



## Selected Acquisition Report (SAR)

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



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

As of FY 2015 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
BY - Base Year  
DAMIR - Defense Acquisition Management Information Retrieval  
Dev Est - Development Estimate  
DoD - Department of Defense  
DSN - Defense Switched Network  
Econ - Economic  
Eng - Engineering  
Est - Estimating  
FMS - Foreign Military Sales  
FY - Fiscal Year  
IOC - Initial Operational Capability  
\$K - Thousands of Dollars  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MILCON - Military Construction  
N/A - Not Applicable  
O&S - Operating and Support  
Oth - Other  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget  
PE - Program Element  
Proc - Procurement  
Prod Est - Production Estimate  
QR - Quantity Related  
Qty - Quantity  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
Sch - Schedule  
Spt - Support  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting

## Program Information

### Program Name

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

### DoD Component

Army

### Joint Participants

US Navy; US Marine Corps; US Air Force

Army is the lead Acquisition Executive, per memo dated July 11, 2012.

## Responsible Office

### Responsible Office

COL William Russell Wygal  
6007 Combat Dr.  
Bldg 6007, Room 5F-302  
Aberdeen Proving Ground, MD 21005  
[william.r.wygal.mil@mail.mil](mailto:william.r.wygal.mil@mail.mil)

**Phone** 443-395-2669  
**Fax** 443-395-7680  
**DSN Phone** 648-2669  
**DSN Fax** 648-7680  
**Date Assigned** July 2, 2012

## References

### SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 20, 2011

### Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 20, 2011

## Mission and Description

The Joint Tactical Radio System Handheld, Manpack, and Small Form Fit (JTRS HMS) program is an Acquisition Category (ACAT) ID 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 is structured as a single program of record with two phases. Phase 1 developed 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. Phase 2 will develop the 2-Channel Manpack and SFF-B for use in a classified environment. 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 Satellite Communications Military, Single Channel Ground to Air Radio System, and Mobile User Objective System waveforms. JTRS HMS will provide new networking capability to the individual Soldiers, Marines, Sailors and Airmen 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 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 Army, Navy, U.S. Marine Corps, Air Force and the Special Operations Command communication needs.

## Executive Summary

The JTRS HMS program was transitioned to the Department of the Army through an Acquisition Decision Memorandum (ADM) signed by the Under Secretary of Defense for Acquisition, Technology, and Logistics on July 11, 2012.

The Full Rate Production (FRP) decisions for the Rifleman Radio (RR) and the Manpack (MP) Radio were delayed due to changes in the program Acquisition Strategy (AS) to allow for Full and Open Competition (FOC) contracts using a multi-vendor award approach. An updated AS has been staffed. Once the AS is approved, the program office will release the FOC solicitations for the radios. The FRP Review for the RR was estimated to take place in May 2012 but is now planned for February 2017. The FRP for the MP was estimated to take place in December 2012 but is now planned for July 2017. The scheduled date for the MP IOC changed due to the need to develop and test additional threshold-level capabilities. The IOC for the MP was estimated to take place in March 2013 but is now planned for June 2014. Additionally, JTRS HMS experienced higher acquisition costs as a result of the following Fact of Life changes: change in the program acquisition strategy for full rate production radios from a single vendor (per radio) to multiple vendors, vehicle integration cost requirements, and changes in the Army Fielding Strategy. Subsequently, the JTRS HMS program has identified both a PAUC and an APUC increase over the Current Baseline Estimate of greater than 15%, causing a Significant Nunn-McCurdy Breach. A Program Deviation Report is in Army staffing.

In order to support the Army's Capability Sets (CS) during the implementation of the new FOC AS, the program office submitted a request for approval to procure an additional 1,500 MP LRIP radios under the current contract. Milestone Decision Authority approval for the purchase of the additional MP LRIP radios was provided through an ADM dated December 8, 2013.

As of February 3, 2014, the Government received 21,379 LRIP RRs and 3,531 MPs.

