PE NUMBER: 0603854F
PE TITLE: Wideband MILSATCOM (Space)

Exhibit R-2, RDT&E Budget Item Justification

DATE: May 2009

BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603854F Wideband MILSATCOM (Space)

	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	20.992	52.080	70.956	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4811	Wideband Gapfiller	0.000	39.737	52.635	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4870	Command & Control System Consolidated (CCSC)	20.992	12.343	18.321	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Wideband Global SATCOM (WGS) System, previously known as Wideband Gapfiller Satellites, provides the DoD with high data rate military satellite communication (MILSATCOM) services in accordance with the Joint Space Management Board-approved MILSATCOM architecture (Aug 96), the Joint Requirements Oversight Council (JROC)-approved MILSATCOM Capstone Requirements Document (Oct 97), and the JROC-approved WGS Operational Requirements Document (May 00). This program was originally conceived to augment the near term 'bandwidth gap' in warfighter communications needs. Dual-frequency WGS satellites augment, then replace the DoD's Defense Satellite Communications Systems (DSCS) X-band service and augment one-way Global Broadcast Service Ka-band capabilities. In addition, WGS provides a new high capacity two-way Ka-band service.

The first and second WGS satellites were successfuly launched on 10 Oct 07 and 3 Apr 09, respectively. The third satellite launch is scheduled for Aug 09.

Satellites 4 and 5 will have slight modifications to better support the Airborne Intelligence, Surveillance and Reconnaissance mission. Launches for satellites 4-5 are scheduled for Oct 11 and Oct 12, respectively.

A United States-Australia WGS partnership was codified 14 Nov 07. Australia will provide funds needed to buy WGS-6 in exchange for access to constellation-wide resources. Launch for satellite 6 is scheduled for Mar 13.

The MILSATCOM Command and Control System-Consolidated (CCS-C) system provides integrated launch and on-orbit command and control (C2) functionality for MILSATCOM satellites as the capability provided by the Air Force Satellite Control Network (PE0305110F) for MILSATCOM satellites has phased out according to plan. CCS-C uses modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems to include Milstar, DSCS, WGS, and the Advanced Extremely High Frequency (AEHF) system, at reduced operating and maintenance costs.

(U) Funding is in Budget Activity 4, Advanced Component Development and Prototypes, because it supports component development and prototyping for Wideband MILSATCOM.

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)

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

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	19.091	12.422	13.201
(U)	Current PBR/President's Budget	20.992	52.080	70.956
(U)	Total Adjustments	1.901	39.658	
(U)	Congressional Program Reductions		-0.200	
	Congressional Rescissions		-0.142	
	Congressional Increases		40.000	
	Reprogrammings	1.901		
	SBIR/STTR Transfer			

(U) Significant Program Changes:

Congress added FY09 funds for WGS program sustainment and evolution. Not reflected above, $30M of the $40M FY09 congressional add has been reprogrammed as Missile Procurement, Air Force (MPAF) to address WGS sustainment. FY10 funds added for WGS Block II Extension Non Recurring Engineering and increased CCS-C development costs due to delay in AEHF launches.

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603854F Wideband MILSATCOM (Space)

PROJECT NUMBER AND TITLE: 4811 Wideband Gapfiller

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
4811	Wideband Gapfiller	0.000	39.737	52.635	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 Wideband Global SATCOM (WGS) System, previously known as Wideband Gapfiller Satellites, will provide the DoD with high data rate military satellite communication (MILSATCOM) services in accordance with the Joint Space Management Board-approved MILSATCOM architecture (Aug 96), the Joint Requirements Oversight Council (JROC)-approved MILSATCOM Capstone Requirements Document (Oct 97), and the JROC-approved WGS Operational Requirements Document (May 00). This program was originally conceived to augment the near term 'bandwidth gap' in warfighter communications needs. These dual-frequency WGS satellites will augment the DoD's Defense Satellite Communications Systems X-band service and one-way Global Broadcast Service Ka-band capabilities. In addition, WGS will provide a new high capacity two-way Ka-band service.

The first and second WGS satellite were successfuly launched on 10 Oct 07 and 3 Apr 09, respectively. The third satellite launch is scheduled for Aug 09.

Satellites 4 and 5 will have slight modifications to better support the Airborne Intelligence, Surveillance and Reconnaissance mission. Launches for satellites 4-5 are scheduled for FY12: Oct 11 and Oct 12.

A United States-Australia WGS partnership was codified 14 Nov 07. Australia will provide funds needed to buy WGS-6 in exchange for access to constellation-wide resources. Launch for satellite 6 is scheduled for Mar 13.

Congress appropriated $40M FY09 funds for WGS sustainment and evolution. In order to address sustainment, $30M of the congressional add has been internally reprogrammed to Missile Procurement, Air Force funds. The remainder will fund evolutionary study efforts to include lasercom and other potential study efforts.

