

UNCLASSIFIED

PE NUMBER: 0101113F
 PE TITLE: B-52 SQUADRONS

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2006
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS
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Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	29.782	26.748	71.379	45.138	30.230	5.124	0.000	Continuing	TBD
4810 Avionics Midlife Improvement (AMI)	9.095	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5039 B-52 Modernization	20.687	26.748	71.379	45.138	30.230	5.124	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

B-52 Modernization is a comprehensive program which assures its viability to perform future wartime missions. B-52 modernization (initiated in FY05) integrates and adds both tactical and global data link communications for real time command and control, targeting, and intelligence. Modernization also upgrades unsupportable training devices to provide aircrew-training devices with the latest B-52 capability. In addition, modernization improves conventional warfare capability with additional MIL-STD-1760 smart weapons and fully integrates advanced targeting pods with the offensive avionics system.

CONNECT

Modernized communications and data link capability is achieved through the through the Combat Network Communication Technology (CONNECT) modification program. CONNECT is a three-phased acquisition approach, which integrates several capabilities into the B-52 weapon system. CONNECT full capability will be fielded commensurate with delivery of government furnished equipment (FAB-T). Phase A, Conventional In-flight Beyond Line-of-Sight (BLOS) Rapid Re-tasking (CIBRR) provides the capability for machine-to-machine interface for rapid re-tasking/re-targeting of CALCM and J-series weapons before release. This phase also provides Link 16 Tactical Data Link (TDL) capability for Line-of-Sight (LOS) in-theater TDL communication of J-series messages, and is funded for development and production through PEs 0207446F and 0207423F respectively. In addition, Phase A hardware and software will provide a computer network infrastructure to support distributed processing and control functions; upgraded Multi-Functional Color Displays (MFCDs) at all crew stations; and the ability to receive intelligence threat data from the Integrated Broadcast System/Receiver (IBS/R). Phase B will integrate the Family of Advanced BLOS Terminals (FAB-T) Extremely High Frequency (EHF) Satellite Communications (SATCOM) system hardware to receive Low Data Rate (LDR) transmitted Emergency Action Messages (EAMs) in support of STRATCOM. This phase will support limited interface between FAB-T and CIBRR but will fully integrate Link 16 Common Link Integration Processing (CLIP) software for all applicable J-series bomber messages and integrate a new interphone system. Phase C is a software-only modification to fully integrate CIBRR and FAB-T Extended Data Rate (XDR) capability complete with Internet Protocol (IP) based capabilities for Global Interface Grid (GIG) interoperability. The FAB-T terminal and antenna are architecture keystones for integration of B-52 conventional BLOS data link communication.

Trainers & CONNECT

B-52 training devices are a mix of 1970's and '80's technology. Most have reached their design capacity and must be upgraded to remain useful training tools. Upgrades to training systems must occur to maintain currency with aircraft configuration. CONNECT program will establish a system integration laboratory for flight simulator development of aircrew trainers. The Defensive System Station computer re-host will be part of the CONNECT upgrade for CIBRR, FAB-T and Link-16 functionality. Aircrew trainers, and to a lesser extent maintenance trainers will operate in real-world, virtual training, and Distributed Mission Operations (DMO) environments.

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Additional efforts include upgrades to avionics computers, mission planning interface to the Air Force mission Support System (AFMSS) and upgrades to the Electronic Countermeasures (ECM) suite.

Weapons Improvements

B-52 Modernization is also responsible for the improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties, but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities will be provided through the integration of advanced weapons both internally (MIL-STD-1760 in the bomb bay) and externally.

The B-52 Modernization program will fully integrate the Advanced Targeting Pod by linking ATP control, display and target geo-location with the B-52s offensive avionics system.

