ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - System Development and Demonstration	**0604201A - AIRCRAFT AVIONICS**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		72521	13259	61946	71307	85450	99440	56151	0	543466
C94	JT AVIONICS STNDRDZN	11471	0	0	0	0	0	0	0	13393
C97	ACFT AVIONICS	61050	13259	61946	71307	85450	99440	56151	0	530073

A. Mission Description and Budget Item Justification: This Program Element (PE) funds the development of avionics systems required to horizontally and vertically integrate the battlefield. Tasks in this PE support research efforts in the engineering and manufacturing development phases of these systems.

Aviation Tactical Communication Systems (ATCS) is a Rotary Wing Army Aviation Program that requires RDT&E funds for Alternative Communications and Joint Tactical Radio System (JTRS). Alternative Communications are required as a result of delays in the JTRS program and consist of existing radios requiring no development and meet the minimum acceptable communications capability approved by the Vice Chief of Staff of the Army. Radio integration for this program began May 2005 with the delivery of the first radios to Aircraft Software Integration Labs. RDT&E funds are required to continue the integration, testing and certification of Alternative Communications A and B kits into the AH-64D Block II and III, CH-47F/MH-47G, and UH/HH-60M/MH-60M. JTRS is the transformational system that will provide Army Aviation the required interoperability capability for Future Force and Joint Force operations. These RDT&E funds are required to design, develop, integrate, and qualify the aircraft installation kits (A Kits) and to obtain an Airworthiness Release to use the JTRS in Army rotary wing in the AH-64D, CH-47F, UH/HH-60M, ARH and Special Operations Aircraft (SOA).

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006)	79356	23451	34714
Current BES/President's Budget (FY 2007)	72521	13259	61946
Total Adjustments	-6835	-10192	27232
Congressional Program Reductions		-134	
Congressional Rescissions		-58	
Congressional Increases		-10000	
Reprogrammings	-6835		
SBIR/STTR Transfer			
Adjustments to Budget Years			27232

Change Summary Explanation:
FY 06 Congressional reduction $10 Million for JTRS program delay and restructure efforts. .192 General Reductions. FY07 $27,232 increase for intergration, testing and certification of Alternative Communication.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604201A - AIRCRAFT AVIONICS**	**C97**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
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The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to Tactical Internet (TI) and Fire Support (FS) internet for Army aircraft. With interfaces supporting a 6 channel transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/210/220/231, ARC-186, ARC-164, EPLRS, and the Blue Force Tracker's (BFT) MT-2011 Transceiver, as well as, provide 1553 and Ethernet portals for rapid data transfer. This hardware/software solution also provides a flexible, software driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Variable Message Format messages capability to the cockpit. These RDT&E funds are required to continue a development and integration effort for an Open Systems Architecture IDM solution compatible with the Common Avionics Architecture System (CAAS) cockpit for the CH-47F and HH/UH-60M helicopters. This effort provides the foundation for future open architecture solutions which will reduce space, weight, and power demands not only for the CAAS aircraft but also matures technology for the AH-64D Block III. Funds also begin development and integration of the Future Combat Systems (FCS) database-to database exchange interoperability standard.

The Joint Precision Approach and Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical, and austere environments. This effort evaluates technical approaches for incorporating JPALS into Army aircraft while considering aircraft environment, electrical power, system space, weight, antenna placement, and electromagnetic compatibility without nullifying low observable capability requirements; also develops fixed base tactical and man pack ground stations. JPALS supports research efforts in the Joint Technology Development (TD) phase of the modified acquisition life cycle approved by the Defense Acquisition Executive in September of 1998.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Continue A-Kit development, integration and system testing for AH-64D, CH-47F, and UH-60M (ATCS).	50021	5169	40316
Continue Systems Engineering, Antenna Integration Support and Logistics efforts (ATCS).	3946	629	3908

Continue Program Management support for the A-Kit development (ATCS).	1695	399	997
Continue Test and Evaluation Support (ATCS).	1659	627	1940
Continue to provide system engineering, logistics, programmatic, and technical documentation for JPALS land and sea based development efforts and execute joint Army/Navy/Air Force effort to develop a JPALS capable Embedded GPS Inertial (EGI) receiver. (JPALS)	1774	1783	1820
Continue Program Management Support (JPALS)	39	79	96
Continue development and integration of an open systems architecture IDM solution and Future Combat System (FCS) database-to-database exchange (IDM)	1729	4372	12096
Program Management Support (IDM)	0	124	517
Continue Systems Engineering and Logistics efforts (IDM)	187	77	256
Total	61050	13259	61946

B. Other Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Airborne Avionics SSN AA0700	28773	60769	109266	122276	64954	145859	165387	CONT	CONT

C. Acquisition Strategy This project is comprised of multiple systems:

1) ATCS consist of the integration efforts required for Alternative Communications and JTRS.

