Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-385

JTRS HMS

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

Joint Tactical Radio System (JTRS) Handheld, Manpack, and Small Form Fit (HMS)

DoD Component

DOD

Joint Participants

US Army; US Navy; US Marine Corps; US Air Force

Army is the lead acquisition component per SECDEF Memo dated August 31, 2009.

Responsible Office

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References

SAR Baseline (Development Estimate)

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated May 19, 2004

Approved APB

Defense Acquisition Executive Approved Acquisition Program Baseline (APB) dated January 16, 2008

Mission and Description

The Joint Tactical Radio System (JTRS) Handheld, Manpack and Small Form Fit (HMS) program is an Acquisition Category 1D program developing the materiel solution to provide Software Communications Architecture (SCA) compliant radios to Warfighters. The JTRS HMS program meets the radio requirements for soldiers and small platforms (such as missiles and ground sensors). JTRS HMS Increment 1 is structured as a single program of record with two phases. Phase 1 will develop Small Form Fit (SFF) SFF-A (1 and 2 Channel), SFF-D and AN/PRC-154 Rifleman Radio for use in a sensitive but unclassified environment (Type 2). Phase 2 will develop the 2 Channel Manpack (MP), SFF-B, SFF-J and 2 Channel Handheld (HH) for use in a classified environment (Type 1). JTRS HMS radios are designed to host SCA compliant software waveforms and applications. Phase 1 radios will host the Soldier Radio Waveform (SRW). Phase 2 will host the SRW, Ultra High Frequency (UHF), High Frequency (HF), Satellite Communications (SATCOM), Single Channel Ground to Air Radio System (SINCGARS) waveforms, Enhanced Position Location and Reporting System (EPLRS) and Mobile User Objective System (MUOS). JTRS HMS will provide new networking capability to the individual Soldiers, Marines, Sailors and Airman and also continue to provide legacy radio interoperability. JTRS HMS will support the Net Centric Transport goal of traffic convergence on a single Internet Protocol (IP) internetwork by running JTRS networking services with the SRW. JTRS HMS provides the Warfighter with a software reprogrammable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The program encompasses specific requirements to support the US Army, US Navy, US Marine Corps, US Air Force and the Special Operations Command (SOCOM) communication needs.

Executive Summary

The JTRS HMS Program achieved a successful Milestone (MS) B decision on April 26, 2004, to begin the development of the JTRS HMS radios. Following full and open competition, a single Cost-Plus-Award Fee (CPAF) contract was awarded on July 16, 2004. In 2008, a new Acquisition Program Baseline (APB) was established. This APB was signed by the Milestone Decision Authority (MDA) on January 12, 2008, and reflects the restructure of the program in accordance with the March 31, 2006, Acquisition Decision Memorandum (ADM). The contract is structured to address Increment 1 as a single program of record with two phases. The PM has revised the program schedule to reflect an incremental approach to Manpack capabilities in order to allow for fielding of initial capabilities sooner. The revised schedule was briefed at the JTRS Executive Steering Board (ESB) on December 03, 2010 to the Principal Deputy Under Secretary of Defense for Acquisition, Technology and Logistics and the Acting Assistant Secretary of Defense for Networks and Information Integration/DoD Chief Information Officer.

The program is currently completing the Increment 1, Phase 1 demonstration phase with the successful conversion from the AN/PRC-154 Limited User Test (LUT)-configuration Rifleman Radio to the Production Rifleman Radio (PRR) configuration—a 2 watt model and 5 watt model. Field Experiment (FE) for the current 5 watt model PRR configuration was successfully completed at Ft. Monmouth, NJ, in October 2010, and the Contractor Developmental Test (CDT) in preparation for the Verification of Correction of Deficiencies (VCD) scheduled to begin January 24, 2011 has started. Development nears completion while CDT continues in preparation for Governmental Development Testing (GDT). Security Verification Test (SVT) is schedule to complete in March 2011, which will complete the development phase for the Rifleman Radio. The Initial Operational Test and Evaluation (IOT&E) is scheduled for the third quarter of FY2012 in conjunction with the Warfighter Information Network-Tactical (WIN-T) IOT&E.

The Increment 1, Phase 2 demonstration phase continues with the completion of the AN/PRC-155 Manpack Radio Operating Environment (OE) 5.0 Formal Qualification Test (FQT) implementing Type 1 Information Security (INFOSEC). Field Experiment (FE), as well as preparation and training, continues in preparation for the Manpack Customer Test scheduled to begin January 31, 2011, followed by a Network Excursion schedule to begin February 21, 2011. Contractor and Government Developmental Testing continues in support of Manpack Limited User Test (LUT) scheduled for June through July 2011. The Phase 2 In Process Review (IPR) decision is scheduled for February 2012.

JTRS HMS participated in the Brigade Combat Team Integration Exercise (BCTIE) staged at White Sands Missile Range in New Mexico in July 2010. The Exercise was designed to show the increased effectiveness of brigades equipped with high-throughput wireless networking to the tactical edge. JTRS HMS PRR 2 watt models were used in standalone mode and also integrated into the Land Warrior Systems to provide communications to the tactical edge. JTRS HMS Manpack radios (AN/PRC-155) were used in dismounted mode and also integrated into command posts. Range was extended through the integration of an aerial tier using JTRS HMS Rifleman radios embedded into the aerial assets, demonstrating the usability and functionality of key equipment in rugged desert and mountain environments. Rifleman and Manpack radios successfully provided voice and data connectivity between soldiers and leaders, exceeding point to point range requirements and achieving upwards of 30km when using the aerial relays. The HMS Rifleman and Manpack performed exceedingly well in both voice and data communications between individual soldiers. The PRRs showed an improvement in battery life over the Rifleman Radio used at the Limited User Test (LUT), exceeding the current requirement of 8 hours on a single charge. Demonstrated performance will be reported once official test results are received.

The Mobile User Objective System (MUOS) HMS Power Amplifier (MHPA) Critical Design Review (CDR) for the Manpack radio hardware was held successfully at the contractor site in December 2010. There will be a delta CDR for the MUOS waveform porting to the Manpack radio in the fourth quarter of FY2011. HMS plans to port the initial MUOS waveform release in the fourth quarter of FY2011, followed by a complete MUOS waveform Formal Qualification Test (FQT) in the first quarter of FY2012.

The JTRS HMS program continues to deliver developmental radios. As of December 2010, the JTRS HMS

contractor delivered 533 Engineering Developmental Models (EDMs) (213 SFF-A, 12 SFF-C, 21 SFF-D, 3 SFF-J, 163 AN/PRC-154 RR sets (Limited User Test (LUT) configuration), 56 AN/PRC-154 RR sets (Production RR (PRR) configuration sets), and 65 AN/PRC-155 Manpack radios. Current configuration RRs continue to be delivered in quantities required to support the upcoming RR VCD and in support of a MS C decision in July 2011. Manpack EDM deliveries will continue to meet quantities required to support the upcoming Manpack Customer Test and will increase to support the Manpack LUT and IOTE.

