ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604280A - Joint Tactical Radio System**	**162**

COST (In Thousands)		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
162	JOINT TACTICAL RADIO SYSTEM	62892	133293	121400	71221	57233	28573	27073	Continuing	Continuing

A. Mission Description and Budget Item Justification: The mission of the Joint Tactical Radio System (JTRS) program is to provide to the Department of Defense software programmable, reconfigurable digital radio systems to meet Joint Vision 2010/2020 requirements for interoperability, flexibility, adaptability, and information exchange. The program will acquire a family of affordable, scaleable, high-capacity, interoperable Line of Sight (LOS) and Beyond Line of Sight (BLOS) radios to support simultaneous networked voice, data, and video transmissions with low probability of intercept. The program will provide operational forces with an upgraded interoperable communications capability for improved battlespace management and increased warfighter effectiveness. Also, JTRS will contribute to Homeland Security and Defense, providing communications interoperability among civil and local agencies, particularly First Response units. Additionally, interoperability with allied and coalition partners is pursued through international cooperative efforts, including a signed US-Japan Memorandum Of Understanding (MOU) and the signed US-UK Project Arrangement. A Project Agreement with Sweden is currently being staffed in Army. Discussions with Canada, Australia, France, Turkey and within other NATO countries are ongoing.

The JTRS program is a distributed acquisition effort, with acquisition responsibilities divided among Service acquisition agencies. The Joint Program Office (JPO) is responsible for (1) the overall management and oversight of the JTRS program, (2) development, validation, and evolution of a common JTRS Software Communications Architecture (SCA), (3) development, evolution and maintenance of waveform software applications, (4) development of software cryptographic algorithms and cryptographic equipment applications, and (5) testing and certification of JTRS hardware and software products and (6) JTRS network and gateway software. Service acquisition agencies are responsible for acquiring and fielding particular systems to meet specific warfighter needs, including hardware development, integration of software, and platform integration efforts. This approach promotes commonality, jointness and interoperability, providing cost savings through maximization of software code porting and reuse, technology insertion, and common solutions, while allowing flexibility to meet unique requirements. The Army is the Executive Service for the joint program.

In FY2004 and FY2005, the JTRS JPO will manage and execute transition of the Joint Task Force WARNET (JTFW) capability to the Services. JTFW is an integrated, secure, wide area networking communications and command and control (C2) applications architecture designed to promote joint interoperability among deployed US combatant forces, including coalition partners. JTFW uses transformational technologies to enhance connectivity among users and provides interface and translation functionality between disparate Service tactical C2 systems.

This system supports the Current to Future Transition path of the Transformation Campaign Plan (TCP).

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Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Maintain, evolve and provide configuration management of the SCA.	1349	1035	1035
Continue acquisition of waveforms listed in the JTRS Operational Requirements Document (ORD), including development of complex waveforms, Cluster support and other waveform related activities. Continue development of crypto algorithm software and other security related activities.	37483	78718	80771
Continue technology advancement and problem resolution, to include areas such as multiple independent levels of security (MILS), multilevel security (MLS), and network modeling and security.	800	1000	1000
Continue hardware and software waveform certification process (SCA compliance testing) to meet program requirements.	10396	9414	11636
Manage and transition Joint Task Force WARNET.	0	23000	11000
Continue Joint Program Office (JPO) technical support, including waveform development, system engineering, spectrum allocation and approval for use, systems security engineering and problem resolution and support of Software Communications Architecture (SCA) activities. Provide technical guidance to Service Program Management Offices (PMOs). Provide oversight for all DoD radio acquisitions to ensure JTRS interoperability.	7709	9574	9843
Continue JPO program support, including administration, program management, international cooperative efforts, legal, contracting, budget execution and cost estimating activities.	5155	6679	6115
Small Business Innovative Research/Small Business Technology Transfer Programs	0	3873	0
Totals	62892	133293	121400

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B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	62921	134693	91583
Current Budget (FY 2005 PB)	62892	133293	121400
Total Adjustments	-29	-1400	29817
Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings	-29	-1400	
SBIR/STTR Transfer			
Adjustments to Budget Years			29817

Change Summary Explanation: FY2005 funding increase for new ORD 3.2 Waveform requirements, Network Data Link (NDL) for Future Combat System (FCS) and validated personnel requirements.

C. Other Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	ToCompl	TotalCost
RDTE, 0604805A C3 Systems - Eng Dev; project 615, JTRS Ground Domain Integ (Cl 1)	60659	198338	101770	61578	41322	14616	2674	Continue	Continue
OPA, ARMY, JTRS CLUSTER 1, B90100*	0	0	121452	136436	109171	101150	177147	Continue	Continue
RDTE, 0604201A Aircraft Avionics (JTRS) (Cluster 1)	24483	44331	62964	55629	26748	36526	24130	Continue	Continue
APA, JTRS A-Kit Procurement AA0702 (Cl 1)	0	1892	0	19058	61545	55083	66189	Continue	Continue
RDTE, 0604805A C3 Systems - Eng Dev; project 61A, JTRS Cluster 5 Dev	0	0	100605	94522	75311	25454	3960	0	299852

C. Other Program Funding Summary (continued) FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 FY 2008 FY 2009

D. Acquisition Strategy: The JTRS acquisition strategy consists of a three-step process:

Step 1: Baseline definition of the software architecture. This step was completed in FY99.

