

UNCLASSIFIED

PE NUMBER: 0604280F

PE TITLE: JOINT TACTICAL RADIO SYSTEMS (JTRS)

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2005

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS)

Cost (\$ in Millions)	FY 2004 Actual	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
Total Program Element (PE) Cost	29.260	39.099	124.225	131.527	64.839	40.691	3.048	1.687	Continuing	TBD
5068 Joint Tactical Radio System (JTRS)	29.260	39.099	124.225	131.527	64.839	40.691	3.048	1.687	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

Joint Tactical Radio System (JTRS) is the Department of Defense family of common software-defined programmable radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. JTRS radios are intended to interoperate with existing radio systems and provide the warfighter with additional communications capability to access maps and other visual data, communicate via voice and video and obtain information directly from battlefield sensors. JTRS will provide internet protocol (IP)-based capability to the warfighter and will replace all existing tactical radios based on the Services' migration plans. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. JTRS is a key enabler that will provide dynamic connectivity throughout the battle space to operate within the network centric operational environment

In Nov 03, the AF and Navy Service Acquisition Executives decided to foster commonality by merging the AF-led JTRS Airborne Cluster and Navy-led JTRS Maritime/Fixed Station Cluster development efforts. The JTRS Defense Acquisition Board endorsed the program merger in Dec 03. This joint development effort is called Airborne and Maritime/Fixed Station (AMF) JTRS. Under this arrangement, a joint Air Force and Navy team manages the development of a common core radio design that will be the basis for satisfying the Airborne, Maritime and Fixed Station domain requirements. To remain consistent with the original intent of both programs, the AF and Navy will equitably cost share the development of the common core radio design, but AF will fund any unique Airborne requirements and Navy will fund any unique Maritime/Fixed Station requirements. This effort is currently led by an AF Program Manager and Navy Deputy Program Manager with the lead and key managerial positions rotating at predetermined times during the acquisition. This PE represents the AF contribution to the combined AMF JTRS development and to the implementation of AF JTRS requirements. In addition to the AMF JTRS development, FY04-07 funds are used for the planning and implementation of AF JTRS, such as requirements and integration analyses, engineering support, and the JTRS Wideband Network Waveform (WNW) / Airborne Network requirements.

Additional AF requirements for tactical communications (i.e., handhelds, manpacks, vehicular, etc.) will be met by collaborating with other JTRS Clusters. Funding to support program planning and engineering support to evaluate AF requirements for these Clusters is included in this PE.

This program is in budget activity 5 (System Development and Demonstration) because it supports development and integration of JTRS solutions.

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	38.814	49.856	122.650	103.363
(U) Current PBR/President's Budget	29.260	39.099	124.225	131.527
(U) Total Adjustments	-9.554	-10.757		
(U) Congressional Program Reductions	-0.389	-10.000		
Congressional Rescissions	-0.329	-0.757		
Congressional Increases				
Reprogrammings	-7.695			
SBIR/STTR Transfer	-1.141			

(U) Significant Program Changes:

FY04 funding provides for Pre-System Development and Demonstration (Pre-SDD) effort that includes initial system engineering/design efforts through Preliminary Design Review (PDR) to deal with interface/integration constraints associated with 75+ Airborne Platform types planning to integrate AMF JTRS. This Pre-SDD effort was originally scheduled to start in FY03, but was delayed due to the combining of Airborne and Maritime/Fixed Station Cluster development efforts into Airborne, Maritime/Fixed Station (AMF) JTRS. FY04 funds were adjusted to account for delay in Pre-SDD contract awards. FY05 funding will be used to continue the development effort and implement AF JTRS requirements. FY06 funding continues the system development phase of the program; transitioning from the Pre-SDD to the SDD phase which includes Critical Design Review and pre-engineering development model build-up of multiple system form factors and ancillary equipment. The SDD phase also includes significant software development, contractor testing, and systems integration activities to support an early operational assessment in FY07. FY06-07 funding was adjusted to account for a combined AMF JTRS joint development program cost estimate.