FY10 funds, but is not limited to, Block II Extension non-recurring engineering.

	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	Perform efforts such as payload/evolutionary studies, parts obsolescence and other potentially related studies	0.000	39.737	0.000
(U)	Perform, but not limited to, non-recurring engineering for integration, tests, and support development of WGS control system	0.000	0.000	47.372
(U)	Provide Program Office support and other related activities	0.000	0.000	5.263
(U)	Total Cost	0.000	39.737	52.635

Exhibit R-2a, RDT&E Project Justification		DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT NUMBER AND TITLE 4811 Wideband Gapfiller

(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) MPAF, PE 0303600F, WGS, P-19,20	312.335	21.628	264.051						Continuing	TBD
(U) OPAF, PE 0303600F, WGS PIPs	0.000	0.000	1.677						Continuing	TBD
(U) OPAF, PE 0303600F, CCS-C	8.335	0.000	0.000						Continuing	TBD

(U) D. Acquisition Strategy

The WGS program made considerable use of commercial practices and technology in its FAR Part 12, Firm Fixed Price (FFP) acquisition for satellites 1-3. The WGS program received MS II/III approval in November 2000 and awarded a FFP contract in January 2001 (three satellites and options for an additional three). Options for satellites 4-6 were not exercised prior to the 31 December 2003 expiration date.

Since WGS-type capabilities were no longer being offered commercially, it was no longer appropriate to use a Firm Fixed Price contract for satellites 4-6. A Fixed Price Incentive Fee contract, which balances uncertainty of parts obsolescence/production gap with experience gained from WGS 1-3 production, was approved. The Not-to-Exceed letter contract was awarded for satellites 4 and 5 (with unfunded priced option for 6th satellite) in 2nd Qtr FY06. The contract definitized on 17 October 2006. All satellites are purchased with procurement funds, and the Non-Recurring Engineering (NRE) is funded with RDT&E.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603854F Wideband MILSATCOM (Space)

PROJECT NUMBER AND TITLE: 4811 Wideband Gapfiller

(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												
Parts Obsolescence Redesign	FPIF	Boeing, El Segundo CA	91.737								91.737	
WGS Satellite EMD (satellites 1-3)	FFP	Boeing, El Segundo CA	143.013								143.013	
UAV Bypass NRE	FFP	Boeing, El Segundo CA	14.000								14.000	
Payload/Production Studies	Various	Various	30.937			39.737	Jun-09				70.674	
Design/Development NRE	FPIF	TBD						47.372	Mar-10	Continuing	TBD	
Subtotal Product Development			279.687	0.000		39.737		47.372		Continuing	TBD	0.000
Remarks:												
(U) Support												
Joint Terminals Engineering Office	PR	McLean, VA	6.618								6.618	
Pre-EMD	Form 277	Various	5.579								5.579	
Program Support	Various	Various	10.392					5.263	Feb-10	Continuing	TBD	
Subtotal Support			22.589	0.000		0.000		5.263		Continuing	TBD	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												
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			302.276	0.000		39.737		52.635		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT NUMBER AND TITLE 4811 Wideband Gapfiller