Test & Evaluation

Additionally, B-52 Modernization funds test activities at the Air Force Flight Test Center (AFFTC); engineering and planning studies for potential future weapon system enhancements (weapons, sensors, and avionics); and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

The B-52 is an operational system resulting in this program being budget activity 7 - Operational System

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	31.090	22.784	71.215
(U) Current PBR/President's Budget	29.782	26.748	71.379
(U) Total Adjustments	-1.308	3.964	
(U) Congressional Program Reductions			
Congressional Rescissions	-0.024	-0.386	
Congressional Increases		4.350	
Reprogrammings	-0.420		
SBIR/STTR Transfer	-0.864		
(U) <u>Significant Program Changes:</u>			
Congressional Add of \$4.350 for MIL-STD-1760			

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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS			PROJECT NUMBER AND TITLE 4810 Avionics Midlife Improvement (AMI)		
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Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4810 Avionics Midlife Improvement (AMI)	9.095	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The B-52H Offensive Avionics System (OAS) has several subsystems which must be replaced. The Inertial Navigation System (INS) utilizes 1960 unsupportable spinning mass gyro technology. The Avionics Control Unit (ACU) is a computer system with limited processing capability and memory. The Data Transfer Unit Cartridges (DTUCs) are bulky, unreliable, and obsolete. The AMI program will use non developmental components and technology to replace these subsystems and their associated software, significantly increasing OAS reliability, maintainability, supportability. Reliability, DMS deficiencies, and performance improvements to the OAS are also addressed in this program. Funding is provided for engineering and planning studies for potential future weapon system enhancements (weapons, sensors, and avionics) and for weapon system operation/safety, supportability, maintainability, reliability, and Total Ownership Cost (TOC) improvements.

The B-52 is an operational system resulting in this program being budget activity 7 - Operational System Development.

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Design, development of replacement software	1.300		
(U) Ground and Flight Test	7.669		
(U) System Program Office Support	0.126		
(U) Total Cost	9.095	0.000	0.000

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	9.095							0.000	
(U) Other APPN									
(U) Aircraft Procurement (BP1100)	41.962	36.270	18.251						

(U) D. Acquisition Strategy

The AMI program contracted with Boeing Wichita for aircraft hardware integration and Flight Management System and the Stores Management Overlay software development. Boeing works with selected vendors which will provide EMD hardware. The Government will subsequently contract with these specific vendors for procurement of production hardware to support aircraft installations.

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Exhibit R-3, RDT&E Project Cost Analysis

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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2007</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
				<u>Cost</u>	<u>Award</u> <u>Date</u>	<u>Cost</u>	<u>Award</u> <u>Date</u>	<u>Cost</u>	<u>Award</u> <u>Date</u>			
(U) <u>Product Development</u> Boeing, Wichita	CONTRAC T										0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Support</u> OC-ALC/LH	PMA										0.000	
OC-ALC/LAS	206										0.000	
OO-ALC/LIR	616										0.000	
SER/CASU	MIPR										0.000	
Miscellaneous	BTR/SIBR										0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Test & Evaluation</u> 419 FLTS	Project Order				9.095						9.095	
Subtotal Test & Evaluation			0.000	9.095		0.000		0.000		0.000	9.095	0.000
Remarks:												
(U) <u>Management</u> Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	9.095		0.000		0.000		0.000	9.095	0.000

