Fo	orce					DATE	<b>≣:</b> February 2	010
APPROPRIATION/BUDGET ACTIVITY 600: Research, Development, Test & Evaluation, Air F BA 7: Operational Systems Development	orce	R-1 ITEM NON PE 0305206F: Systems		JECT 92: <i>JTC/SIL</i>	T ITC/SIL MUSE			
7	JTC/S	SIL Sci	hedul	e				
	FY09	FY10	FY11	FY11	FY12	FY13	FY14	FY15
AFSERS Development	-			<b>L</b>	Les:	2	Les	<b>12</b>
Interoperability Support								
JTC/SILManagement Personnel					15			*
								2.0

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

**R-1 ITEM NOMENCLATURE PROJECT** 

3600: Research, Development, Test & Evaluation, Air Force PE 0305206F: Airborne Reconnaissance 675092: *JTC/SIL MUSE* BA 7: Operational Systems Development **Systems** 

## Schedule Details

	St	art	End		
Event	Quarter	Year	Quarter	Year	
AFSERS Development	1	2009	4	2011	
Interoperability Support	1	2010	4	2011	
JTC/SIL Management Personnel	1	2009	4	2011	

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APPROPRIATION/BUDGET ACTIV 3600: Research, Development, Test BA 7: Operational Systems Develop	& Evaluatio	n, Air Force			<b>IOMENCLA</b> 6F: <i>Airborne</i>	TURE Reconnaiss	sance	<b>PROJECT</b> 675291: <i>G</i> 0	orgon Stare			
COST (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To	Total	

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675291: Gorgon Stare	37.500	46.000	31.833	0.000	31.833	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

#### A. Mission Description and Budget Item Justification

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

Funding 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.

Develop a podded wide area airborne sensor suite to provide city-sized and similar broad area surveillance capability for the Combatant Commanders (COCOMs). The Joint Requirements Oversight Council Memorandum (JROCM 106-08, dated 27 May 08) approved the Air Force concept for a Wide Area Airborne Surveillance (WAAS) program plan to address Service requirements for wide area airborne sensors on existing manned and unmanned aircraft system platforms. Funding will be allocated in FY09-FY13 for this Air Force Quick Reaction Capability (QRC) program (Gorgon Stare) to meet Combatant Commander (COCOM) Wide Area Airborne Surveillance (WAAS) urgent operational need and will be managed through the 645th Aeronautical Systems Group (AESG, a.k.a. BIG SAFARI Program Office), 303rd Reconnaissance Systems Wing, Aeronautical Systems Center, Air Force Material Command.

The acquisition strategy for this Air Force QRC includes delivery of capability in two increments, with development of Increment 2 capability expanding the capabilities of Increment 1. FY11 funding is required to complete development of Increment 2 capability.

BPAC 675291, formerly WAAS, was renamed Gorgon Stare in FY11.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

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

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

FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
37.500	46.000	31.833	0.000	31.833

**DATE:** February 2010

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

46.000

31.833

0.000

31.833

37.500

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance

675291: Gorgon Stare

BA 7: Operational Systems Development

Systems

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

Y 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<b>Y</b>	2009	7 2009 FY 2010		

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

		•	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<b>Base</b>	000	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	<b>Complete</b>	Total Cost
• PE 0305206F: Airborne Recon	43.538	19.550	115.695	0.000	115.695	0.000	0.000	0.000	0.000	0.000	0.000
Systems, MN-9136 (APAF)											
• PE 0305206F (1): Airborne	6.000	10.445	7.289	0.000	7.289	6.073	5.007	5.243	5.544	0.000	0.000
Recon Systems, (O&M)											

Accomplishments/Planned Programs Subtotals

## D. Acquisition Strategy

In response to a COCOM urgent operational need, the WAAS QRC program will be executed by the 645 AESG (BIG SAFARI Program Office) using an incremental acquisition strategy to mitigate risk, find affordable end-to-end architecture solutions and field needed capabilities quickly to address Service requirements for Wide Area Airborne Surveillance using existing manned and unmanned aircraft system platforms.

