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

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2004

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

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

	Cost ($ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	13.801	36.271	73.499	15.950	9.290	5.701	6.357	Continuing	TBD
4811	Wideband Gapfiller	0.000	0.000	53.202	7.681	2.291	0.000	0.000	0.000	226.614
4870	Command & Control System Consolidated (CCSC)	13.801	36.271	20.297	8.269	6.999	5.701	6.357	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

Provide the DoD with high data rate (Wideband) MILSATCOM services in accordance with the Joint Requirements Oversight Council (JROC), Joint Space Management Board approved MILSATCOM Architecture (Aug 96), the MILSATCOM Capstone Requirements Document (CRD) approved by the JROC in Oct 97, and JROC approved WGS Operational Requirements Document (May 00).

The Wideband Gapfiller System (WGS) will augment the DoD's Defense Satellite Communications System (DSCS) X-band and Global Broadcast Service (GBS) Ka-band capabilities. In addition, WGS will provide a new two-way Ka-band service. Due to manufacturing problems with the phased array components used on WGS, the first WGS launch is currently scheduled for Dec 05, and satellites 2 and 3 are scheduled for NLT Jan 07. OSD directed the addition of two more WGS's as part of the transformational communications architecture. Funding was added in FY2005 and beyond for non-recurring engineering on satellites 4 and 5 to support increased bandwidth requirements for the Airborne Intelligence, Surveillance and Reconnaissance mission. Launches for satellites 4-5 are scheduled for FY09-10.

The MILSATCOM Command and Control System-Consolidated (CCS-C) system is being acquired to provide integrated launch and on-orbit command and control (C2) functionality for MILSATCOM satellites as the current capability provided by the Air Force Satellite Control Network (PE0305110F) phases out according to plan. CCS-C will use modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems to include MILSTAR, Defense Satellite Communications Systems (DSCS), WGS, Advanced Extremely High Frequency (AEHF), Transformational Satellite Communications (TSAT), and Advanced Polar System (APS), at reduced operating and maintenance costs.

(U) Funding is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) to support:
WGS: Leveraging commercial technology and practices by modifying commercial satellites to better support unique military requirements
CCS-C: Development phase

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
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 2003	FY 2004	FY 2005
(U)	Previous President's Budget	13.801	36.686	73.691
(U)	Current PBR/President's Budget	13.801	36.271	73.499
(U)	Total Adjustments	0.000	-0.415	
(U)	Congressional Program Reductions		-0.415	
	Congressional Rescissions			
	Congressional Increases			
	Reprogrammings			
	SBIR/STTR Transfer			

(U) Significant Program Changes:

None

Exhibit R-2a, RDT&E Project Justification

DATE: February 2004

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 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
4811	Wideband Gapfiller	0.000	0.000	53.202	7.681	2.291	0.000	0.000	0.000	226.614
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Wideband Gapfiller System (WGS) will provide the DoD with high data rate military satellite communications (MILSATCOM) services in accordance with the Joint Space Management Board approved MILSATCOM Architecture dated Aug 96, the MILSATCOM Capstone Requirements Document approved by the Joint Requirements Oversight Council (JROC) in Oct 97, and JROC approved WGS Operational Requirements Document (May 00). This program was conceived to augment the near term 'bandwidth gap' in Warfighter communications needs. The first WGS launch is scheduled for Dec 05, and satellites 2 and 3 are scheduled for NLT Jan 07. These dual frequency WGS satellites will augment the DoD's two-way Defense Satellite Communications System 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.

Funding was added in FY2005 and beyond for non-recurring engineering on satellites 4 and 5 to support increased bandwidth requirements for the Airborne Intelligence, Surveillance and Reconnaissance mission. Launches for satellites 4-5 are scheduled for FY09-10.

