PE NUMBER: 0305208F
PE TITLE: Distributed Common Ground Systems

Exhibit R-2, RDT&E Budget Item Justification	DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	100.330	105.272	82.765	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4826	Common Imagery Ground / Surface Systems	87.872	93.974	70.513	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5265	Common Imagery Processor (CIP)	12.458	11.298	12.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000

(U) A. Mission Description and Budget Item Justification

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the Services and National Agencies to provide world-wide ground/surface systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from DCGS Imagery architecture for Imagery Intelligence (IMINT), Joint Interoperable Operator Network (JION) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT, and all-source analyses to Combat Air Forces and Combatant Commanders. The Air Force has been charged with developing, upgrading and managing the DCGS Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level.

AF DCGS provides the Air Force ground systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data sharing capabilities between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has five core locations: two CONUS based and three OCONUS. Several other AF DCGS systems are distributed among Air Force operational units at Numbered Air Force and Air National Guard locations, to support Joint Task Force commanders and Air and Space Operations Centers (AOC). The CONUS based systems are capable of reach back operations via data link and satellite relay connectivity to forward operating sensors.

AF DCGS provides critical data and significant support for Time Sensitive Targeting (TST) operations. This support will be enhanced with integration of software tools and data interfaces to the AOC system changes required for new/upgraded sensors and by the transformation of AF DCGS to a net-centric, service oriented architecture construct. By converting from a stovepipe system of systems to a web based integrated net centric Intelligence, Surveillance, and Reconnaissance (ISR) management capability, AF DCGS will provide the Joint Forces Air Component Commander (JFACC) the capability to:
1) Dynamically visualize and command ISR assets and the information in the AOC
2) Quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TST process and reduce timelines.
AF DCGS is also being integrated into the Network Centric Collaborative Targeting (NCCT) network.

Using the DIB, AF DCGS modernization is transforming AF DCGS from a proprietary system to a net centric service oriented architecture. This modernization effort,

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems

implemented in Block 10.2, will deliver a net centric DCGS capability for the Air Force. Block 10.2 will spiral the necessary technologies and tools into its architecture to provide increased capabilities and meet emerging and urgent user operational needs. These spirals will also integrate COTS and GOTS fact-of-life version upgrades to provide current technologies and achieve necessary application and services. The next series of upgades will meet the operational need to integrate new and/or improved sensor capabilities and enhance interoperability by migrating to a service oriented architecture and improving data sharing ability in compliance with DoD direction.

The DIB was developed with the Block 10.2 upgrade and, in accordance with DoD direction, is being managed and upgraded by the Air Force to meet emerging DCGS architecture and standards for Joint and Coalition interoperability.

AF DCGS will also modernize its network management and interface capabilities by upgrading and migrating its network to a standardized interface configuration which is easy to expand and adapt to new technologies while growing capacity requirements. Efforts will also focus on network management systems and the ability to manage critical bandwidths to meet operational surges and distributed operational requirements.

The Common Imagery Processor (CIP) is the common sensor processing element within DCGS IMINT architecture. The function of the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within DCGS. Efforts continue to upgrade the CIP baseline to maintain currency with upgraded/new sensors.

The DCGS-I Testbed is a mobile test environment, which is used by Service and Agency program offices to test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Upgrades to the DCGS-I Testbed will ensure it maintains currency with existing interface standards.

AF DCGS participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

AF DCGS 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 2008	FY 2009	FY 2010
(U)	Previous President's Budget	107.048	107.834	122.796
(U)	Current PBR/President's Budget	100.330	105.272	82.765
(U)	Total Adjustments	-6.718	-2.562	
(U)	Congressional Program Reductions		-2.270	
	Congressional Rescissions		-0.292	
	Congressional Increases			
	Reprogrammings	-6.718		
	SBIR/STTR Transfer			
(U)	Significant Program Changes:			

Exhibit R-2, RDT&E Budget Item Justification	DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems

- Decrease from FY09 to FY 10 is due to AF decision to cancel the next large block upgrade for the program (Block 20) and change to an acquisition strategy of incremental modifications during sustainment.

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems	PROJECT NUMBER AND TITLE: 4826 Common Imagery Ground / Surface Systems	

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
4826	Common Imagery Ground / Surface Systems	87.872	93.974	70.513	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the Services and National Agencies to provide world-wide ground/surface systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from DCGS Imagery architecture for Imagery Intelligence (IMINT), Joint Interoperable Operator Network (JION) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT, and all-source analyses to Combat Air Forces and Combatant Commanders. The Air Force has been charged with developing, upgrading and managing the DCGS Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level.