The program has experienced software (SW) issues that have caused schedule slips and cost growth. Currently, the Operating Environment (OE) for both Phase 1 and Phase 2 have had successful Formal Qualification Tests (FQT). Integration challenges are being managed and the program is testing the systems in Operational environments. Since the program has overcome the major SW challenges, there are no significant software-related issues with the program at this time.

Threshold Breaches

APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☑
	Procurement	☑
	MILCON	☐
	Acq O&M	☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

Schedule Breach
Schedule slips are due to software and hardware integration challenges. Following the April 2009 Limited User Test (LUT), there were on-going software development deficiencies that needed to be corrected and verified in subsequent operational tests. The Verification of Correction of Deficiencies is scheduled for the second quarter of FY2011.

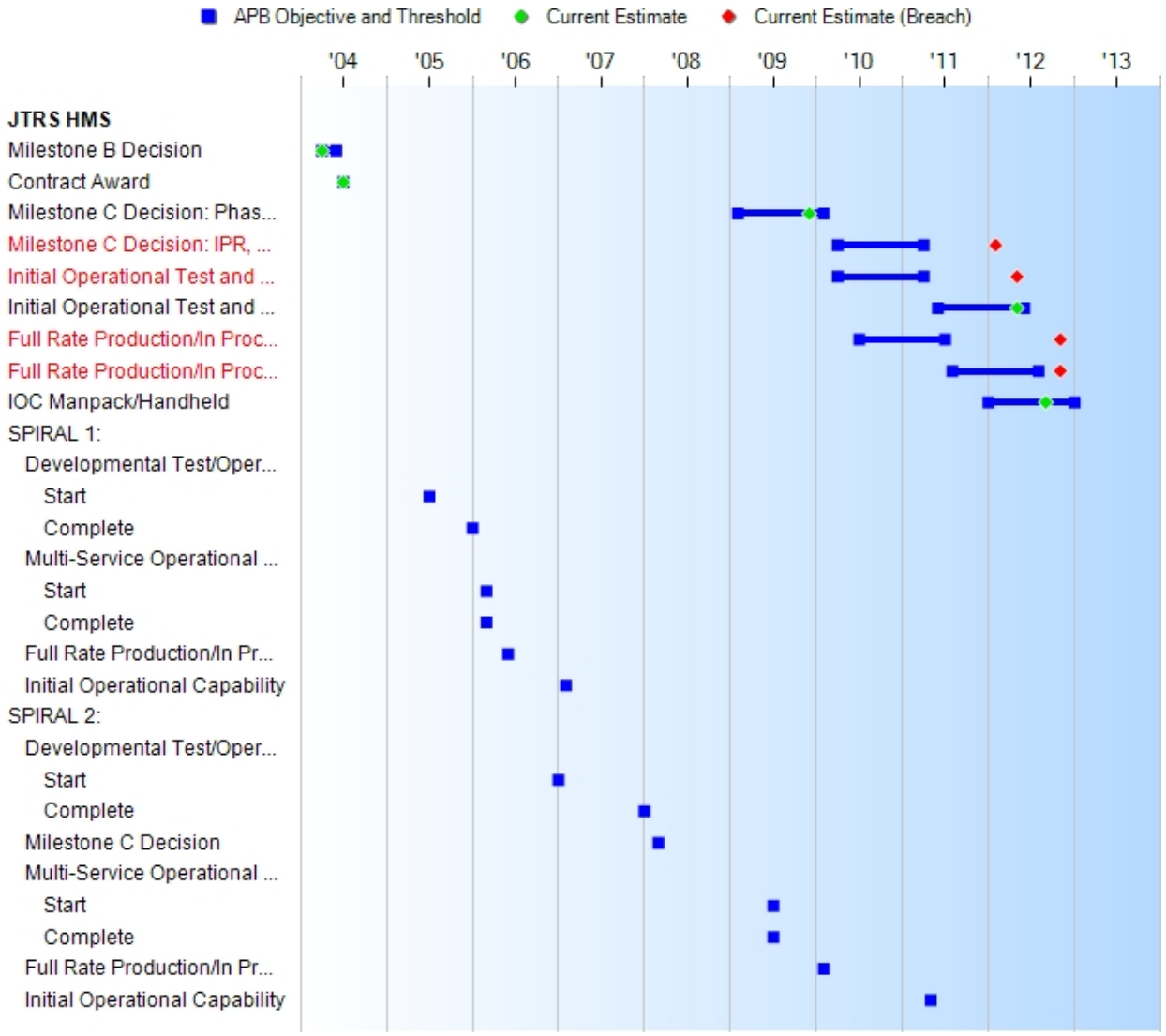
A Program Deviation Report (PDR) will be submitted to address the Phase 1 and Phase 2 schedule breaches.

Cost Breach
RDT&E total cost increase is due to the addition of funds to complete the baseline program and also funding for additional capabilities added to the program, which include a HMS radio redesign to meet Nett Warrior requirements, Shadow Integration, Line of Sight (LoS) with Air Traffic Control (ATC) Waveform porting and Over The Air Rekeying/Over The Air Zeroizing (OTAR/OTAZ).

Procurement total cost increase is due to an increase in quantity requirement as part of the JTRS HMS Increment 1 reset. This has caused the Total Procurement required to increase.

A PDR will be submitted to address the cost threshold breaches.

Schedule


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
JTRS HMS
Milestone B Decision
Contract Award
Milestone C Decision: Phas...
Milestone C Decision: IPR, ...
Initial Operational Test and ...
Initial Operational Test and ...
Full Rate Production/In Proc...
Full Rate Production/In Proc...
IOC Manpack/Handheld
SPIRAL 1:
Developmental Test/Oper...
Start
Complete
Multi-Service Operational ...
Start
Complete
Full Rate Production/In Pr...
Initial Operational Capability
SPIRAL 2:
Developmental Test/Oper...
Start
Complete
Milestone C Decision
Multi-Service Operational ...
Start
Complete
Full Rate Production/In Pr...
Initial Operational Capability

Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	
Milestone B Decision	APR 2004	APR 2004	JUN 2004	APR 2004	
Contract Award	JUL 2004	JUL 2004	JUL 2004	JUL 2004	
Milestone C Decision: Phase 1 SFF-A (1 and 2 Channel)	N/A	FEB 2009	FEB 2010	DEC 2009	(Ch-1)
Milestone C Decision: IPR, Phase 2 (Manpack, Handheld, SFF-B, SFF-C, SFF-D, SFF-I, SFF-J)	N/A	APR 2010	APR 2011	**FEB 2012**[1]	(Ch-2)
Initial Operational Test and Evaluation: Phase 1 SFF-A (1 and 2 Channel))	N/A	APR 2010	APR 2011	**MAY 2012**[1]	(Ch-3)
Initial Operational Test and Evaluation: Phase 2 (SFF, Manpack, Handheld, SFF-B, SFF C,	N/A	JUN 2011	JUN 2012	MAY 2012	
Full Rate Production/In Process Reviews: Phase 1 SFF-A (1 and 2 Channel)	N/A	JUL 2010	JUL 2011	**NOV 2012**[1]	(Ch-4)
Full Rate Production/In Process Reviews: Phase 2 (Manpack, Handheld, SFF-B, SFF-C, SFF-D SFF-I, SFF-J)	N/A	AUG 2011	AUG 2012	**NOV 2012**[1]	(Ch-5)
IOC Manpack/Handheld	N/A	JAN 2012	JAN 2013	SEP 2012	(Ch-6)
SPIRAL 1:					
Developmental Test/Operational Test					
Start	JUL 2005	N/A	N/A	N/A	
Complete	JAN 2006	N/A	N/A	N/A	
Multi-Service Operational Test and Evaluation					
Start	MAR 2006	N/A	N/A	N/A	
Complete	MAR 2006	N/A	N/A	N/A	
Full Rate Production/In Process Review (Manpack only)	JUN 2006	N/A	N/A	N/A	
Initial Operational Capability	FEB 2007	N/A	N/A	N/A	
SPIRAL 2:					
Developmental Test/Operational Test					
Start	JAN 2007	N/A	N/A	N/A	
Complete	JAN 2008	N/A	N/A	N/A	
Milestone C Decision	MAR 2008	N/A	N/A	N/A	
Multi-Service Operational Test and Evaluation					
Start	JUL 2009	N/A	N/A	N/A	
Complete	JUL 2009	N/A	N/A	N/A	
Full Rate Production/In Process Review (All Form Fit)	FEB 2010	N/A	N/A	N/A	
Initial Operational Capability	MAY 2011	N/A	N/A	N/A	

[1] *APB Breach*

Acronyms And Abbreviations

IOC - Initial Operational Capability
IPR - In Process Review
SFF - Small Form Fit

Change Explanations

(Ch-1) MS C (Phase 1) Current Estimate moved from AUG 2010 to DEC 2009 based on SFF-A completion of its Milestone C with the host platform during the E-IBCT Milestone C in DEC 2009.

(Ch-2) MS C (Phase 2) Current Estimate moved from FEB 2011 to FEB 2012 based on software and hardware integration challenges that extended the contractual efforts.

(Ch-3) IOTE (Phase 1) Current Estimate moved from NOV 2010 to May 2012 based on software and hardware integration challenges.

(Ch-4) FRP/IPR (Phase 1) Current Estimate moved from MAY 2011 to NOV 2012 based on software and hardware integration challenges which slipped IOTE. IOTE results will be used to support the FRP decision.

(Ch-5) FRP/IPR (Phase 2) Current Estimate moved from OCT 2012 to NOV 2012 based on software and hardware integration challenges.

(Ch-6) IOC for Manpack/Handheld moved from DEC 2012 to SEP 2012 based on definitized schedule in the current Capabilities Production Document (CPD).

Memo

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Internal growth capability	Open System Architecture IAW JTA; Modular, Scaleable, Flexible Form Factors	Open System Architecture in accordance with DISR, Modular, Scaleable, Flexible Form Factors	Open System Architecture in accordance with DISR; Modular, Scaleable, Flexible Form Factors	TBD	Open System Architecture in accordance with DISR, Modular, Scalable, Flexible Form Factors
JTRS Set Modes/Capabilities and Configuration and Reconfiguration via Software	By operators in their operational environment	By operators in their operational environment	By operators in their operational environment	TBD	By operators in their operational environment
Operational Availability A(o)	0.99 (Channel	0.99 (Channel)	0.96 (Channel	TBD	0.96 (Channel)
Operation on designated no. of channels at the same time. All JTRS sets will include GPS except some of Small Form Fit Sets					
Spiral 2:					
Hand-Held	3 Channel	1 and 3 Channel	2 Channel	TBD	2 Channel
Man Pack	4 Channel	4 Channel	2 Channel	TBD	2 Channel
Small Form Fit	3 Channel	1 and 3 Channel	1 and 2 Channel	TBD	1 and 2 Channel
Spiral 1:					
Man Pack	4 Channel	N/A	N/A	TBD	N/A
Multi-channel routing and retransmission	Objective waveforms that are same in mode (voice, data or video) and use like data rates and operate at permissible security classification	Objective waveforms that are same in mode (voice, data or video) and use like data rates and operate at permissible security classification	KPP waveforms that are same in mode (voice, data or video) and use like data rates and operate at permissible security classification	TBD	KPP waveforms that are same in mode (voice, data or video) and use like data rates and operate at permissible security classification

	levels	levels	levels		levels
Scaleable Networking Services	Maritime/Fixed Domain	All Domains	All Domains	TBD	All Domains
Network Extension/Coverage	Across organization boundaries	Across organization boundaries	Across organization boundaries	TBD	Across organization boundaries
JTRS System Network Interoperability	Inter-operate with Allied/Coalition and commercial networks: satisfy 100 % of top-level IERS	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements in the Joint Integrated architecture	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint Integrated architecture	TBD	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint Integrated architecture
Net Ready (NR) capability	N/A	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: 1) DISR mandated GIG IT	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: 1) DISR mandated	TBD	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: 1) DISR mandated GIG IT

		standards and profiles identified in the TV1 2) DISR mandated GIG KIPs identified in the KIP declaration (Table 31) 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated	GIG IT standards and profiles identified in the TV1 2) DISR mandated GIG KIPs identified in the KIP declaration (Table 31) 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an IATO by the DAA 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system		standards and profiles identified in the TV1 2) DISR mandated GIG KIPs identified in the KIP declaration (Table 31) 3) NCOW RM Enterprise Services 4) Information assurance requirements including availability, integrity, authentica-tion, confidentiality, and non-repudiation, and issuance of an ATO by the DAA 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated

		architecture views	integrated architecture views		architecture views
Support Critical Waveforms	N/A	WF # 14 - VHF FM WF# 17 – VHF/UHF FM LMR (APCO 25) WF # 19 – UHF AM/FM PSK Military Tactical WF #27 – MUOS-CAI WF #28 – Cellular Radio and PCS WF # 30 – Mobile Satellite Service (MSS) WF #32 – Bowman Waveform WF #33 - Range Instrumentat-ion Waveform (RIW)	WF #1 - SINCGARS ESIP (MP, HH, SFF-B/I/J only) WF #3 - UHF DAMA SATCOM (MP only) WF #4 - EPLRS (MP, HH, SFF-B/I only) WF #5 - SRW (all HMS sets) WF # 7 - UHF SATCOM (MP only) WF # 9 - HF Single Sideband w/ALE (MP only)	TBD	WF #1 - SINCGARS ESIP (MP, HH, SFF-B/J only) WF #3 - UHF DAMA SATCOM (MP only) WF #4 - EPLRS (MP, HH, SFF-B only) WF #5 - SRW (all HMS sets) WF #7 - UHF SATCOM (MP only) WF #9 - HF Single Sideband w/ALE (MP only) WF #27 - MUOS (MP only)
Support critical waveforms					
Spiral 1:					
Man Pack	WF's 1, 2, 3, 4, 5, 6, 7, 9, 13, 14, 15, 16, 17, 18, 19, 22, 25, 27, 28, 30 and 31	N/A	N/A	N/A	N/A
Spiral 2:					
Hand-Held	WF's 1, 2, 4, 5, 9, 14, 16, 17, 25, 26, 27 and 28	N/A	N/A	N/A	N/A
Man Pack	WF's 1, 2, 3, 4, 5, 6, 7, 9, 13, 14, 15, 16, 17, 18, 19, 22, 25, 27, 28, 30	N/A	N/A	N/A	N/A

	and 31				
Small Form Fit	WF's 1, 2, 4, 5, 17, 25, 27 and 28	N/A	N/A	N/A	N/A

Requirements Source: Defense Acquisition Executive (DAE) Approved Program Acquisition Baseline (APB) dated January 16, 2008