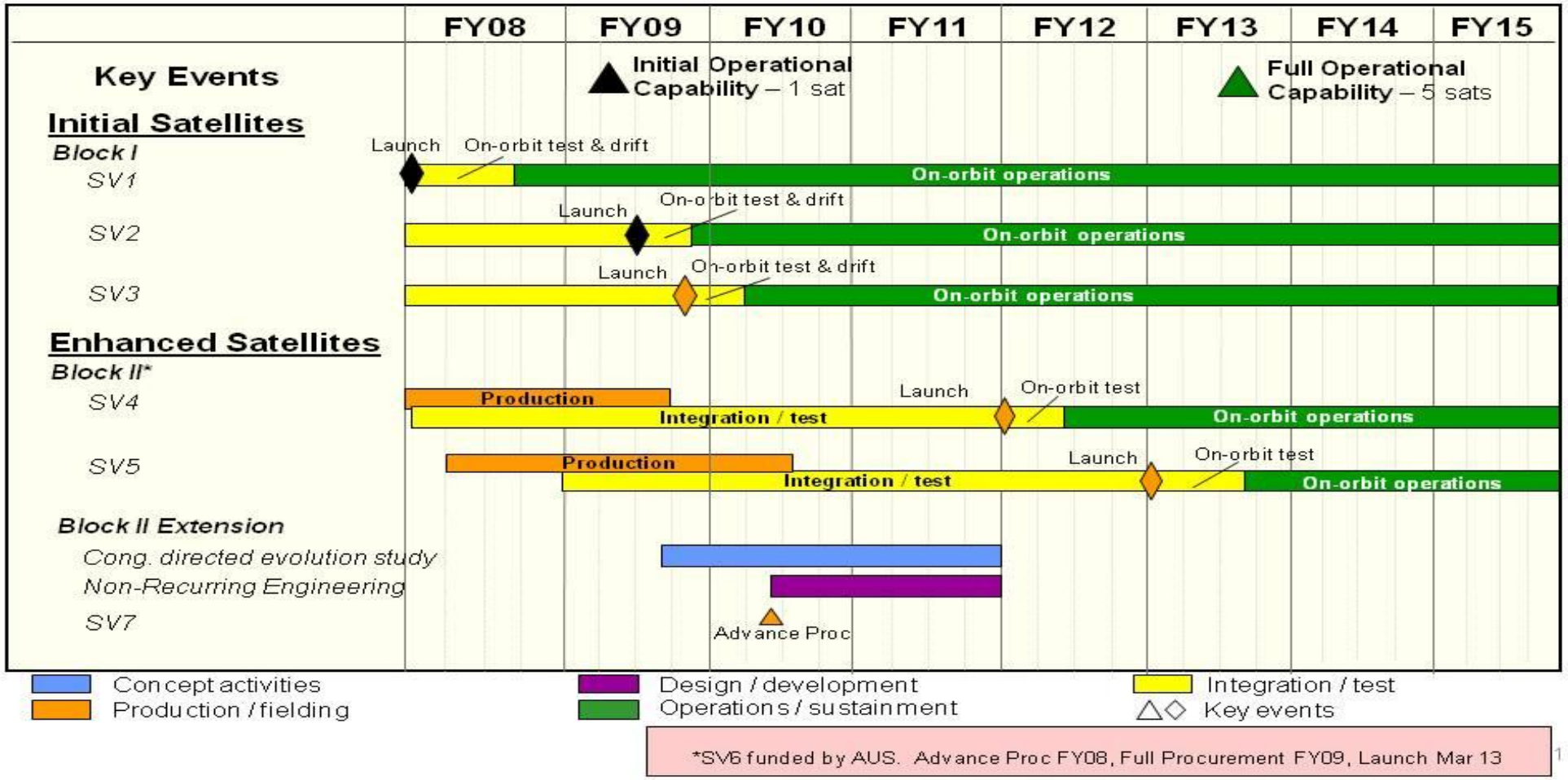

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY **04 Advanced Component Development and Prototypes (ACD&P)**	PE NUMBER AND TITLE **0603854F Wideband MILSATCOM (Space)**	PROJECT NUMBER AND TITLE **4811 Wideband Gapfiller**

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) Evolutionary Study Efforts		3Q	
(U) Initiate Block II Extension non-recurring engineering			2Q

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603854F Wideband MILSATCOM (Space)

PROJECT NUMBER AND TITLE: 4870 Command & Control System Consolidated (CCSC)

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
4870	Command & Control System Consolidated (CCSC)	20.992	12.343	18.321	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 Military Satellite Communications (MILSATCOM) Command and Control System-Consolidated (CCS-C) system provides integrated launch and on-orbit command and control (C2) functionality, and backup operations at Vandenberg AFB, for MILSATCOM satellites as the current capability provided by the Air Force Satellite Control Network (PE 0305110F) has phased out according to plan. CCS-C uses modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems including Milstar, Defense Satellite Communications System (DSCS), Wideband Global SATCOM (WGS), and the Advanced Extremely High Frequency (AEHF) system, at reduced operating and maintenance costs. CCS-C will also support the implementation of new C2 training systems.

FY10 funds provide required command and control capability to launch AEHF satellites.

Funding is in Budget Activity 4, ACD&P, to support software development and activation of the CCS-C installation and test facility.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U) Continue development of command and control functionality for WGS and AEHF satellites. Completed command and control functionality Milstar (1QFY06)	18.524	9.500	15.224
(U) Continue Program Office and other related support activities, to include Systems Engineering and Integration	2.468	2.843	3.097
(U) Total Cost	20.992	12.343	18.321

(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) Other APPN										
(U) OPAF, PE 0303600F, CCS-C	8.335	0.000	0.000						Continuing	TBD

(U) D. Acquisition Strategy

Competitive contracts with cost plus award fee options, were awarded in February 2001 to two teams to demonstrate capabilities for the concept demonstration phase. A downselect to a single team was awarded in March 2002 to develop the system for the development phase.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE: 0603854F Wideband MILSATCOM (Space)

PROJECT NUMBER AND TITLE: 4870 Command & Control System Consolidated (CCSC)