DCGS provides the Air Force ground systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data sharing capabilities between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has five core locations: two CONUS based and three OCONUS. Several other AF DCGS systems are distributed among Air Force operational units at Numbered Air Force and Air National Guard locations, to support Joint Task Force commanders and Air Operations Centers (AOC). The CONUS based systems are capable of reach back operations via data link relay and satellite relay connectivity to forward operating sensors.

AF DCGS provides critical data and significant support for Time Sensitive Targeting (TST) operations. This support will be enhanced with the integration of software tools and data interfaces to the AOC system changes required for new/upgraded sensors and by the transformation of AF DCGS to a net centric, service oriented architecture construct. By converting from a stovepipe system of systems to a web based integrated net centric Intelligence, Surveillance, and Reconnaissance (ISR) management capability. AF DCGS will provide the Joint Forces Air Component Commander (JFACC) the capability to:
1) Dynamically visualize and command ISR assets and the information in the AOC
2) Quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TST process and reduce timelines.
AF DCGS is also being integrated into the Network Centric Collaborative Targeting (NCCT) network.

Using the DIB, AF DCGS modernization will transform AF DCGS from its existing proprietary system to a net centric service oriented architecture. This modernization effort, implemented in Block 10.2, will deliver a net centric DCGS capability for the Air Force. Block 10.2 will spiral the necessary technologies and

Exhibit R-2a, RDT&E Project Justification		DATE May 2009
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305208F Distributed Common Ground Systems**	PROJECT NUMBER AND TITLE **4826 Common Imagery Ground / Surface Systems**

tools into its architecture to provide increased capabilities and meet emerging and urgent user operational needs. These spirals will also integrate COTS and GOTS fact-of-life version upgrades to provide current technologies and achieve necessary application and services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities and enhance interoperability by migrating to a service oriented architecture and improving data sharing ability in compliance with DoD direction.

The DIB was developed with the Block 10.2 upgrade and, in accordance with DoD direction, is being managed and upgraded by the Air Force to meet emerging DCGS net centric architecture and standards for Joint and Coalition operability.

AF DCGS will also modernize its network management and interface capabilities by upgrading and migrating its network to a standardized interface configuration which is easy to expand and adapt to new technologies while growing capacity requirements. Efforts will also focus on network management systems and the ability to manage critical bandwidths to meet operational surges and distributed ops requirements.

The DCGS-I Testbed is a mobile test environment, which is used by Service and Agency program offices to test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Upgrades to the DCGS-I Testbed will ensure it maintains currency with existing interface standards.

AF DCGS participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

AF DCGS 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 2008	FY 2009	FY 2010
(U)	Continue Block 10.2 upgrades to provide required tools for AF DCGS support to the JTF Commander and below.	31.254	24.471	
(U)	Continue development efforts to meet operational need to integrate new and improved sensors, increase capacity and data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct.	22.760	51.222	50.569
(U)	Continue upgrade of AF DCGS network and communications network.	8.858	2.000	2.400
(U)	Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS IPT effort for USD(I)	2.115	2.831	2.888
(U)	Continue DCGS-I Testbed development and upgrades.	3.841	3.550	3.956
(U)	Upgrade, improve and manage the DIB.	15.559	7.200	7.800
(U)	Continue commercial imagery integration.	2.690	2.700	2.900
(U)	Provide Advanced Architecture Design support US Army Net Centric Warfare .	0.795		
(U)	Total Cost	87.872	93.974	70.513

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems	PROJECT NUMBER AND TITLE: 4826 Common Imagery Ground / Surface Systems

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

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) OPAF (PE 0305208F) 3080 Production Costs (FY10 POM/BES)	245.121	250.778	293.640							789.539

(U) D. Acquisition Strategy

The Air Force has changed the AF DCGS acquisition strategy from a single block upgrade to incremental modifications during sustainment integrating mature advanced technologies and multi-intelligence exploitation tools while meeting emerging operational requirements and integrating new/upgraded sensors.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems

PROJECT NUMBER AND TITLE: 4826 Common Imagery Ground / Surface Systems

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
Block 10.2 Spiral Upgrades	C/Multiple	Raytheon, Lockheed Martin, L3, Redstone	289.094	31.254	Jan-08	24.471	Feb-09				344.819	336.473
Modernization/modification efforts and integration of new sensors and operational capabilities	C/Multiple	Multiple		22.760	Dec-08	51.222		50.569		Continuing	TBD	TBD
Network Communications Upgrade	C/Multiple	Global Technologies, Raytheon, Lockheed Martin		8.858	May-08	2.000	May-09	2.400	May-09	Continuing	TBD	TBD
DCGS IPT for USD(I)	C/Multiple	Science Applications Int'l		2.115	Mar-08	2.831	Mar-09	2.888	Mar-10	Continuing	TBD	TBD
Testbed Modernization and Licenses	C/Multiple	Northrup Grumman, Raytheon, L3, General Dynamics		3.841	Mar-08	3.550	Mar-09	3.956	Mar-10	Continuing	TBD	TBD
DIB Management, Migration & Interoperability	C/Multiple	Raytheon, Integrity Applications		15.559	Apr-08	7.200	Feb-09	7.800	Feb-10	Continuing	TBD	TBD
Commercial Satellite Imagery	C/Multiple	AR Gov't Systems Group		2.690	Mar-08	2.700	Jan-09	2.900	Jan-10		8.290	
Common Imagery Processor (CIP)	C/Multiple	Northrup Grumman		0.000	Nov-08						0.000	
Advanced Architecture Design (Congressional Add)	C/Multiple	US Army		0.795	Jul-08						0.795	
											0.000	
Subtotal Product Development			289.094	87.872		93.974		70.513		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			289.094	87.872		93.974		70.513		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems	PROJECT NUMBER AND TITLE: 4826 Common Imagery Ground / Surface Systems