Phase 1 RR achieved IOC in July 2012 with the fielding to the 2nd Brigade/1st Armored Division and 75th Ranger Regiment. Phase 2 MP development continues with incremental, increased capabilities to allow for earlier fielding of initial capabilities. The program completed the MP Multi-Service Operational Test and Evaluation (MOT&E) in May 2012 in conjunction with the bi-annual Network Integration Evaluation (NIE) 12.2 as well as additional Single Channel Ground and Airborne Radio System (SINCGARS) performance testing during the month of June 2012. This test, as well as prior tests, indicates improvement in the MP performance, using the test concept of Test-Fix-Test. The early operational test, NIE 12.2, was conducted on LRIP1 variants of the MP hardware (HW). Since then, numerous corrected deficiencies have been implemented by the vendor, including production improvements and extended environmental stress screening, during this Test-Fix-Test cycle. The MP Government Developmental Test (GDT) 3 was completed on October 3, 2012 which addressed many of the shortfalls identified in the MOT&E. The Office of the Secretary of Defense established FRP entrance criteria in the October 11, 2012 ADM which require successful completion of developmental and operational test events and meeting key performance requirements using operationally configured vehicles. Since GDT3, significant improvements have been demonstrated at Customer Tests (CT) and Performance Verification Tests. These improvements were formally demonstrated at the GDT4 in January/February 2014 and will be demonstrated at a follow-on operational test at NIE 14.2 in April/May of 2014, which is intended to demonstrate the established requirements. These follow-on tests will all be conducted on the LRIP2 variant (from ADM dated October 11, 2012) of HW that contains numerous product improvements over the earlier LRIP1 variant (from ADM dated June 17, 2011) of HW.

To date, only a subset of capabilities of the MP has been demonstrated in operational scenarios using the earlier LRIP1 HW variants. The MP MOT&E conducted in the May 2012 timeframe revealed several deficiencies. The follow-on test (GDT3) demonstrated significant improvements in SINCGARS voice, call completion rates, range

distance, and voice quality, but reliability was still an issue. At this time, SINCGARS voice, Soldier Radio Waveform voice, and dedicated channel Ultra High Frequency Satellite Communications (SATCOM) (181B) have been demonstrated. Due to software (SW) readiness, Demand Assigned Multiple Access SATCOM (182A, and 183A), Internet Protocol data transmission, and routing and retransmission were not demonstrated earlier, but have since been demonstrated at CTs, and will be formally demonstrated at GDT4 and NIE 14.2.

Late in FY 2014 the MP, equipped with a Mobile User Objective System (MUOS) High Power Amplifier, will be fully interoperable and capable of MUOS Satellite communications. The MP has already demonstrated MUOS capability with an internal SW build and has passed a mini Security Verification Test with the National Security Agency. The MUOS capability is planned for deployment in CS 16. The vendor, General Dynamics, has also included the objective Wideband Networking Waveform on the MP, which would also be available for use in CS 16. The final version of SW with these capabilities will be available by the 4th Quarter FY 2014, but additional Information Assurance and Spectrum certifications will be required prior to formal testing and deployment.

The program has worked to address SW and HW challenges in order to produce systems which will demonstrate stable operations in testing and operational environments. Specifically, the JTRS HMS Product Manager has worked with the Nett Warrior Program Manager to address RR issues discovered as part of the Nett Warrior Limited User Test during NIE 13.2. Additionally, other issues found in the MP at previous Developmental and Operational Tests (OT) have been addressed by JTRS HMS. Since NIE 13.2, the RR (AN/PRC-154A) as well as the MP (AN/PRC-155) have been tested in an operationally realistic scenario at the GDT4 at the Electronic Proving Ground, Fort Huachuca, Arizona, and they were shown to meet all performance requirements not previously demonstrated. The reliability of the MP is still below the Mean Time Between Essential Function Failure Key System Attribute threshold requirement (of 477 hours), but growth projections indicate that this is achievable. The follow-on OT for the MP is set to take place at NIE 14.2. The OT for the RR is slated to take place in the NIE 15.1 timeframe.