(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												
Demonstration Contractors	FFP		6.800							0.000	6.800	
Development Contractor: Integral Systems, Inc.	CPAF	Lanham, MD	100.482	18.524	Oct-07	9.500	Oct-08	15.224	Oct-09	Continuing	TBD	
Subtotal Product Development			107.282	18.524		9.500		15.224		Continuing	TBD	0.000
Remarks:												
(U) Support												
CCSC Program Support Cost			20.528	2.468	Oct-07	2.843	Oct-08	3.097	Oct-09	Continuing	TBD	
Subtotal Support			20.528	2.468		2.843		3.097		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
None											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Management												
None											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			127.810	20.992		12.343		18.321		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603854F Wideband MILSATCOM (Space)	PROJECT NUMBER AND TITLE 4870 Command & Control System Consolidated (CCSC)

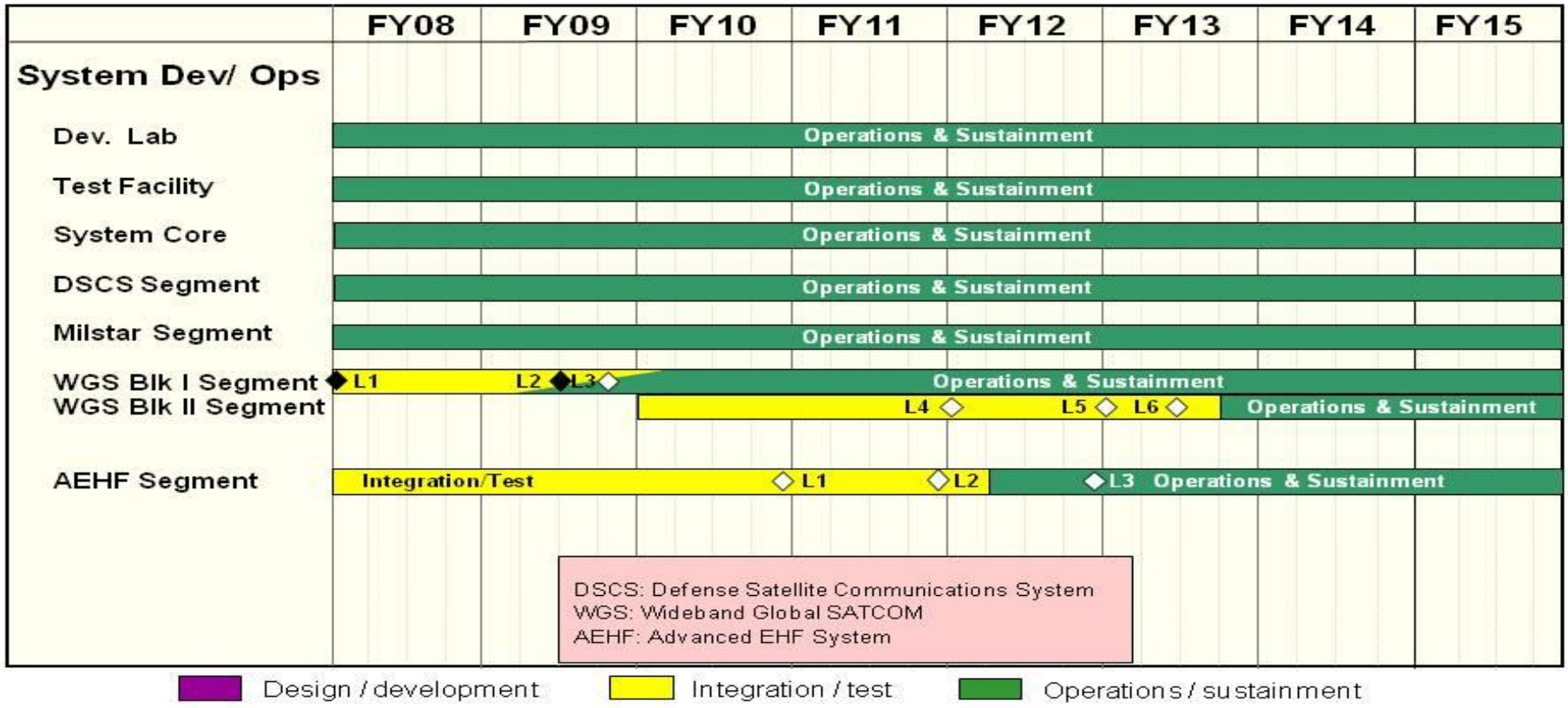

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY **04 Advanced Component Development and Prototypes (ACD&P)**	PE NUMBER AND TITLE **0603854F Wideband MILSATCOM (Space)**	PROJECT NUMBER AND TITLE **4870 Command & Control System Consolidated (CCSC)**

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) WGS 1 launch	1Q		
(U) Continue WGS Integration & Test	1-4Q		
(U) Continue AEHF Integration & Test	1-4Q	1-4Q	1-4Q
(U) WGS 2 launch		2Q	
(U) WGS 3 launch		4Q	
(U) Transition WGS into Sustainment		4Q	
(U) AEHF 1 launch			4Q