#### **UNCLASSIFIED**

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		<b>DATE:</b> February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0305206F: Airborne Reconnaissance Systems	PROJECT 675291: Gorgon Stare
E. Performance Metrics		
Please refer to the Performance Base Budget Overview Book for Force performance goals and most importantly, how they contribute		I and how those resources are contributing to Air

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

Systems

**PROJECT** 

675291: Gorgon Stare

## **Product Development (\$ in Millions)**

				FY 2	010	FY 2 Ba	2011 se	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sierra Nevada Corporation	SS/Various	SNC Sparks, NV	27.500	35.286	Dec 2009	25.333	Dec 2010	0.000		25.333	Continuing	Continuing	Continuing
General Atomics	SS/Various	GA Grey Butte	0.000	0.000		2.500		0.000		2.500	0.000	2.500	0.000
		Subtotal	27.500	35.286		27.833		0.000		27.833			

#### Remarks

## Support (\$ in Millions)

, · · · · · · · · · · · · · · · · · · ·	,												Į.
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Continuing	TBD/TBD	TBD TBD	2.000	2.714	Dec 2009	0.000		0.000		0.000	Continuing	Continuing	0.000
		Subtotal	2.000	2.714		0.000		0.000		0.000			0.000

#### **Remarks**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**PROJECT** 

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance

675291: Gorgon Stare

BA 7: Operational Systems Development

**Systems** 

## **Management Services (\$ in Millions)**

	Contract Performing			FY 2	010	FY 2 Ba		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
645 AESG, AFRL, Sierra Nevada Corporation	SS/Various	SNC Multiple locations	8.000	8.000	Dec 2009	4.000		0.000		4.000	Continuing	Continuing	0.000
		Subtotal	8.000	8.000		4.000		0.000		4.000			0.000

#### Remarks

	Total Prior Years Cost	FY 2010		2011 ise	FY 2	-	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.500	46.000	31.833		0.000		31.833			

#### **Remarks**

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

**DATE:** February 2010 **PROJECT** 

#### APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

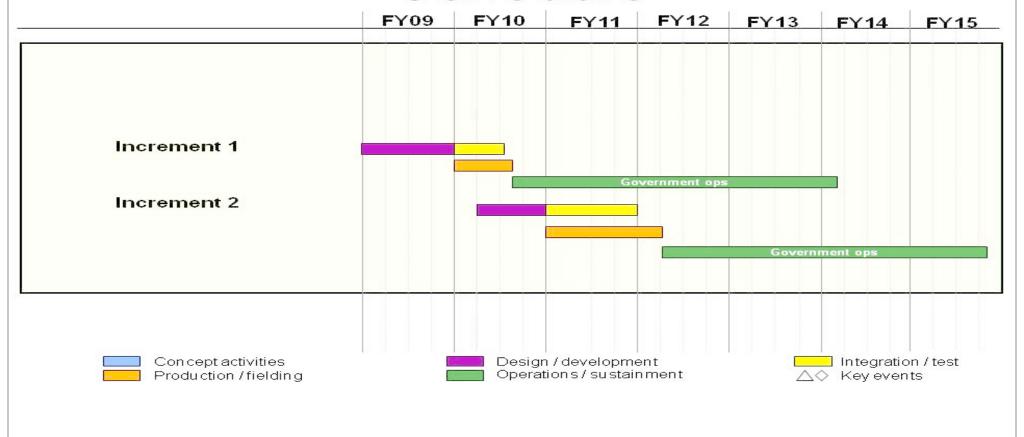
#### **R-1 ITEM NOMENCLATURE**

PE 0305206F: Airborne Reconnaissance

Systems 5 4 1

675291: Gorgon Stare

# WAAS (Gorgon Stare QRC) Schedule



R-1 Line Item #206 Page 30 of 41

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

**PROJECT R-1 ITEM NOMENCLATURE** 

3600: Research, Development, Test & Evaluation, Air Force PE 0305206F: Airborne Reconnaissance 675291: Gorgon Stare BA 7: Operational Systems Development **Systems** 

## Schedule Details

	St	art	Eı	nd
Event	Quarter	Year	Quarter	Year
Airborne System Element (Increment I)	1	2009	4	2011
Airborne System Element (Increment II)	2	2010	4	2011

Exhibit R-2A, RDT&E Project Just	tification: Pl	B 2011 Air F	orce						<b>DATE</b> : Feb	ruary 2010	
APPROPRIATION/BUDGET ACTIV 3600: Research, Development, Test BA 7: Operational Systems Develop	t & Evaluatio	n, Air Force			<b>IOMENCLA</b> 6F: <i>Airborne</i>	TURE Reconnaiss	sance		rborne Cuein tral(ACES H	• .	tion Sys-
COST (\$ in Millions)	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To	Total

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675292: Airborne Cueing & Exploitation Sys- Hyperspectral(ACES HY)	13.800	5.614	3.894	0.000	3.894	2.908	2.893	2.944	2.930	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

## A. Mission Description and Budget Item Justification

The purpose of the Airborne Cueing and Exploitation System Hyperspectral (ACES HY) project is to provide Hyperspectral Imagery (HSI) sensors and capabilities for MQ-1 Predator Unmanned Aircraft System (UAS) and other manned and unmanned aircraft. ACES HY supports the sponsoring combatant command, Central Command (CENTCOM), and other warfighter requirements.