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604280F JOINT TACTICAL RADIO
SYSTEMS (JTRS)

PROJECT NUMBER AND TITLE

5068 Joint Tactical Radio System
(JTRS)

Cost (\$ in Millions)	FY 2004 Actual	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
5068 Joint Tactical Radio System (JTRS)	29.260	39.099	124.225	131.527	64.839	40.691	3.048	1.687	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

Joint Tactical Radio System (JTRS) is the Department of Defense family of common software-defined programmable radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. JTRS radios are intended to interoperate with existing radio systems and provide the warfighter with additional communications capability to access maps and other visual data, communicate via voice and video and obtain information directly from battlefield sensors. JTRS will provide internet protocol (IP)-based capability to the warfighter and will replace all existing tactical radios based on the Services' migration plans. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. JTRS is a key enabler that will provide dynamic connectivity throughout the battle space to operate within the network centric operational environment

In Nov 03, the AF and Navy Service Acquisition Executives decided to foster commonality by merging the AF-led JTRS Airborne Cluster and Navy-led JTRS Maritime/Fixed Station Cluster development efforts. The JTRS Defense Acquisition Board endorsed the program merger in Dec 03. This joint development effort is called Airborne and Maritime/Fixed Station (AMF) JTRS. Under this arrangement, a joint Air Force and Navy team manages the development of a common core radio design that will be the basis for satisfying the Airborne, Maritime and Fixed Station domain requirements. To remain consistent with the original intent of both programs, the AF and Navy will equitably cost share the development of the common core radio design, but AF will fund any unique Airborne requirements and Navy will fund any unique Maritime/Fixed Station requirements. This effort is currently led by an AF Program Manager and Navy Deputy Program Manager with the lead and key managerial positions rotating at predetermined times during the acquisition. This PE represents the AF contribution to the combined AMF JTRS development and to the implementation of AF JTRS requirements. In addition to the AMF JTRS development, FY04-07 funds are used for the planning and implementation of AF JTRS, such as requirements and integration analyses, engineering support, and the JTRS Wideband Network Waveform (WNW) / Airborne Network requirements.

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This program is in budget activity 5 (System Development and Demonstration) because it supports development and integration of JTRS solutions.

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) AMF JTRS Initial Design through PDR (initial development, integration planning, and risk reduction)	24.472	21.719		
(U) AF JTRS Requirements Planning and Implementation	1.761	3.227	2.605	2.353
(U) Business Operations, Logistics Planning, Software Management and Support	1.936	3.105	5.900	5.992
(U) AMF (Airborne) JTRS System Engineering, Integration and Test	1.091	11.048	18.294	21.742
(U) AMF JTRS Design -- post PDR Design and SDD Contract			97.426	101.440
(U) Total Cost	29.260	39.099	124.225	131.527

Project 5068

R-1 Shopping List - Item No. 72-3 of 72-8

Exhibit R-2a (PE 0604280F)

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Exhibit R-2a, RDT&E Project Justification

DATE

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604280F JOINT TACTICAL RADIO
SYSTEMS (JTRS)

PROJECT NUMBER AND TITLE

5068 Joint Tactical Radio System
(JTRS)(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2004</u>	<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>Estimate</u>	<u>Complete</u>	
PE 0207423F Advanced										
(U) Communications Systems -			42.831	156.093	205.548	309.282	306.673	333.073	Continuing	TBD
Aircraft Procurement, AF										
PE 0207423F Advanced										
(U) Communications Systems -		0.957	11.560	63.607	112.386	161.215	167.949	244.821	Continuing	TBD
Other Procurement, AF										
PE 0207423F Advanced										
(U) Communications Systems -				3.840	11.815	12.095	12.275	12.517	Continuing	TBD
Operations and Maintenance,										
AF										

(U) **D. Acquisition Strategy**

All major contracts within this Program Element will be awarded after full and open competition.