Step 2: Development and validation of the SCA. Step 2 is further divided into three parts. In Step 2A, a four-company Consortium (Raytheon, ITT, Rockwell-Collins, and BAE) developed the architecture and validated it as the Software Communications Architecture (SCA). The SCA is currently at Version 2.2, which was published in December 2001. The SCA is in the final stages of Commercial/International acceptance by the Object Management Group (OMG). In Step 2B, other companies provided additional third-party validation. The validation process used hardware prototypes and an initial set of software-based waveforms. Step 2C, which was managed and partially funded by PM Tactical Radio Communications Systems (TRCS), was another prototyping activity. It demonstrated that the SCA supports the security enhancements now in the SCA and JTRS networking requirements.

Step 3: In Step 3, the JPO is developing waveform software applications and will certify JTRS products. This step is on-going. The JPO is developing waveforms as identified in the JTRS Operational Requirements Document (ORD). The current version of the JTRS ORD, version 3.2, was approved 9 April 2003. The JPO is also developing certification tools and procedures for the testing of JTRS products. The JTRS test and certification activity, the JTRS Technology Laboratory (JTeL), achieved Initial Operational Capability (IOC) 31 July 2003. Full Operational Capability is scheduled for 1 October 2004. Also in Step 3, the Services are acquiring and will test and field JTRS radios.

On 19 July 2001, the Defense Acquisition Board (DAB) approved the basic acquisition approach. On 2 August 2001, the Defense Acquisition Executive (DAE) signed a memorandum that approved the JTRS acquisition strategy. This memorandum also designated the JTRS SCA and waveform program an ACAT 1D program, to be managed by the JTRS JPO. The Cluster 1 acquisition was also designated an ACAT 1D program, to be managed by the Army's Program Executive Officer, Command, Control, and Communications (Tactical) (PEO C3T). The first Joint Cluster procurement, Cluster 1, is a joint acquisition led by the Army (PM WIN-T) to acquire and field Ground, Vehicular, and Rotary Wing JTR sets.

The DAB review on 03 June 2002 authorized award of the Cluster 1 contract and JPO contracts for waveforms and crypto algorithms. The Cluster 1 contract was awarded to Boeing as the Prime System Contractor on 24 June 2002. This DAB also authorized Service leads for Clusters 2 (SOCOM Handheld Block 1), 3 (Maritime/Fixed Site) and 4 (Airborne). Twenty ORD waveforms are being developed using the Boeing contract. The JPO is also awarding a series of contracts for the balance of the ORD waveforms. The first of these contracts was awarded in September 2002, with two additional awards in December 2002. Also in December 2002, a contract was awarded to General Dynamics for development of AIM crypto algorithms. The Sierra crypto algorithm contract was awarded to Harris Corporation in January 2003. Additionally, on May 29, 2003, an Acquisition Decision Memorandum designated the Army lead service for Cluster 5 for Handheld, Manpack and Embedded JTR sets.

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs 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
a . Architecture Development and Validation; Maintain, Evolve and Provide CM Mgmt of SCA	Various	Various	62455	1349	3Q	1035	2Q	1035	2Q	Continue	65874	Continue
b . Waveform Development; Crypto S/W; Waveform Sustainment Engineering	Various	Various	71392	37483	1-2Q	82591	1-2Q	80771	1-2Q	Continue	272237	Continue
c . Certification (SCA Compliance Testing)	Various	Various	16370	10396	1-3Q	9414	1-2Q	11636	1-2Q	Continue	47816	Continue
d . Technology Advancement/Problem Resolution	Various	Various	7460	800	2Q	1000	1-3Q	1000	1-3Q	Continue	10260	Continue
e . JTF WARNET	Various	Various	0	0		23000	2-3Q	11000	2-3Q	0	34000	0
Subtotal:			157677	50028		117040		105442		Continue	430187	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs 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
a . FFRDC - MITRE and Other contracted Technical Support	FFP	Various	20983	7709	1-2Q	9574	1-2Q	9843	1-2Q	Continue	48109	Continue
Subtotal:			20983	7709		9574		9843		Continue	48109	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs 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
a . N/A*	N/A	N/A	0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0

Remarks: *System and operational testing performed by the Services; funded in Service appropriations.