Exhibit R-4, RDT&E Schedule Profile

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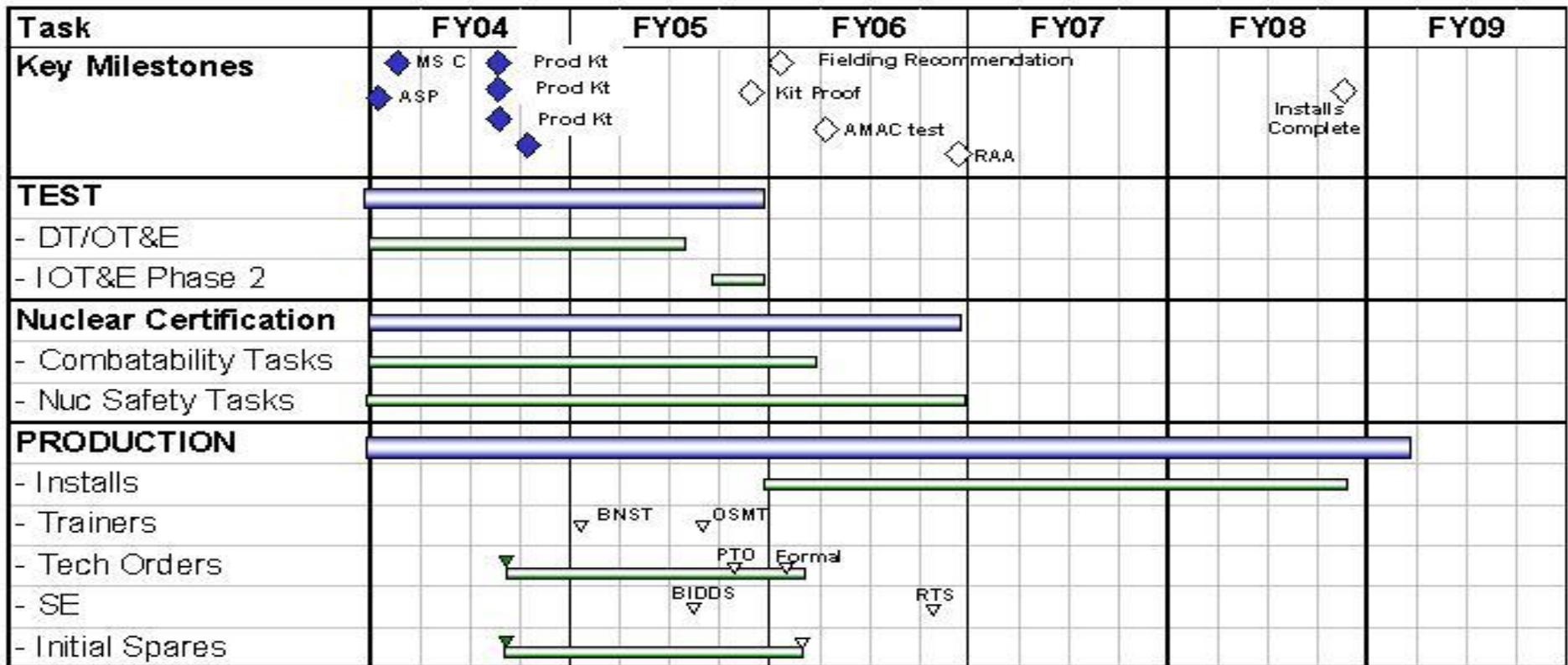
PROJECT NUMBER AND TITLE
4810 Avionics Midlife Improvement (AMI)



U.S. AIR FORCE

Program Status Schedule

Rapidly delivering war-winning capability



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Exhibit R-4a, RDT&E Schedule Detail

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PROJECT NUMBER AND TITLE

**4810 Avionics Midlife Improvement
(AMI)**

(U) Schedule Profile

(U) Ground & Flight Test

(U) Kit Proof

(U) Production

(U) Trainers

FY 2005

1-3Q

4Q

1-4Q

2-4Q

FY 2006

FY 2007

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE		
07 Operational System Development				0101113F B-52 SQUADRONS			5039 B-52 Modernization		
Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5039 B-52 Modernization	20.687	26.748	71.379	45.138	30.230	5.124	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

B-52 Modernization is a comprehensive program which assures its viability to perform future wartime missions. B-52 modernization (initiated in FY05) integrates and adds both tactical and global data link communications for real time command and control, targeting, and intelligence. Modernization also upgrades unsupportable training devices to provide aircrew-training devices with the latest B-52 capability. In addition, modernization improves conventional warfare capability with additional MIL-STD-1760 smart weapons and fully integrates advanced targeting pods with the offensive avionics system.

CONNECT

Modernized communications and data link capability is achieved through the through the Combat Network Communication Technology (CONNECT) modification program. CONNECT is a three-phased acquisition approach, which integrates several capabilities into the B-52 weapon system. CONNECT full capability will be fielded commensurate with delivery of government furnished equipment (FAB-T). Phase A, Conventional In-flight Beyond Line-of-Sight (BLOS) Rapid Re-tasking (CIBRR) provides the capability for machine-to-machine interface for rapid re-tasking/re-targeting of CALCM and J-series weapons before release. This phase also provides Link 16 Tactical Data Link (TDL) capability for Line-of-Sight (LOS) in-theater TDL communication of J-series messages, and is funded for development and production through PEs 0207446F and 0207423F respectively. In addition, Phase A hardware and software will provide a computer network infrastructure to support distributed processing and control functions; upgraded Multi-Functional Color Displays (MFCDs) at all crew stations; and the ability to receive intelligence threat data from the Integrated Broadcast System/Receiver (IBS/R). Phase B will integrate the Family of Advanced BLOS Terminals (FAB-T) Extremely High Frequency (EHF) Satellite Communications (SATCOM) system hardware to receive Low Data Rate (LDR) transmitted Emergency Action Messages (EAMs) in support of STRATCOM. This phase will support limited interface between FAB-T and CIBRR but will fully integrate Link 16 Common Link Integration Processing (CLIP) software for all applicable J-series bomber messages and integrate a new interphone system. Phase C is a software-only modification to fully integrate CIBRR and FAB-T Extended Data Rate (XDR) capability complete with Internet Protocol (IP) based capabilities for Global Interface Grid (GIG) interoperability. The FAB-T terminal and antenna are architecture keystones for integration of B-52 conventional BLOS data link communication.