ACES HY will initially procure multiple sensors with a target platform of MQ-1B Predator Block 15 and develop the necessary training, maintenance and fielding plans to support a working architecture.

FY08 funding (\$10.922M) was executed out of PE 0305206F, BPAC 674818.

Activities also include studies and analysis to support both current and future program planning and execution.

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

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Procure three ACES HY sensors with a targeted platform of MQ-1B Predator Block 15 and provide training and support data.	13.800	5.614	3.894	0.000	3.894
FY 2009 Accomplishments: In FY 2009: continue procurement of ACES HY sensors.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE **PROJECT** 675292: Airborne Cueing & Exploitation Sys-PE 0305206F: Airborne Reconnaissance

3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development

Systems Hyperspectral(ACES HY)

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

FY:	2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans:					
In FY 2010: continue procurement of ACES HY sensors.					
FY 2011 Base Plans: In FY 2011: continue procurement of ACES HY sensors.					
FY 2011 OCO Plans:					
In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals 1	13.800	5.614	3.894	0.000	3.894

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

			FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	<b>Complete</b>	Total Cost
<ul> <li>PE Not Provided (1420): NONE</li> </ul>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

## D. Acquisition Strategy

Develop an industry partner to procure an improved, baseline deployable, supportable HSI sensor system. The system should support the joint warfighter and ensure spiral upgrade capability. Utilize the Advanced Technology Support Program process developed by OSD DMEA at McClellan, CA. The contractor should provide a disciplined design process that is the lowest risk solution (cost, schedule, and performance) and ensures logistics support with initial test spares and associated source data to support training and TO development. The MQ-1 developer will be included for interface control and plan for final MQ-1B Predator Block 15 integrations prior to fielding.

#### E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

Systems

**PROJECT** 

675292: Airborne Cueing & Exploitation Sys-

Hyperspectral(ACES HY)

#### **Product Development (\$ in Millions)**

				FY 2	FY 2010		FY 2011 Base		FY 2011 OCO				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Raytheon	C/CPFF	Raytheon McKinney, TX	23.792	5.200	Dec 2009	3.480	Dec 2010	0.000		3.480	Continuing	Continuing	Continuing
		Subtotal	23.792	5.200		3.480		0.000		3.480			

#### **Remarks**

## **Management Services (\$ in Millions)**

				FY 2	010	FY 2 Ba	-	FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management	TBD/TBD	TBD TBD	0.930	0.414		0.414		0.000		0.414	Continuing	Continuing	0.000
		Subtotal	0.930	0.414		0.414		0.000		0.414			0.000

#### **Remarks**

	Total Prior Years Cost	FY 2	2010		2011 se	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.722	5.614		3.894		0.000	3.894			

#### **Remarks**

Total Prior Years Cost may include only FY 2009 data.

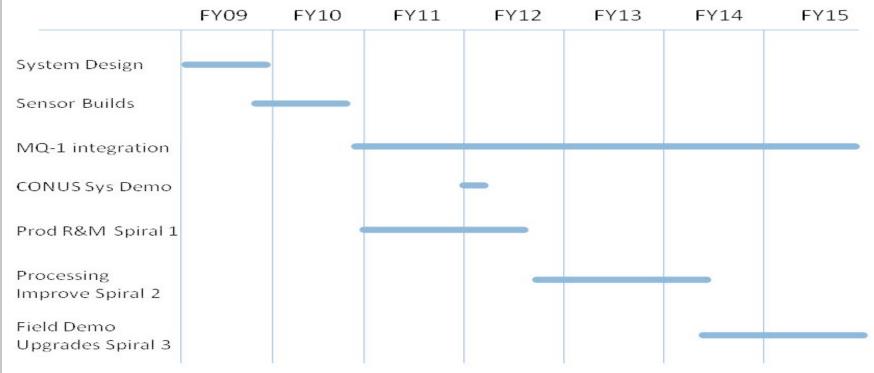
Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

ACES LLV Drogstope School Llo

## ACES HY Program Schedule



Three sensor systems are scheduled to be delivered by Sept 2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force							
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT					
3600: Research, Development, Test & Evaluation, Air Force	PE 0305206F: Airborne Reconnaissance	675292: Aii	rborne Cueing & Exploitation Sys-				
BA 7: Operational Systems Development	Systems	Hyperspect	tral(ACES HY)				