Acronyms And Abbreviations

ALE - Automatic Link Establishment
ATO - Approval to Operate
CAI - Common Air Interface
DAA - Designated Approval Authority
DISR - Department of Defense Information Technology Standards Registry
DOD - Department of Defense
FM - Frequency Modulated
GIG - Global Information Grid
GPS - Global Positioning System
HF - High Frequency
HH - Handheld
IATO - Interim Approval to Operate
IERs - Information Exchange Requirements
IT - Information Technology
JTRS - Joint Tactical Radio System
KIP - Key Interface Profiles
KPP - Key Performance Parameter
MP - Manpack
MUOS - Mobile User Objective System
NCOW - Net-Centric Operations and Warfare
NCOW RM - Net-Centric Operations and Warfare Reference Model
RIW - Range Instrumentation Waveform
SATCOM - Satellite Communications
SFF - Small Form Fit
SRW - Soldier Radio Waveform
UHF - Ultra High Frequency
VHF - Very High Frequency
WF - Waveform

Change Explanations

None

Memo

Increment 1 JTRS Handheld, Manpack, and Small Form Fit (HMS) Performance Requirements for Increment 1 are based on Joint Requirements Oversight Council Memorandum (JROCM) 131-06 dated June 29, 2006, and JROCM 171-06 dated August 28, 2006. The JROCM 131-06 mandated the Net Ready (NR) KPP and JROCM 171-06 approved the Operational Requirements Document (ORD) Version 3.2.1 NR KPP language as required by Chairman of the Joint Chiefs of Staff (CJCSI) 6212.01D dated March 8, 2006.

Demonstrated performance will be reported once official test results are received.

Waveforms:
WF1 - Single Channel Ground and Airborne Radio System (SINCGARS) Enhanced SINCGARS Improvement

Program (ESIP) (Very High Frequency-Frequency Modulation (VHF-FM) Military Tactical Anti-jam (AJ))
WF2 - HAVE QUICK II
WF3 - Ultra High Frequency (UHF) Satellite Communications (SATCOM) Military (181-182-183 Demand Assigned Multiple Access (DAMA))
WF4 - Enhanced Position Location Reporting System (EPLRS)
WF5 - Wideband Networking Waveform (WNW)
WF6 - Link 16/Tactical Digital Information Link (TADIL)-J
WF7 - UHF SATCOM Military Protocol (184)
WF9 - HF Single Side Band (SSB) with Automatiac Link Establishment (ALE)
WF13 - HF Air Traffic Control (ATC) Data Link
WF14 - VHF-FM Military Tactical
WF15 - VHF-Amplitude Modulation (AM) Air Traffic Control (ATC) (8.33KHz)
WF16 - VHF-AM ATC (25KHz)
WF17 - VHF/UHF FM Land Mobile Radio (FM LMR)
WF18 - VHF ATC Data Link Next Generation Communication (NEXCOM)
WF19 - UHF AM/FM Phase Shift Keyed (PSK) Military Tactical
WF22 - Second generation Anti-jam Tactical UHF Radio for North Atlantic Treaty Organization (NATO) (SATURN) (UHF PSK AJ NATO)
WF25 - Soldier Radio and Wireless Local Area Network (WLAN) and Advanced Capability
WF26 - Collection of Broadcasts from Remote Assets (COBRA)
WF27 - Mobile User Objective System (MUOS)-Common Air Interface (CAI)
WF28 - Cellular Radio & Personal Communications Service (PCS)
WF30 - Mobile Satellite Service (MSS)
WF31 - Integrated Broadcast Service (IBS) - M
WF32 - Bowman (VHF, UHF & HF) Waveform
WF33 - Range Instrumentation Waveform (RIW)

Track To Budget

RDT&E

APPN 1319	BA 05	PE 0604280N	(Navy)	
	Project 3075	Project 3075		
APPN 2040	BA 05	PE 0604280A	(Army)	
	Project 162	Project 162	(Shared)	
APPN 2040	BA 05	PE 0604805A	(Army)	
	Project 615	Project 615	(Shared)	(Sunk)
	Project 61A	Project 61A		(Sunk)
APPN 3600	BA 05	PE 0604280F	(Air Force)	
	Project 655068	Project 5068	(Shared)	

The JTRS RDT&E funding was consolidated under one Navy Program Element (PE 0604280N) in FY2007-2012 to consolidate execution under one Military Department (MILDEP). For all budget out years (currently FY2013-2016), each MILDEP provides funding for one third of all JTRS common development efforts. As a result, the Army, Air Force and Navy JTRS RDT&E Budgets (PEs 0604280A/0604280F/0604280N, respectively) capture the entire JTRS Development funding profile through FY2016.

PE# 0604805A Projects 615 and 61A represent sunk costs.

Procurement

APPN 1109	BA 04	PE 0206313M	(Navy)
	ICN 4633 (Marine Corps)	Marine Corps	(Shared)
APPN 1810	BA 02	PE 0204163N	(Navy)
	ICN 3057	Navy	(Shared)
APPN 2035	BA 02	PE 0310700A	(Army)
	ICN B90210	JTRS HMS	
APPN 2035	BA 03		(Army)

	ICN R80501	Ground Soldier System	(Shared)
APPN 3010	BA 05	PE 0207423F	(Air Force)
	ICN OTHACF	Air Force	
APPN 3080	BA 03	PE 0207423F	(Air Force)
	ICN 8371	Air Force	(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2004 $M			BY2004 $M	TY $M		
Appropriation	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	465.0	729.8	802.8	**1048.8** [1]	489.0	820.5	1193.5
Procurement	8104.0	1935.6	2129.2	**3545.7** [1]	10228.0	2619.9	4617.9
Flyaway	7047.6	--	--	2458.9	8879.2	--	3164.9
Recurring	7047.6	--	--	2451.3	8879.2	--	3155.5
Non Recurring	0.0	--	--	7.6	0.0	--	9.4
Support	1056.4	--	--	1086.8	1348.8	--	1453.0
Other Support	291.5	--	--	842.9	363.9	--	1139.0
Initial Spares	764.9	--	--	243.9	984.9	--	314.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	8569.0	2665.4	N/A	4594.5	10717.0	3440.4	5811.4

[1] ***APB Breach***

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	1060	410	582
Procurement	327614	95551	221396
Total	328674	95961	221978

Unit of measure is an HMS radio, which includes multiple variants (Handheld, Manpack, or various Small Form Fits).