Funding in Budget Activity 4, ACD&P to support non-recurring engineering that maximizes commercial technology and practices to modify commercial satellites to better support military unique requirements.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U) Accomplishments/Planned Program			
(U) Support Unmanned Aerial Vehicle (UAV) Bypass (Airborne Intelligence, Surveillance and Reconnaissance support) non-recurring engineering for satellites 4 and 5			47.497
(U) Perform payload/production studies related to parts obsolescence and non-recurring engineering for satellites 4 and 5			5.011
(U) Begin Program Office Support			0.694
(U) Total Cost	0.000	0.000	53.202

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

		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
(U)	MPAF, PE 0303600F, WGS, P-29	186.694	21.848	40.307	61.983	270.676	175.338	47.747	117.473	1,307.990
(U)	OPAF, PE 0303600F, WGS PIPs	15.142	11.776	0.000	0.000	0.000			0.000	26.918
(U)	OPAF, PE 0303600F, CCS-C	5.320	8.049	2.124	0.288	0.000			0.000	15.781

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
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) D. Acquisition Strategy

The WGS program will make maximum use of commercial practices and technology in its FAR Part 12, Firm Fixed Price (FFP) acquisition. The WGS received MS II/III approval in Nov 00 and awarded a FFP contract in Jan 01. All five satellites will be purchased with Procurement funds, and the Non-Recurring Engineering (NRE) is funded with RDT&E.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: February 2004

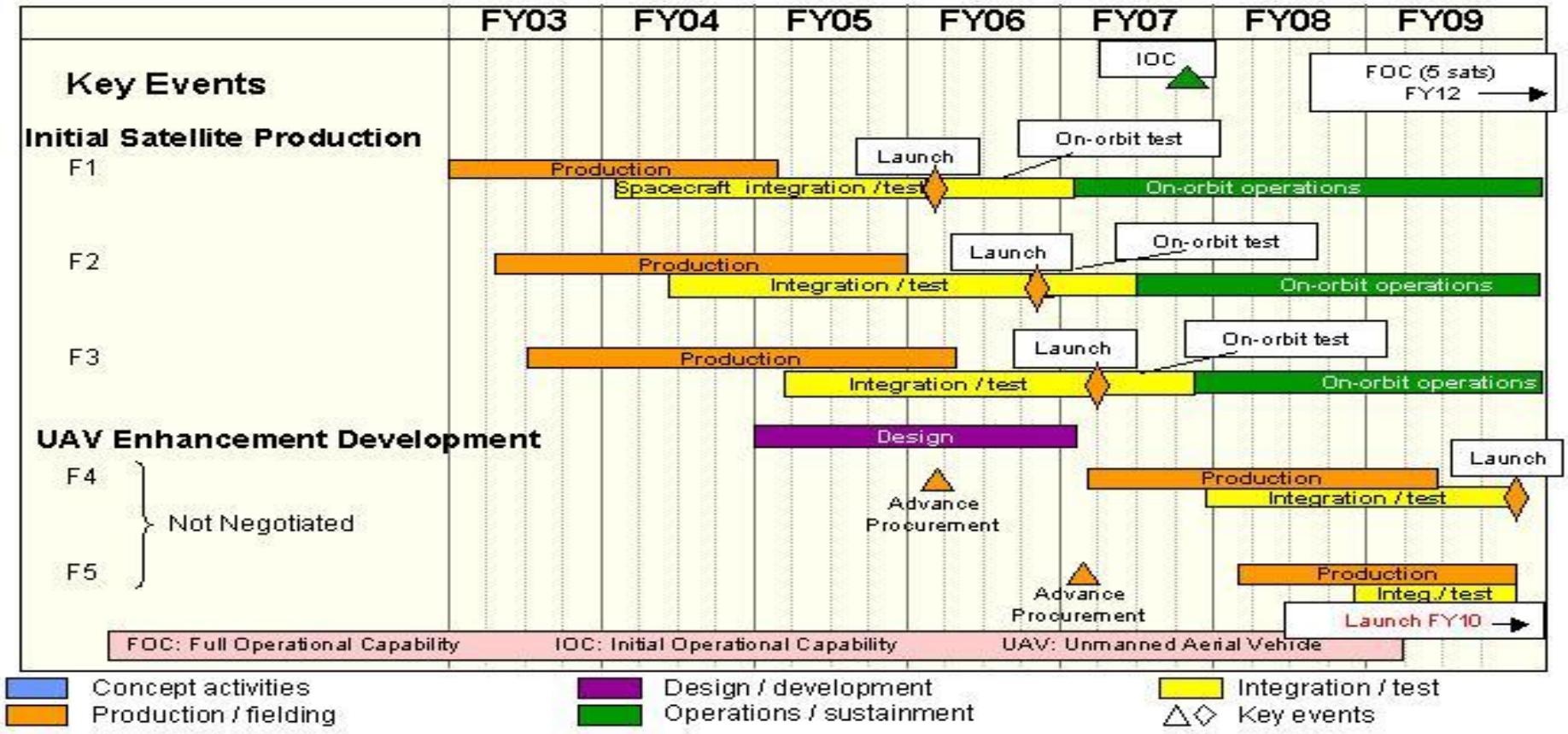
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)