## Schedule Details

	St	art	End		
Event	Quarter	Year	Quarter	Year	
System Design	1	2009	4	2009	
Sensor Builds	4	2009	3	2010	
MQ-1 Integration	1	2011	4	2011	
Prod R&M Spiral 1	1	2011	4	2011	

**DATE:** February 2010

,		-								,	
APPROPRIATION/BUDGET ACTIV 3600: Research, Development, Tes BA 7: Operational Systems Develop		<b>IOMENCLA</b> 6F: <i>Airborne</i>	TURE Reconnaiss	sance		ECT L: Wide Area Airborne Surveillance m of Record (WAAS POR)					
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675382: Wide Area Airborne Surveillance Program of Record (WAAS POR)	0.000	0.000	78.711	0.000	78.711	95.552	47.052	20.275	11.806	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

#### A. Mission Description and Budget Item Justification

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

The Wide Area Airborne Surveillance Program of Record (WAAS POR) will develop capabilities to support Combatant Commands' requirements for end-to-end persistent surveillance. Incremental development will provide wide area airborne sensor suites, and associated ground support elements, to provide city-sized and similar broad area surveillance capabilities on manned and unmanned aircraft. Funding will be allocated in FY10-FY15 to meet OSD Program Decision Memorandum (PDM) II direction (19 Nov 07) and COCOM urgent needs to address service requirements for wide area airborne surveillance capability on manned and unmanned aircraft system platforms. Increments will provide flexibility to support various aircraft size, weight and power configurations; sensor performance attributes; Processing, Exploitation, and Dissemination (PED) architectures, and operational missions. Funding will be managed by the Air Force.

FY10 funding (\$38.705M) was executed out of BPAC 674818.

Activities also include studies, analysis, and technology maturation and demonstration to support both current program planning and execution as well as future program planning.

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

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Technology maturation, demonstration, and platform integration.	0.000	0.000	78.711	0.000	78.711
FY 2009 Accomplishments: In FY 2009: no activity.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

3600: Research, Development, Test & Evaluation, Air Force

PE 0305206F: Airborne Reconnaissance

675382: Wide Area Airborne Surveillance Program of Record (WAAS POR)

BA 7: Operational Systems Development

Systems

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans:					
In FY 2010: initiate effort in BPAC 674818.					
FY 2011 Base Plans:					
In FY 2011: continue effort.					
FY 2011 OCO Plans:					
In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	78.711	0.000	78.711

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

			FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• PE 0305135F: <i>Wide Area</i>	0.000	0.000	0.000	0.000	0.000	15.500	166.500	292.500	461.900	0.000	936.400
Airborne Surveillance, (APAF)											

## **D. Acquisition Strategy**

In response to OSD PDM II direction (19 Nov 07) and COCOM urgent operational needs, WAAS POR will be executed by the Air Force using an incremental acquisition strategy to mitigate risk, find affordable end-to-end architecture solutions and field needed capabilities quickly to satisfy service requirements for wide area airborne sensors on manned and unmanned aircraft system platforms.

#### **E. Performance Metrics**

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305206F: Airborne Reconnaissance

**Systems** 

**PROJECT** 

675382: Wide Area Airborne Surveillance

Program of Record (WAAS POR)

## **Product Development (\$ in Millions)**

				FY 20	010	FY 2 Ba	2011 ise	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Continuing	TBD/TBD	TBD TBD	0.000	0.000		78.711	Oct 2010	0.000		78.711	0.000	78.711	0.000
		Subtotal	0.000	0.000		78.711		0.000		78.711	0.000	78.711	0.000

#### **Remarks**

								1		
	Total Prior Years Cost	FY	2010	FY 2 Ba	-	FY 20		Cost To	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		78.711		0.000	78.711	0.000	78.711	0.000

#### Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force **DATE:** February 2010 APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE PROJECT** 3600: Research, Development, Test & Evaluation, Air Force PE 0305206F: Airborne Reconnaissance 675382: Wide Area Airborne Surveillance BA 7: Operational Systems Development Systems Program of Record (WAAS POR) WAAS (PoR) Schedule FY09 FY10 FY11 FY12 FY13 FY14 FY15 Increment 1 Design / development Integration / test Technology Maturation activities Production / fielding Operations / sustainment △ Key events

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force						
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT				
3600: Research, Development, Test & Evaluation, Air Force	PE 0305206F: Airborne Reconnaissance	675382: W	ide Area Airborne Surveillance			
BA 7: Operational Systems Development	Systems	Program of	Record (WAAS POR)			

## Schedule Details

	St	art	End		
Event	Quarter Year		Quarter	Year	
WAAS POR (Increment I)	1	2010	4	2011	