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2012 President's Budget / December 2010 SAR (TY$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	789.1	69.4	179.1	88.2	49.0	14.8	3.9	0.0	1193.5
Procurement	0.0	73.0	457.2	411.3	433.1	424.7	495.5	2323.1	4617.9
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2012 Total	789.1	142.4	636.3	499.5	482.1	439.5	499.4	2323.1	5811.4
PB 2011 Total	836.0	244.1	334.4	428.0	411.7	394.7	419.8	2171.7	5240.4
Delta	-46.9	-101.7	301.9	71.5	70.4	44.8	79.6	151.4	571.0

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	582	0	0	0	0	0	0	0	0	582
Production	0	0	1705	16880	18149	6383	17314	18139	142826	221396
PB 2012 Total	582	0	1705	16880	18149	6383	17314	18139	142826	221978
PB 2011 Total	410	3702	4186	10896	13949	13789	13486	23136	132407	215961
Delta	172	-3702	-2481	5984	4200	-7406	3828	-4997	10419	6017

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2007	--	--	--	--	--	--	132.9
2008	--	--	--	--	--	--	150.6
2009	--	--	--	--	--	--	127.1
2010	--	--	--	--	--	--	135.9
2011	--	--	--	--	--	--	69.4
2012	--	--	--	--	--	--	179.1
2013	--	--	--	--	--	--	12.5
2014	--	--	--	--	--	--	2.8
2015	--	--	--	--	--	--	0.3
Subtotal	**252**	**--**	**--**	**--**	**--**	**--**	**810.6**

Annual Funding BY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2007	--	--	--	--	--	--	120.1
2008	--	--	--	--	--	--	133.7
2009	--	--	--	--	--	--	111.5
2010	--	--	--	--	--	--	117.9
2011	--	--	--	--	--	--	59.4
2012	--	--	--	--	--	--	150.9
2013	--	--	--	--	--	--	10.4
2014	--	--	--	--	--	--	2.3
2015	--	--	--	--	--	--	0.2
Subtotal	**252**	**--**	**--**	**--**	**--**	**--**	**706.4**

Annual Funding TY$
2040 | RDT&E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2004	--	--	--	--	--	--	21.9
2005	--	--	--	--	--	--	96.1
2006	--	--	--	--	--	--	124.6
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	63.3
2014	--	--	--	--	--	--	43.4
2015	--	--	--	--	--	--	14.2
2016	--	--	--	--	--	--	3.9
Subtotal	**311**	**--**	**--**	**--**	**--**	**--**	**367.4**

Annual Funding BY$
2040 | RDT&E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2004	--	--	--	--	--	--	21.4
2005	--	--	--	--	--	--	91.3
2006	--	--	--	--	--	--	115.1
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	52.2
2014	--	--	--	--	--	--	35.2
2015	--	--	--	--	--	--	11.3
2016	--	--	--	--	--	--	3.1
Subtotal	**311**	**--**	**--**	**--**	**--**	**--**	**329.6**

Annual Funding TY$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2013	--	--	--	--	--	--	12.4
2014	--	--	--	--	--	--	2.8
2015	--	--	--	--	--	--	0.3
Subtotal	**19**	**--**	**--**	**--**	**--**	**--**	**15.5**

Annual Funding BY$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2013	--	--	--	--	--	--	10.3
2014	--	--	--	--	--	--	2.3
2015	--	--	--	--	--	--	0.2
Subtotal	**19**	**--**	**--**	**--**	**--**	**--**	**12.8**

Annual Funding TY$
1109 | Procurement | Procurement, Marine Corps

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2012	43	2.5	--	--	2.5	0.4	2.9
2013	44	2.3	--	--	2.3	0.5	2.8
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	2369	65.2	--	--	65.2	9.1	74.3
2018	2158	59.5	--	--	59.5	12.9	72.4
2019	2098	56.6	--	--	56.6	12.6	69.2
2020	2170	60.7	--	--	60.7	18.0	78.7
Subtotal	**8882**	**246.8**	**--**	**--**	**246.8**	**53.5**	**300.3**

Annual Funding BY$
1109 | Procurement | Procurement, Marine Corps

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2012	43	2.1	--	--	2.1	0.3	2.4
2013	44	1.9	--	--	1.9	0.4	2.3
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	2369	49.9	--	--	49.9	7.0	56.9
2018	2158	44.8	--	--	44.8	9.7	54.5
2019	2098	41.9	--	--	41.9	9.3	51.2
2020	2170	44.2	--	--	44.2	13.1	57.3
Subtotal	**8882**	**184.8**	**--**	**--**	**184.8**	**39.8**	**224.6**

Annual Funding TY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2011	50	3.8	--	--	3.8	1.4	5.2
2012	47	2.7	--	--	2.7	0.6	3.3
2013	60	3.2	--	--	3.2	0.6	3.8
2014	7	0.4	--	--	0.4	0.3	0.7
2015	12	0.6	--	--	0.6	0.4	1.0
2016	10	0.5	--	--	0.5	0.4	0.9
2017	283	14.2	--	--	14.2	2.4	16.6
2018	300	15.1	--	--	15.1	3.4	18.5
2019	335	17.1	--	--	17.1	3.5	20.6
2020	373	19.2	--	--	19.2	4.9	24.1
Subtotal	**1477**	**76.8**	**--**	**--**	**76.8**	**17.9**	**94.7**

Annual Funding BY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2011	50	3.2	--	--	3.2	1.2	4.4
2012	47	2.3	--	--	2.3	0.5	2.8
2013	60	2.6	--	--	2.6	0.5	3.1
2014	7	0.3	--	--	0.3	0.3	0.6
2015	12	0.5	--	--	0.5	0.3	0.8
2016	10	0.4	--	--	0.4	0.3	0.7
2017	283	10.9	--	--	10.9	1.8	12.7
2018	300	11.4	--	--	11.4	2.5	13.9
2019	335	12.7	--	--	12.7	2.6	15.3
2020	373	14.0	--	--	14.0	3.6	17.6
Subtotal	**1477**	**58.3**	**--**	**--**	**58.3**	**13.6**	**71.9**

Annual Funding TY$
2035 | Procurement | Other Procurement, Army

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2011	1655	37.1	--	4.6	41.7	26.1	67.8
2012	16453	354.3	--	0.1	354.4	72.3	426.7
2013	17203	268.5	--	--	268.5	77.9	346.4
2014	5411	278.3	--	--	278.3	83.7	362.0
2015	16795	296.8	--	--	296.8	93.3	390.1
2016	17545	368.1	--	0.9	369.0	102.2	471.2
2017	11738	73.1	--	3.8	76.9	89.5	166.4
2018	16474	102.2	--	--	102.2	77.1	179.3
2019	17203	107.7	--	--	107.7	78.7	186.4
2020	16175	102.8	--	--	102.8	81.1	183.9
2021	15448	95.6	--	--	95.6	75.3	170.9
2022	15334	94.5	--	--	94.5	76.7	171.2
2023	13637	86.9	--	--	86.9	78.1	165.0
2024	9283	66.6	--	--	66.6	77.7	144.3
2025	4016	39.4	--	--	39.4	71.0	110.4
2026	3169	18.7	--	--	18.7	48.6	67.3
2027	2501	15.7	--	--	15.7	46.5	62.2
2028	317	5.5	--	--	5.5	22.9	28.4
Subtotal	**200357**	**2411.8**	**--**	**9.4**	**2421.2**	**1278.7**	**3699.9**