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Exhibit R-3, RDT&E Project Cost Analysis												DATE February 2005			
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)						PE NUMBER AND TITLE 0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS)						PROJECT NUMBER AND TITLE 5068 Joint Tactical Radio System (JTRS)			
(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 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</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>															
JTRS WNW/Airborne Network Implementation Requirements	C/FFP	MIT Lincoln Lab, Bedford, MA	2.900	0.000		0.750	Nov-04	0.500	Nov-05	0.300	Nov-06	Continuing	TBD	TBD	
AMF JTRS System Engineering	C/FFP	Various	2.835	0.894	Oct-03	8.614	Oct-04	13.113	Oct-05	13.743	Oct-06	Continuing	TBD	TBD	
Cross-Platform Functional Analyses	C/FFP	ASC/AA, Wright-Patterson AFB, OH	0.986	0.000		0.700	Jan-05	0.000		0.000		0.000	1.686	1.686	
Antenna Development	MIPR	AFRL	0.000	0.000		1.250	Feb-05	0.000		0.000		Continuing	TBD	TBD	
AF JTRS Planning and Implementation	C/FFP	Various	1.796	0.600	Aug-04	0.798	Jan-05	0.745		0.631		Continuing	TBD	TBD	
AMF JTRS Pre-SDD Contracts	C/CPFF	Lockheed Martin, Manassas, VA The Boeing Company, Anaheim, CA	0.000	24.472	Sep-04	21.719	Nov-05	0.000		0.000		Continuing	TBD	TBD	
AMF JTRS SDD Contract	C/CPAF	TBD	0.000	0.000		0.000		97.426	Jan-06	101.440	Nov-06	Continuing	TBD	TBD	
Subtotal Product Development			8.517	25.966		33.831		111.784		116.114		Continuing	TBD	TBD	
Remarks:	AMF JTRS System Engineering includes MITRE, ESC/IN, Risk Reduction/Technology efforts; AF JTRS Implementation includes Lincoln Lab, C130 AMP Antenna Analysis, JPALS Study														
(U) <u>Support</u>															
ESC Acquisition Support	C/FFP	Various	1.537	1.234	Jul-04	1.350	Dec-04	2.100	Dec-05	2.205		Continuing	TBD	TBD	
ESC Specialized Cost Services Support	C/FFP	Tecolote Research, Hanscom AFB, MA	0.657	0.517	Dec-03	0.700	Jan-05	0.735	Jan-05	0.551		Continuing	TBD	TBD	
AFC2ISRC Requirements & Integration Analyses Support	C/FFP	Northrop Grumman, Langley AFB, VA	1.802	0.800	Feb-04	0.608	Feb-05	0.915	Feb-06	0.967	Feb-07	Continuing	TBD	TBD	
INFOSEC Design Support	MIPR	NSA, FT Meade, MD	0.000	0.000		0.535	Dec-05	0.515	Dec-06	0.350	Dec-07	Continuing	TBD	TBD	
Subtotal Support			3.996	2.551		3.193		4.265		4.073		Continuing	TBD	TBD	
Remarks:															
(U) <u>Test & Evaluation</u>															
Test Automation and Test Support	MIPR	JITC	0.053	0.060	Nov-03	0.132	Jan-05	0.113	Dec-05	1.315	Dec-06	Continuing	TBD	TBD	
Test Agency Support	MIPR	Various	0.130	0.135	Mar-04	0.466	Jan-05	4.538	Dec-05	6.317	Dec-06	Continuing	TBD	TBD	
Subtotal Test & Evaluation			0.183	0.195		0.598		4.651		7.632		Continuing	TBD	TBD	
Remarks:															
Project 5068			R-1 Shopping List - Item No. 72-5 of 72-8									Exhibit R-3 (PE 0604280F)			

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Exhibit R-3, RDT&E Project Cost Analysis										DATE	
										February 2005	
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE		
05 System Development and Demonstration (SDD)					0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS)				5068 Joint Tactical Radio System (JTRS)		
(U)	<u>Management</u>										
	AMF (Airborne) JTRS Program Office	C/Varies	ESC/NI4, Hanscom AFB, MA	0.000	0.455	1.339	3.362	3.548	Continuing	TBD	TBD
	AF JTRS Implementation Program Office	C/Varies	ESC/NI4, Hanscom AFB, MA	0.142	0.093	0.138	0.163	0.160	Continuing	TBD	TBD
	Subtotal Management			0.142	0.548	1.477	3.525	3.708	Continuing	TBD	TBD
	Remarks:										
(U)	Total Cost			12.838	29.260	39.099	124.225	131.527	Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2005