Alt Comms - The delays in the JTRS program leave the modernized Army Aviation helicopter production lines for UH-60M Blackhawk, CH-47F Cargo, and the AH-64D Longbow Apache with a lack of critical government furnished communications equipment until FY 2014 when JTRS is projected to be available. Therefore, the Army will continue integration of Alternative Communications using host platform integration labs and Airworthiness certification. Integration and testing/certification are required to support the FY 2007 aircraft production buys. Without Alternative Communications the new production aircraft will have no communications capability and thus will not be operational under any circumstances. Aviation JTRS Interface Control Document and A-kit development continues as part of the transformational system that will provide Army Aviation the required interoperability capability for the future force.

2) IDM - The non-recurring engineering and software development is used to integrate the IDM into an open systems architecture. The initial effort is to develop a data exchange capability with the CAAS processors. The software will be ported into the CAAS eliminating the requirement for the IDM B Kit.

3) JPALS- The JPALS acquisition strategy is to complete the current risk reduction effort and Technology Development (TD) phase which will lead to the development of a JPALS combined land, sea, and avionics specifications. Using this specification, a JPALS prototype ground station will be tested in both benign and jamming environments prior

to MS B in Apr 06. JPALS avionics functionality will be integrated on a GPS card which will be inserted into the Army's existing avionics (EGI). JPALS integration will be synchronized with the integration of M Code into Army platforms in the FY 2013 timeframe.

ARMY RDT&E COST ANALYSIS (R3)

February 2006

BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
ATCS integration, development and system testing for AH-64D, CH-47F, UH-60M (ATCS).	Various	Boeing; Mesa, AZ, PA, & CA; Rockwell Collins, Cedar Rapids, IA; Sikorsky; Stratford, CT	54108	50021	3-4Q	5169	1-3Q	40316	1-3Q	Continue	Continue	Continue
Dev/Integration of an open sys architecture IDM solution and FCS database-to-database exchange(IDM)	SS/CPFF	ICI, McLean, VA	0	1729	2Q	4372	1-3Q	12096	1-3Q	Continue	Continue	Continue
Subtotal:			54108	51750		9541		52412		Continue	Continue	Continue

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
System Engineering, Antenna Integration Support and Logistics Efforts (ATCS)	Various	Westar, AL; ARINC, AL; GSA, AL; JVYS, AL; LSSI, MD	0	3946	1-3Q	629	1-3Q	3908	1-3Q	Continue	Continue	Continue
System engineering, logistics, and technical support(JPALS)	MIPR	Various	0	1774	1-3Q	1783	1-3Q	1820	1-3Q	Continue	Continue	Continue
Continue Systems Engineering and Logistics Efforts (IDM)	MIPR	Various	0	187	1-3Q	77	1-3Q	256	1-3Q	Continue	Continue	Continue
Subtotal:			0	5907		2489		5984		Continue	Continue	Continue

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation (ATCS)	MIPR	Various	542	1659	1-3Q	627	1-3Q	1940	1-3Q	Continue	Continue	Continue

Subtotal:			542	1659		627		1940		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PM Spt (IDM)	MIPR	AMCOM, AL/PM AME, AL	1245	0		124	1-4Q	517	1-4Q	Continue	Continue	Continue
PM Spt (ATCS)	MIPR	AMCOM, AL/PM AME, AL	4475	1695	1-4Q	399	1-4Q	997	1-4Q	Continue	Continue	Continue
PM Spt (JPALS)	MIPR	AMCOM, AL/PM AME, AL	0	39	1-4Q	79	1-4Q	96	1-4Q	Continue	Continue	Continue
Subtotal:			5720	1734		602		1610		Continue	Continue	Continue
Project Total Cost:			**60370**	**61050**		**13259**		**61946**		**Continue**	**Continue**	**Continue**