Annual Funding BY$
2035 | Procurement | Other Procurement, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2011	1655	31.5	--	3.9	35.4	22.1	57.5
2012	16453	295.9	--	0.1	296.0	60.4	356.4
2013	17203	220.5	--	--	220.5	64.0	284.5
2014	5411	224.8	--	--	224.8	67.6	292.4
2015	16795	235.7	--	--	235.7	74.1	309.8
2016	17545	287.4	--	0.7	288.1	79.8	367.9
2017	11738	56.1	--	2.9	59.0	68.8	127.8
2018	16474	77.2	--	--	77.2	58.2	135.4
2019	17203	79.9	--	--	79.9	58.5	138.4
2020	16175	75.0	--	--	75.0	59.2	134.2
2021	15448	68.6	--	--	68.6	54.1	122.7
2022	15334	66.7	--	--	66.7	54.1	120.8
2023	13637	60.3	--	--	60.3	54.2	114.5
2024	9283	45.4	--	--	45.4	53.1	98.5
2025	4016	26.4	--	--	26.4	47.7	74.1
2026	3169	12.3	--	--	12.3	32.1	44.4
2027	2501	10.2	--	--	10.2	30.1	40.3
2028	317	3.5	--	--	3.5	14.6	18.1
Subtotal	**200357**	**1877.4**	**--**	**7.6**	**1885.0**	**952.7**	**2837.7**

Annual Funding TY$
3080 | Procurement | Other Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2012	310	19.9	--	--	19.9	3.3	23.2
2013	761	48.6	--	--	48.6	7.6	56.2
2014	900	56.6	--	--	56.6	12.2	68.8
2015	442	22.0	--	--	22.0	9.9	31.9
2016	584	14.1	--	--	14.1	9.2	23.3
2017	3266	107.5	--	--	107.5	15.7	123.2
2018	1525	63.2	--	--	63.2	17.4	80.6
2019	1800	65.4	--	--	65.4	15.2	80.6
2020	402	9.1	--	--	9.1	9.1	18.2
Subtotal	**9990**	**406.4**	**--**	**--**	**406.4**	**99.6**	**506.0**

Annual Funding BY$
3080 | Procurement | Other Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2012	310	16.8	--	--	16.8	2.8	19.6
2013	761	40.4	--	--	40.4	6.4	46.8
2014	900	46.3	--	--	46.3	10.0	56.3
2015	442	17.7	--	--	17.7	8.0	25.7
2016	584	11.2	--	--	11.2	7.2	18.4
2017	3266	83.6	--	--	83.6	12.2	95.8
2018	1525	48.3	--	--	48.3	13.3	61.6
2019	1800	49.2	--	--	49.2	11.4	60.6
2020	402	6.7	--	--	6.7	6.8	13.5
Subtotal	**9990**	**320.2**	**--**	**--**	**320.2**	**78.1**	**398.3**

Annual Funding TY$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2012	27	0.7	--	--	0.7	0.4	1.1
2013	81	1.8	--	--	1.8	0.3	2.1
2014	65	1.3	--	--	1.3	0.3	1.6
2015	65	1.3	--	--	1.3	0.4	1.7
2016	--	--	--	--	--	0.1	0.1
2017	452	8.6	--	--	8.6	1.8	10.4
Subtotal	**690**	**13.7**	**--**	**--**	**13.7**	**3.3**	**17.0**

Annual Funding BY$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2012	27	0.6	--	--	0.6	0.3	0.9
2013	81	1.5	--	--	1.5	0.2	1.7
2014	65	1.0	--	--	1.0	0.3	1.3
2015	65	1.0	--	--	1.0	0.3	1.3
2016	--	--	--	--	--	0.1	0.1
2017	452	6.5	--	--	6.5	1.4	7.9
Subtotal	**690**	**10.6**	**--**	**--**	**10.6**	**2.6**	**13.2**

Low Rate Initial Production

At the Milestone B, LRIP of not to exceed 10 percent of the Full Rate Production was approved. Specific quantity amounts will be identified at the Milestone C.

Foreign Military Sales

None.

Nuclear Cost

None.

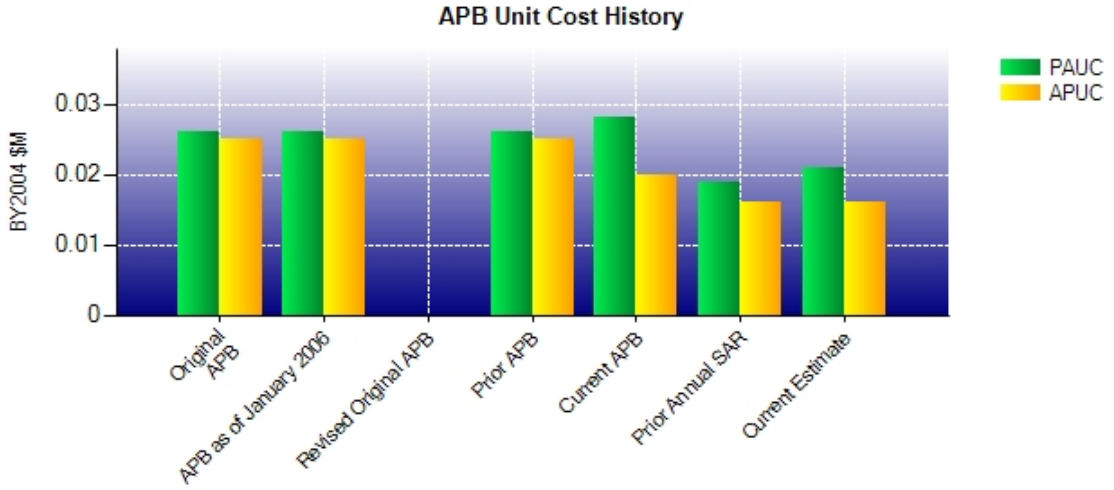
Unit Cost

Unit Cost Report

Unit Cost	BY2004 $M Current UCR Baseline (JAN 2008 APB)	BY2004 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	2665.4	4594.5	
Quantity	95961	221978	
Unit Cost	0.028	0.021	-25.00
Average Procurement Unit Cost (APUC)			
Cost	1935.6	3545.7	
Quantity	95551	221396	
Unit Cost	0.020	0.016	-20.00