AF DCGS Schedule

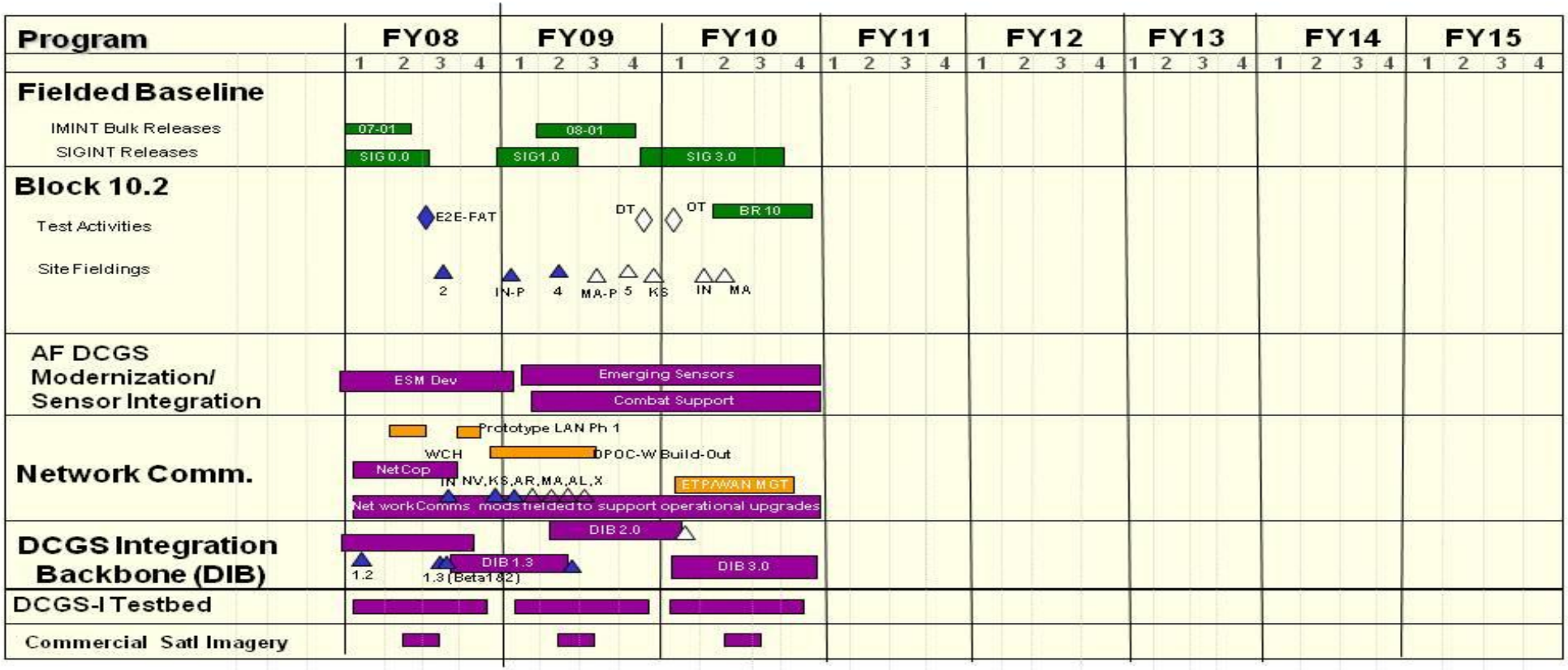

Exhibit R-4a, RDT&E Schedule Detail		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems	PROJECT NUMBER AND TITLE: 4826 Common Imagery Ground / Surface Systems

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) Block 10.2 End-to-End Factory Acceptance Test	3Q		
(U) Block 10.2 Developmental and Operational Testing		4Q	1Q
(U) Block 10.2 Site Fielding	3Q	1-4Q	2Q
(U) Modernization/sensor integration	1-4Q	1-4Q	1-4Q
(U) Network Communications upgrades	1-4Q	1-4Q	1-4Q
(U) DIB Version Release (1.3)		2Q	
(U) DIB Version Release (2.0)			1Q

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems

PROJECT NUMBER AND TITLE: 5265 Common Imagery Processor (CIP)

Cost ($ in Millions)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5265	Common Imagery Processor (CIP)	12.458	11.298	12.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

FY07 and prior year funding was under Project 4826 of PE 0305208F

(U) A. Mission Description and Budget Item Justification

The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within DCGS-Imagery architecture. The function of the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within DCGS-I. Efforts are underway to augment the CIP baseline to process data from upgraded/new sensors.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U) Continue evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continue investigation of and implementation of advanced processing tools. (Baseline capability includes Global Hawk, F/A-18, and U-2 sensors.)	12.458	11.298	12.252
(U) Total Cost	12.458	11.298	12.252

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

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) CIP funding under Project 4826	0.500									

(U) D. Acquisition Strategy

The Air Force uses an evolutionary acquisition approach with blocks (increments) and spirals to develop, field, and upgrade the AF DCGS weapon system and structure contracts for the improved capabilities through full and open competition to the maximum extent possible.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems

PROJECT NUMBER AND TITLE: 5265 Common Imagery Processor (CIP)

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
CIP Software Development	C/CPFF	Northrop Grumman, Baltimore MD		12.058	Jan-08	10.798	Dec-09	11.752	Dec-10	Continuing	TBD	TBD
Subtotal Product Development			0.000	12.058		10.798		11.752		Continuing	TBD	TBD
Remarks:												
(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	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Management												
303 Aeronautical Systems Wing (AESW)	Various	Wright-Patterson AFB, OH		0.400	Jan-08	0.500	Dec-09	0.500		Continuing	TBD	TBD
Subtotal Management			0.000	0.400		0.500		0.500		Continuing	TBD	TBD
Remarks:												
(U)												
											0.000	
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	12.458		11.298		12.252		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems	PROJECT NUMBER AND TITLE 5265 Common Imagery Processor (CIP)

CIP Schedule

Rapidly delivering war-winning capability

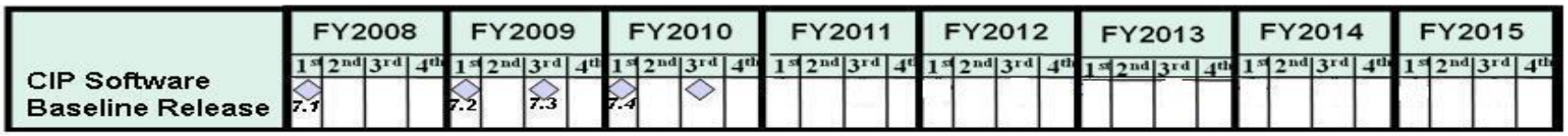

Exhibit R-4a, RDT&E Schedule Detail		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305208F Distributed Common Ground Systems	PROJECT NUMBER AND TITLE: 5265 Common Imagery Processor (CIP)

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) CIP 7.1 Software Release	1Q		
(U) CIP 7.2 Software Release		1Q	
(U) CIP 7.3 Software Release		3Q	
(U) CIP 7.4 Software Release			1Q
(U) CIP Software Release			3Q

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