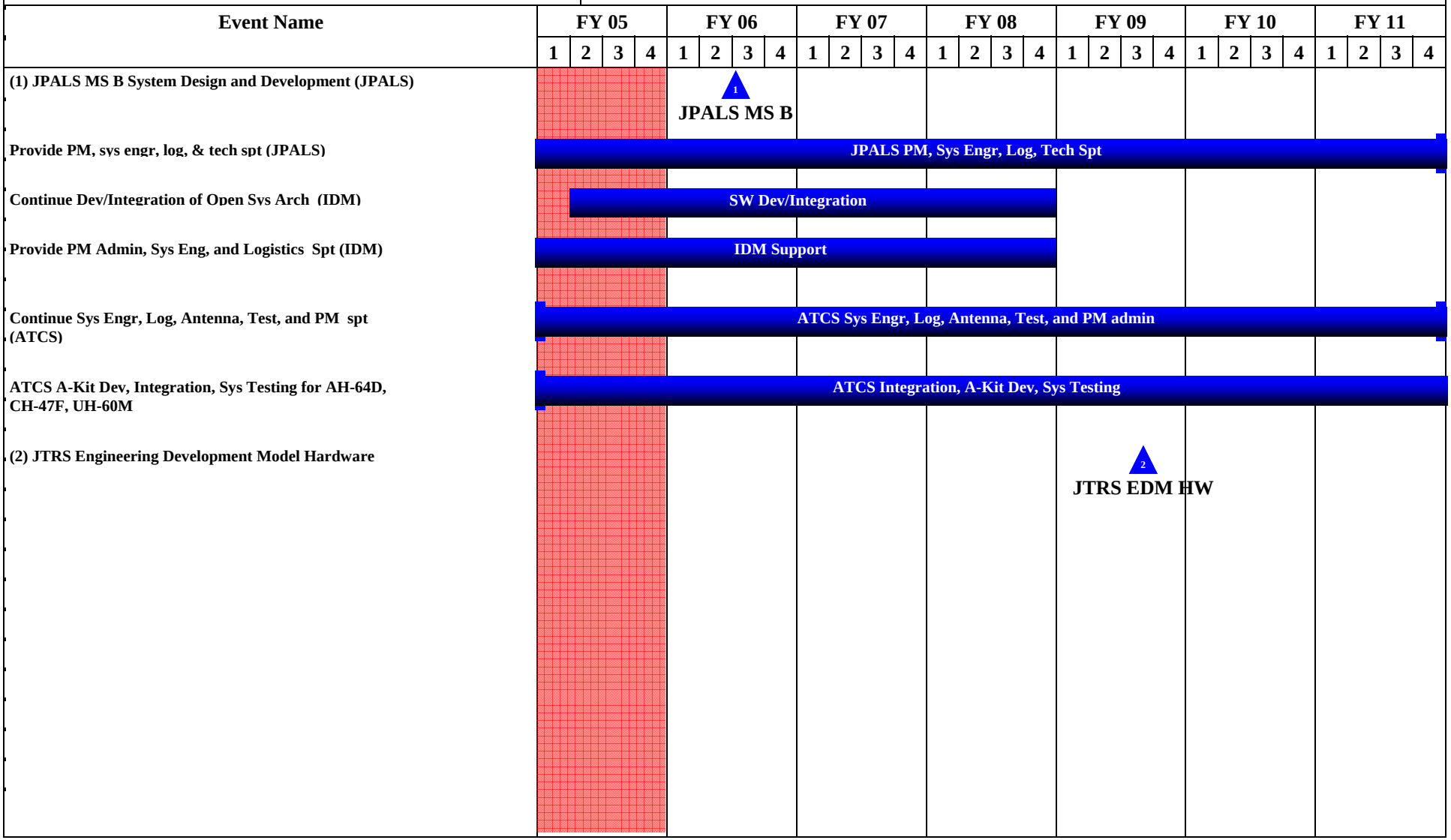
Schedule Profile (R4 Exhibit)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604201A - AIRCRAFT AVIONICS

PROJECT
C97



Schedule Detail (R4a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604201A - AIRCRAFT AVIONICS**	**C97**

Schedule Detail	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
JTRS Engineering Development Model Hardware					4Q		
Continue A-Kit Dev, Integration, and Sys Testing for AH-64D, CH-47F, UH-60M (ATCS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue Test and Evaluation Support (ATCS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Continue Program Managment support of the A-Kit development (ATCS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
JPALS MS B System Design and Development		3Q					
Continue PM support, system engineering, logistics, test planning and technical support (JPALS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Dev/Integration of open sys architecture IDM solution FCS database-to-database exchange (IDM)	2Q	1-4Q	1-4Q	1-4Q			
Continue System Engineering and Logistics Spt (IDM)	1-4Q	1-4Q	1-4Q	1-4Q			
Program Management Support (IDM)		1-4Q	1-4Q	1-4Q			
System Engineering Antenna Integration Support and Logistics Efforts (ATCS)	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q