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 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
WGS Satellite EMD	FFP		143.008								143.008	
UAV Bypass NRE	FFP							47.497		7.972	55.469	
Payload/Production Studies	Various							5.011			5.011	
Subtotal Product Development			143.008	0.000		0.000		52.508		7.972	203.488	0.000
Remarks:												
(U) Support												
JTEO	PR		6.618							0.000	6.618	
Pre-EMD	Form 277		5.579							0.000	5.579	
International Studies	SS/CFFF/AF									0.000	0.000	
Program Support	Various		8.235					0.694		2.000	10.929	
Subtotal Support			20.432	0.000		0.000		0.694		2.000	23.126	0.000
Remarks:												
(U) Test & Evaluation												
AFOTEC, DT&E	TBD										0.000	
TBD											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			163.440	0.000		0.000		53.202		9.972	226.614	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE February 2004
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



Current buy is five satellites – contract has options for up to six

Exhibit R-4a, RDT&E Schedule Detail		DATE: February 2004
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 2003	FY 2004	FY 2005
(U) Initiate Unmanned Aerial Vehicle (UAV) Bypass (AISR support) for satellites 4 and 5			1Q

Exhibit R-2a, RDT&E Project Justification

DATE: February 2004

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 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
4870	Command & Control System Consolidated (CCSC)	13.801	36.271	20.297	8.269	6.999	5.701	6.357	Continuing	TBD
	Quantity of RDT&E Articles	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 is being acquired to provide integrated launch and on-orbit command and control (C2) functionality for MILSATCOM satellites as the current capability provided by the Air Force Satellite Control Network (PE 0305110F) phases out according to plan. CCS-C will use modified commercial off the shelf hardware/software to control all emerging and legacy MILSATCOM systems including MILSTAR, Defense Satellite Communications System (DSCS), Wideband Gapfiller System (WGS), Advanced Extremely High Frequency (AEHF), Transformational SATCOM (TSAT), and Advanced Polar System (APS), at reduced operating and maintenance costs.

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 2003	FY 2004	FY 2005
(U) Accomplishments/Planned Program			
(U) Continued development of command and control functionality for DSCS, MILSTAR, WGS, and AEHF satellites.	10.994		
(U) Continued development of command and control functionality for WGS, MILSTAR, and AEHF satellites. Completed command and control functionality for DSCS.		31.396	
(U) Continue development of command and control functionality for WGS and AEHF satellites. Complete command and control functionality MILSTAR.			17.224
(U) Continue Program Office and other related support activities	2.807	4.875	3.073
(U) Total Cost	13.801	36.271	20.297

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

		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
(U)	Other APPN									
(U)	OPAF, PE 030600F, CCS-C BA-11 Line-74	5.320	8.049	2.124	0.288	0.000			0.000	15.781

(U) D. Acquisition Strategy

Competitive contracts with cost plus award fee options, were awarded in Feb 01 to two teams to demonstrate capabilities - the concept demonstration phase. A downselect to a single team was awarded in Mar 02 to develop the system for the development phase.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: February 2004

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 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
Demonstration Contractors	FFP		6.835							0.000	6.835	
Development Contractor	CPAF		12.876	10.994	Oct-02	31.396	Oct-03	17.224	Oct-04	Continuing	TBD	
Subtotal Product Development			19.711	10.994		31.396		17.224		Continuing	TBD	0.000
Remarks:												
(U) Support												
CCSC Program Support Cost			6.379	2.807		4.875		3.073		Continuing	TBD	
Subtotal Support			6.379	2.807		4.875		3.073		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			26.090	13.801		36.271		20.297		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE February 2004
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)