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PROJECT NUMBER AND TITLE

5039 B-52 Modernization

Weapons Improvements

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The B-52 is an operational system resulting in this program being budget activity 7 - Operational System

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Product Development	13.200	18.750	39.779
(U) Simulation/Trainer Development	1.000	4.400	23.600
(U) Government Test	0.100	0.141	3.700
(U) Program Support/Modeling and Simulation/Studies and Analysis	6.143	0.592	1.000
(U) Management Support	0.244	2.865	3.300
(U) Total Cost	20.687	26.748	71.379

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Appn 36, PE 0207446F, Bomber TDL Core	12.980	42.880	87.700						TBD
(U) Other APPN									TBD
(U) Appn 10, PE 0101113F, B52 Squadrons, Aircraft Procurement BP11, Mods	5.923			133.050	127.416	44.068	29.345	17.270	TBD
RDT&E funding provided by PE 27446F, Bombers Tactical Data Link for integration of Link-16									

(U) D. Acquisition Strategy

B-52 modernization is a development program that will be sole sourced to Boeing. Boeing will be developing the architecture for a system to process the information;

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procuring information processing equipment from their subcontractors; and developing drawings, data, and time compliance technical order (TCTO) for installation on the B-52.

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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2005 Cost</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>												
CONNECT Pre SDD	T&M	Boeing, Wichita KS		7.200	Dec-04						7.200	
CONNECT SDD	CPFF	Boeing, Wichita KS		6.000	Mar-05	14.400	Dec-05	39.779		Continuing	TBD	
1760 Integration	Contract	TBD				4.350					4.350	
Subtotal Product Development			0.000	13.200		18.750		39.779		Continuing	TBD	0.000
Remarks:												
<u>(U) Support</u>												
Simulator/Trainer	616	509 MASSG, OO-ALC, UT		1.000		4.400		23.600		Continuing	TBD	
CONNECT Program Support, Studies & Analysis	Contract			0.750		0.592		1.000		Continuing	TBD	
OC-ALC Studies & Analysis	Contract	Boeing, Wichita KS		5.393							5.393	
Subtotal Support			0.000	7.143		4.992		24.600		Continuing	TBD	0.000
Remarks:												
<u>(U) Test & Evaluation</u>												
419 FLTS	Project Order			0.100		0.141		3.700		Continuing	TBD	
Subtotal Test & Evaluation			0.000	0.100		0.141		3.700		Continuing	TBD	0.000
Remarks:												
<u>(U) Management</u>												
AEASS		Wright-Patterson on AFB, OH				2.150		2.485		Continuing	TBD	
327 BMSG		Tinker AFB, OK		0.244		0.715		0.815		Continuing	TBD	
Subtotal Management			0.000	0.244		2.865		3.300		Continuing	TBD	0.000
Remarks:												
<u>(U) Total Cost</u>			0.000	20.687		26.748		71.379		Continuing	TBD	0.000

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PROJECT NUMBER AND TITLE
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Exhibit R-4: B-52 Modernization																												
Quarter	FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CONNECT SDD Contract	▲														▲													
SDD CIBRR Phase A Color Displays, Client Server Architecture SA, Conventional Retasking, Link-16 Integration															▲													
Phase A Test															▲	—	▲											
SDD CONECT Phase B FAB-T Integration, completion of Link-16 message set					▲																▲							
Phase B Test																					▲	—	▲					
SDD CONECT Phase C Software mod for FAB-T Extended Data Rate capability																	▲											
Production Kit Buys/Installation																												
Phase A																												
Phase B																												

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(U) **Schedule Profile**

(U) CONECT SDD Contract Award

(U) CONECT Phase A Development

(U) CONECT Phase B Development

(U) CONECT Phase C Development (starts FY 09)

FY 2005

2Q

2-4Q

FY 2006

1-4Q

1-4Q

FY 2007

1-4Q

1-4Q