ARMY RDT&E COST ANALYSIS(R3)

February 2004

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs 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
a . Program Support	Various	Various	13838	5155	1-2Q	6679	1-2Q	6115	1-2Q	Continue	31787	Continue
Subtotal:			13838	5155		6679		6115		Continue	31787	Continue
Project Total Cost:			192498	62892		133293		121400		Continue	510083	Continue

Schedule Profile (R4 Exhibit)

February 2004

BUDGET ACTIVITY
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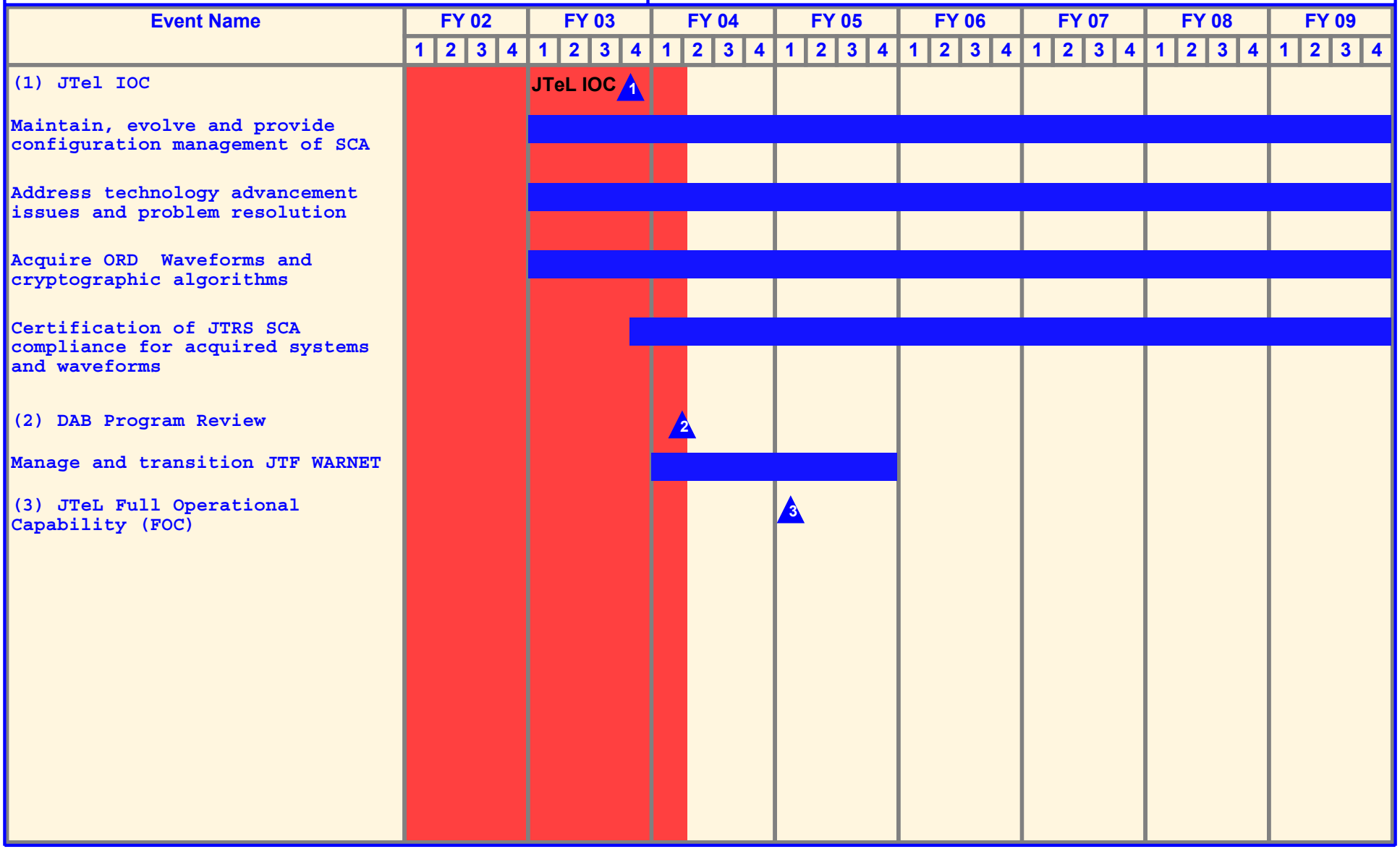

Schedule Detail (R4a Exhibit)

February 2004

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Schedule Detail	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Maintain, Evolve and Provide Configuration Management of SCA	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Address Technology Advancement Issues and Problem Resolution	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Award JPO Waveform Contracts	1Q	3Q	2Q	2Q	2Q		
Acquire ORD Waveforms and Cryptographic Algorithms	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
JTRS Technology Lab (JTeL) Initial Operational Capability (IOC)	4Q						
Provide Certification of JTRS SCA Compliance for Acquired Systems and Waveforms.	4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DAB Program Review		1Q					
Manage and transition JTF WARNET		1-4Q	1-4Q				
JTRS Technology Lab (JTeL) Full Operational Capability (FOC)			1Q				

NOTE: All milestones scheduled through 1QFY2004 have been accomplished.