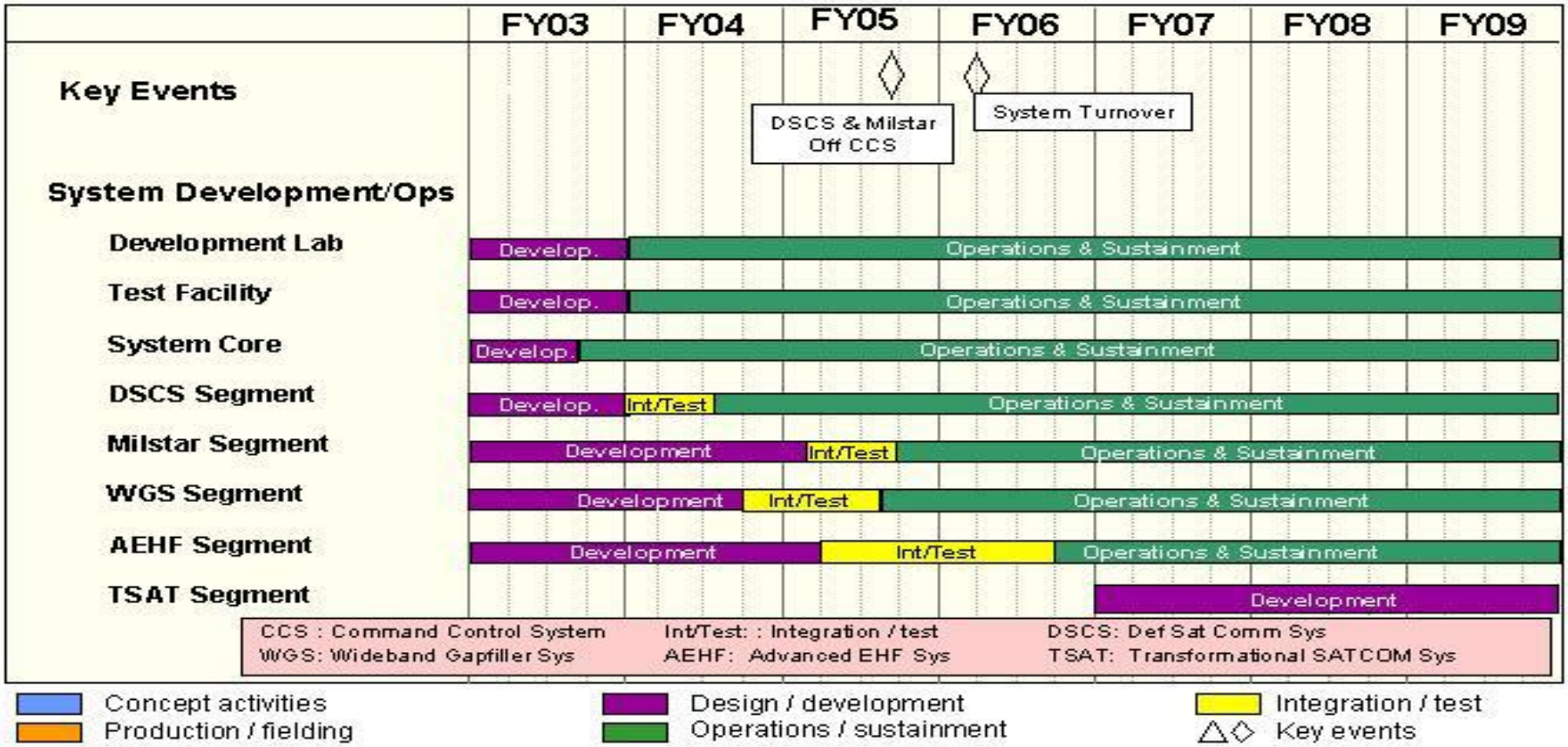


Exhibit R-4a, RDT&E Schedule Detail		DATE: February 2004
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603854F Wideband MILSATCOM (Space)	PROJECT NUMBER AND TITLE: 4870 Command & Control System Consolidated (CCSC)

(U) Schedule Profile	FY 2003	FY 2004	FY 2005
(U) Complete development of system core software	3Q		
(U) Completion of Defense Satellite Communications System (DSCS) command and control functionality		3Q	
(U) Begin Wideband Gapfiller System (WGS) Integration & Test		4Q	
(U) Begin Advanced EHF Development Integration & Test			2Q
(U) Complete MILSTAR command and control functionality			3Q
(U) Transition MILSATCOM legacy systems (DSCS and MILSTAR) to CCS-C			3Q