Unit Cost	BY2004 $M Original UCR Baseline (MAY 2004 APB)	BY2004 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	8569.0	4594.5	
Quantity	329574	221978	
Unit Cost	0.026	0.021	-19.23
Average Procurement Unit Cost (APUC)			
Cost	8104.0	3545.7	
Quantity	328514	221396	
Unit Cost	0.025	0.016	-36.00

Unit Cost History



		BY2004 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	MAY 2004	0.026	0.025	0.033	0.031
APB as of January 2006	MAY 2004	0.026	0.025	0.033	0.031
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	MAY 2004	0.026	0.025	0.033	0.031
Current APB	JAN 2008	0.028	0.020	0.036	0.027
Prior Annual SAR	DEC 2009	0.019	0.016	0.024	0.020
Current Estimate	DEC 2010	0.021	0.016	0.026	0.021

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.033	0.002	0.008	0.003	0.000	-0.020	0.000	0.000	-0.007	0.026

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.031	0.002	0.008	0.003	0.000	-0.023	0.000	0.000	-0.010	0.021

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	APR 2004	N/A	APR 2004
Milestone C	N/A	MAR 2008	N/A	N/A
IOC	N/A	FEB 2007	N/A	N/A
Total Cost (TY $M)	N/A	10717.0	N/A	5811.4
Total Quantity	N/A	328674	N/A	221978
Prog. Acq. Unit Cost (PAUC)	N/A	0.033	N/A	0.026

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	489.0	10228.0	--	10717.0
Previous Changes				
Economic	+13.0	+544.2	--	+557.2
Quantity	--	-1937.8	--	-1937.8
Schedule	--	+586.6	--	+586.6
Engineering	--	--	--	--
Estimating	+364.0	-4953.9	--	-4589.9
Other	--	--	--	--
Support	--	-92.7	--	-92.7
Subtotal	+377.0	-5853.6	--	-5476.6
Current Changes				
Economic	+0.3	-8.3	--	-8.0
Quantity	+7.4	+176.7	--	+184.1
Schedule	--	+21.1	--	+21.1
Engineering	--	--	--	--
Estimating	+319.8	-64.8	--	+255.0
Other	--	--	--	--
Support	--	+118.8	--	+118.8
Subtotal	+327.5	+243.5	--	+571.0
Total Changes	+704.5	-5610.1	--	-4905.6
CE - Cost Variance	1193.5	4617.9	--	5811.4
CE - Cost & Funding	1193.5	4617.9	--	5811.4

Summary Base Year 2004 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	465.0	8104.0	--	8569.0
Previous Changes				
Economic	--	--	--	--
Quantity	--	-1373.3	--	-1373.3
Schedule	--	+219.5	--	+219.5
Engineering	--	--	--	--
Estimating	+311.6	-3529.4	--	-3217.8
Other	--	--	--	--
Support	--	-50.2	--	-50.2
Subtotal	+311.6	-4733.4	--	-4421.8
Current Changes				
Economic	--	--	--	--
Quantity	+6.4	+104.0	--	+110.4
Schedule	--	+12.6	--	+12.6
Engineering	--	--	--	--
Estimating	+265.8	-22.1	--	+243.7
Other	--	--	--	--
Support	--	+80.6	--	+80.6
Subtotal	+272.2	+175.1	--	+447.3
Total Changes	+583.8	-4558.3	--	-3974.5
CE - Cost Variance	1048.8	3545.7	--	4594.5
CE - Cost & Funding	1048.8	3545.7	--	4594.5

Previous Estimate: December 2009

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.3
Increase to the estimate due to the addition of 172 RDTE quantities. (Quantity) (QR)	+6.4	+7.4
Adjustment for current and prior escalation. (Estimating)	-0.3	-0.3
Increased funding provided to cover shortfalls to the baseline program as well as additional enhancements to the program of record (Navy). (Estimating)	+164.3	+195.1
Increased funding provided to cover shortfalls to the baseline program as well as additional enhancements to the program of record (Army). (Estimating)	+91.9	+113.0
Increased funding provided to cover shortfalls to the baseline program as well as additional enhancements to the program of record (Air Force). (Estimating)	+9.9	+12.0
RDT&E Subtotal	+272.2	+327.5

(QR) Quantity Related

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-8.3
Total Quantity variance resulting from an increase of 5,845 Manpacks, increasing the total from 194,512 to 200,357 (Army). (Subtotal)	+37.0	+56.6
Quantity variance resulting from an increase of 5,845 Manpacks, increasing the total from 194,512 to 200,357 (Army). (Quantity)	(+114.2)	(+174.6)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+10.4)	(+15.9)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-87.6)	(-133.9)
Quantity variance resulting from a decrease of 690 Small Form Fit (SFF) -Bs, from a total of 10,680 to 9,990 (Air Force 3080). (Quantity)	-4.9	-6.6
Total quantity variance resulting from an increase of 690 SFF-Bs, from 0 to 690 (Air Force 3010). Subtotal (Subtotal)	+6.1	+7.8
Quantity variance resulting from an increase of 690 SFF-Bs, from 0 to 690 (Air Force 3010). (Quantity)	(+17.4)	(+22.3)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+1.5)	(+1.8)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-12.8)	(-16.3)
Increase to the estimate due to the addition of quantities, from 0 to 690 (Air Force 3010). (Quantity) (QR)	+4.7	+5.9
Acceleration of procurement buy profile (Army) caused by increase to funding in FY2012-16. (Schedule)	0.0	-4.3
Stretch out of procurement buy profile due to reduction in FY2012-16 funding. (Subtotal) (Subtotal)	0.0	+7.5
Stretch out of procurement buy profile (Navy 1109) due to reduction in FY2012-16 funding. (Schedule)	(0.0)	(+1.5)
Stretch out of procurement buy profile (Navy 1810) due to reduction in FY2012-16 funding. (Schedule)	(0.0)	(+1.8)
Stretch out of procurement buy profile (Air Force 3080) due to reduction in FY2012-16 funding. (Schedule)	(0.0)	(+4.2)
Adjustment for current and prior escalation. (Estimating) (QR)	+0.1	0.0
Maturation of the program; Recurring Manufacturing costs have been revised as		