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

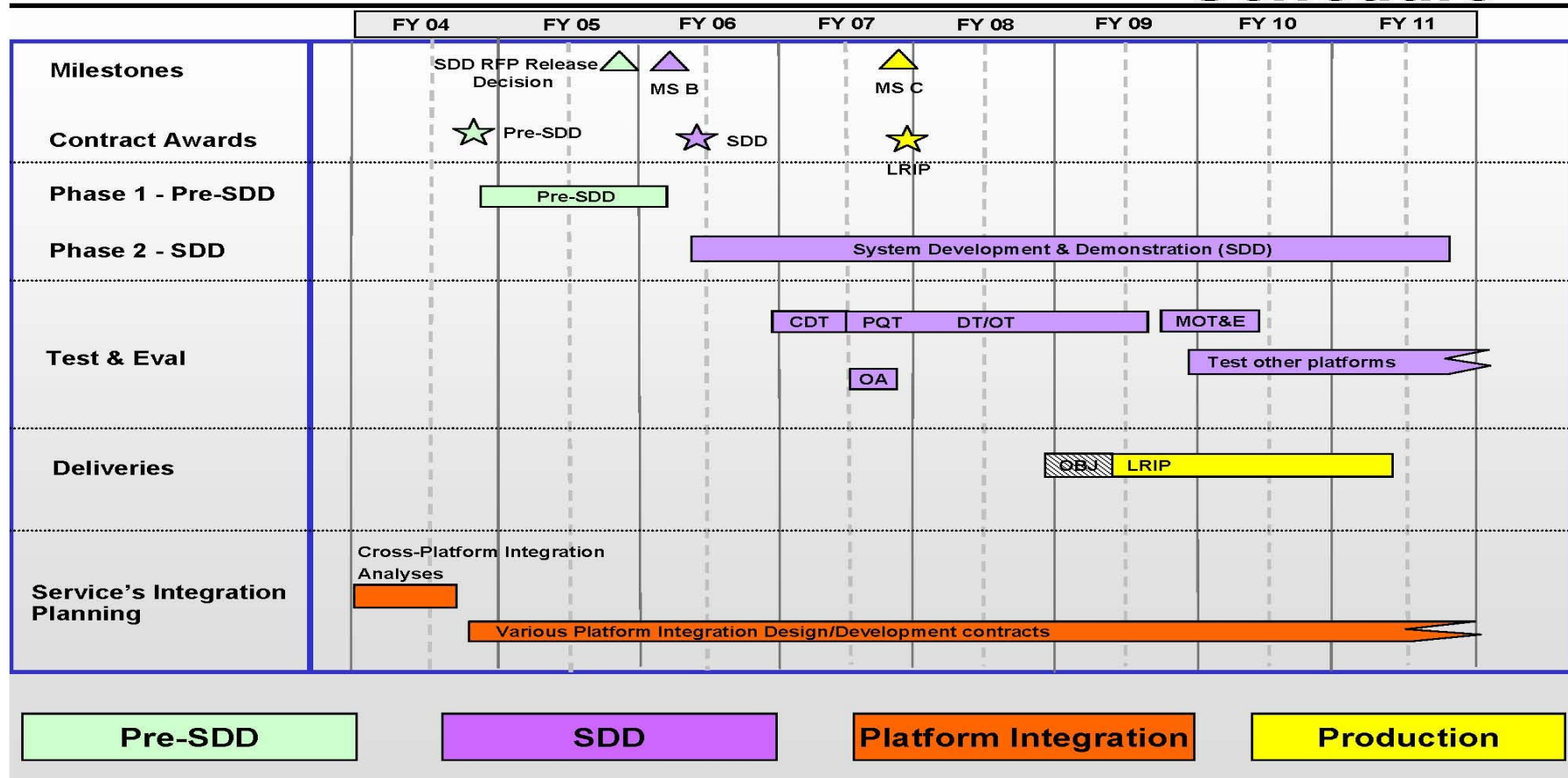
PE NUMBER AND TITLE

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SYSTEMS (JTRS)

PROJECT NUMBER AND TITLE

5068 Joint Tactical Radio System
(JTRS)

AMF JTRS Schedule



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Exhibit R-4a, RDT&E Schedule Detail			DATE February 2005	
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE		
05 System Development and Demonstration (SDD)	0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS)	5068 Joint Tactical Radio System (JTRS)		
(U) <u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) AMF JTRS Cluster (Pre-SDD) Contract Award	4Q			
(U) AMF JTRS Cluster (SDD) RFP Release		4Q		
(U) Milestone B			1Q	
(U) AMF JTRS Cluster (SDD) Contract Award			2Q	
(U) Milestone C				4Q