Engineering Development Model (EDM) actuals from the Contractor have come in higher than anticipated. (Subtotal) (Subtotal)	+78.2	+85.4
Increased estimate driven by the maturation of the program; Recurring Manufacturing costs have increased as EDM actuals from the Contractor have come in higher than anticipated (Navy 1109). (Estimating)	(0.0)	(+4.5)
Increased estimate driven by the maturation of the program; Recurring Manufacturing costs have increased as EDM actuals from the Contractor have come in higher than anticipated (Navy 1810). (Estimating)	(-1.2)	(+2.5)
Increased estimate driven by the maturation of the program; Recurring Manufacturing costs have increased as EDM actuals from the Contractor have come in higher than anticipated (Army). (Estimating)	(+79.4)	(+78.4)
Decreased estimate due to removal of 690 SFF-B quantities, from a total of 10,680 to 9,990. (Air Force 3080). (Quantity)	-27.4	-19.5
Adjustment for current and prior escalation. (Support)	0.0	+0.1
Changes to Navy 1109 Support. (Subtotal) (Subtotal)	+10.4	+15.1
Decrease in Other Support (Navy 1109) driven by changes to Recurring Manufacturing; Engineering Change Orders, Training, Data, and Modifications are calculated as a percentage of the Prime Mission Product, and decreased accordingly. (Support)	(-2.5)	(-2.7)
Increase in Initial Spares (Navy 1109) due to change in cost estimating methodology; revised Cost Estimating Relationship (CER) incorporated into Program Office Estimate that calculates Initial Spare costs to be approximately 10% of Recurring Manufacturing costs. (Support)	(+12.9)	(+17.8)
Changes to Navy 1810 Support. (Subtotal) (Subtotal)	+0.4	+1.7
Decrease in Other Support (Navy 1810) driven by changes to Recurring Manufacturing; Engineering Change Orders, Training, Data, and Modifications are calculated as a percentage of the Prime Mission Product, and decreased accordingly. (Support)	(-1.6)	(-1.4)
Increase in Initial Spares (Navy 1810) due to change in cost estimating methodology; revised CER incorporated into Program Office Estimate that calculates Initial Spare costs to be approximately 10% of Recurring Manufacturing costs. (Support)	(+2.0)	(+3.1)
Changes to Army Support. (Subtotal) (Subtotal)	+68.9	+97.1
Increase in Other Support (Army) driven by changes to Recurring Manufacturing; Engineering Change Orders, Training, Data, and Modifications are calculated as a percentage of the Prime Mission Product, and increased accordingly. (Support)	(+62.3)	(+91.1)
Increase in Initial Spares (Army) due to change in cost estimating methodology; revised CER incorporated into Program Office Estimate that calculates Initial Spare costs to be approximately 10% of Recurring Manufacturing costs. (Support)	(+6.6)	(+6.0)
Changes to Air Force 3080 Support. (Subtotal) (Subtotal)	-1.7	+1.5
Decrease in Other Support (Air Force 3080) driven by changes to Recurring Manufacturing; Engineering Change Orders, Training, Data, and Modifications are calculated as a percentage of the Prime Mission Product, and decreased accordingly. (Support)	(-13.9)	(-14.9)
Increase in Initial Spares (Air Force 3080) due to change in cost estimating methodology; revised CER incorporated into Program Office Estimate that calculates Initial Spare costs to be approximately 10% of Recurring Manufacturing costs. (Support)	(+12.2)	(+16.4)
Changes to Air Force 3010 Support. (Subtotal) (Subtotal)	+2.6	+3.3

Increase in Other Support (Air Force 3010) due to increase of 690 SFF-B quantities. (Support) (QR)	(+1.5)	(+1.9)
Increase in Initial Spares (Air Force 3010) due to increase of 690 SFF-B quantities. (Support) (QR)	(+1.1)	(+1.4)
Acceleration of procurement buy profile (Air Force 3080) caused by increase to funding in FY2012-16. (Schedule) (QR)	+0.7	+0.2
Procurement Subtotal	+175.1	+243.5

(QR) Quantity Related

Contracts

General Contract Memo

This contract is now over 90% complete and will no longer be reported.

Appropriation: RDT&E

Contract Name	**Development**
Contractor	GENERAL DYNAMICS C4 SYSTEMS, INC.
Contractor Location	SCOTTSDALE, AZ 85257
Contract Number, Type	W15P7T-04-C-E405, CPAF
Award Date	July 16, 2004
Definitization Date	July 16, 2004

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
295.6	N/A	0	624.6	N/A	410	752.0	790.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-119.4	-7.3
Previous Cumulative Variances	-73.4	-10.7
Net Change	-46.0	+3.4

Cost And Schedule Variance Explanations

The unfavorable net Cost Variance is due to integration of software and hardware along with associated testing being more complex than planned.

Additionally, manufacturing of the engineering development models (EDMs) cost more than planned due to yield and supplier issues. These issues were the largest drivers of the variance and extended overall schedule causing other areas to incur cost variances. These issues have largely been over-come with completion of EDM deliveries although there is on-going integration work as Waveforms are introduced onto the hardware.

The net favorable Schedule Variance is due to completion of hardware and software development, completion of EDM manufacturing and transitioning into the integration and test phase of the program.

Contract Comments

In 2006, the JTRS HMS program was restructured, resulting in cost and schedule above the original baseline. Since then, the baseline has been further increased by other in scope contract changes including the Mobile-User Objective System (MUOS), the modification of the SFF-C to the current configuration AN/PRC-154 Rifleman Radio, and the realignment of tasks associated with changes to software drops. These changes to the baseline have caused the increase from the Initial Contract Price to the Current Contract Price.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	552	533	582	91.58%
Production	0	0	221396	0.00%
Total Program Quantities Delivered	552	533	221978	0.24%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	5811.4	Years Appropriated	8
Expenditures To Date	764.0	Percent Years Appropriated	32.00%
Percent Expended	13.15%	Appropriated to Date	931.5
Total Funding Years	25	Percent Appropriated	16.03%

The program continues to deliver developmental radios. As of December 2010, the JTRS HMS contractor delivered 533 Engineering Developmental Models (EDMs) (213 SFF-A, 12 SFF-C, 21 SFF-D, 3 SFF-J, 163 AN/PRC-154 RR sets (Limited User Test (LUT) configuration), 56 AN/PRC-154 RR sets (Production RR (PRR) configuration sets), 65 AN/PRC-155 Manpack radios, and 303 pre-Engineering Development Models (pre-EDMs) (209 SFF-A, 70 SFF-C, 2 SFF-D, and 22 Manpack Technology Demonstrators).

Operating and Support Cost

Assumptions And Ground Rules

1. Cost estimate and quantities reflect approved JTRS HMS Acquisition Program Baseline signed January 16, 2008.
2. Costs estimated in accordance with Department of the Army Cost Analysis Manual, May 2001.
3. OSD Inflation Guidance dated February 2011 was applied.
4. JTRS HMS Cost Analysis Requirements Document (CARD) updated January 2011 is used as the basis of the estimate.
5. Lead-time between the start of production and the start of fielding is assumed to be six months.
6. Handheld and Manpack radios will operate on rechargeable batteries. Batteries have a life of 3 years and battery chargers have a life of 5 years.
7. System life is estimated at 20 years.
8. There is no antecedent program.
9. The total O&S cost is the Average Annual Cost x Total Number of Radios (221,396) x 20 year system life.

Costs BY2004 $K		
Cost Element	**Phase 1 (Rifleman Radio, SFF A&D) Average Annual Cost per Radio**	**No Antecedent**
Unit-Level Manpower	--	--
Unit Operations	0.654	--
Maintenance	1.346	--
Sustaining Support	0.200	--
Continuing System Improvements	--	--
Indirect Support	0.012	--
Other	0.090	--
Total Unitized Cost (Base Year 2004 $)	2.302	--

Total O&S Costs $M	Phase 1 (Rifleman Radio, SFF A&D)	No Antecedent
Base Year	10191.1	--
Then Year	16928.4	--