There are no additional significant software-related issues with this program at this time.

### Threshold Breaches

APB Breaches		
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<b>Schedule</b>		<input checked="" type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input type="checkbox"/>
	Procurement	<input checked="" type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input checked="" type="checkbox"/>
	APUC	<input checked="" type="checkbox"/>

### Explanation of Breach

JTRS HMS incurred schedule breaches in three areas due to changes in the program's Acquisition Strategy (AS) to allow for a Full and Open Competition (FOC) contract with a multi-vendor approach. The Program Manager is coordinating with the Office of the Secretary of Defense (OSD) on a competition strategy and is currently staffing the required documents for approval to release the FOC Solicitation. A schedule Program Deviation Report (PDR) was submitted and a new APB reflecting the changes in schedule is being staffed with OSD.

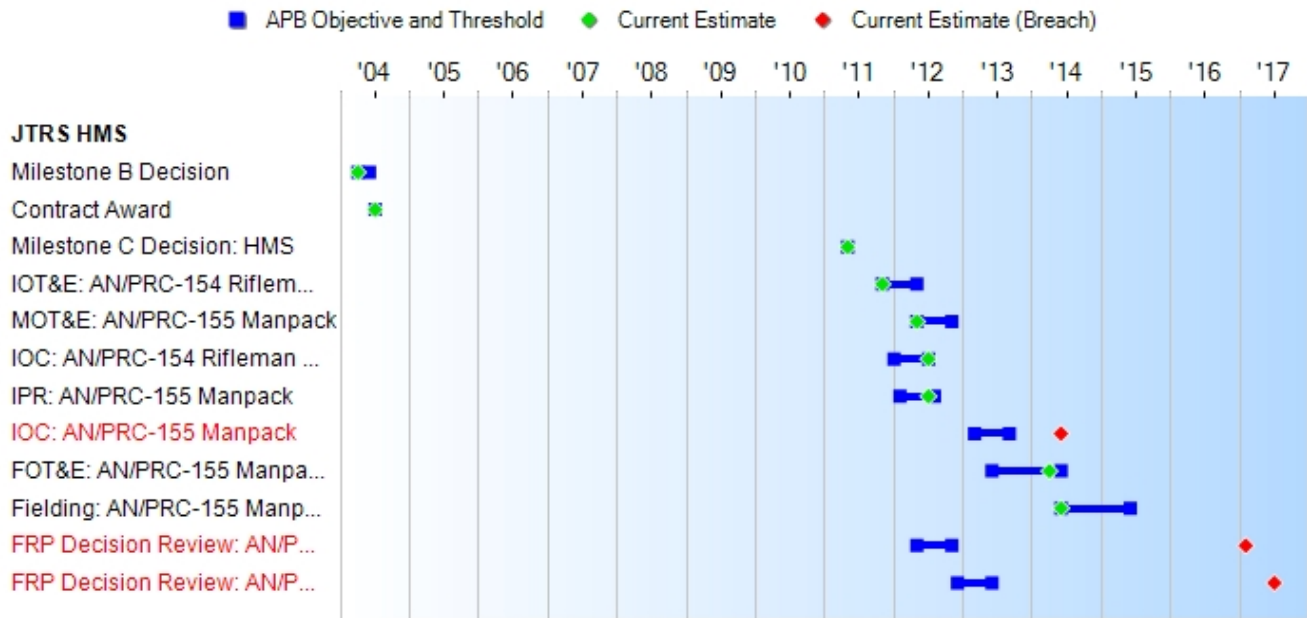
Nunn-McCurdy Breaches		
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<b>Current UCR Baseline</b>		
	PAUC	Significant
	APUC	Significant
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

The JTRS HMS program has identified both a PAUC and an APUC increase over the Current Baseline Estimate of greater than 15%, causing a Significant Nunn-McCurdy Breach. The primary factors which changed the estimate are based on the following Fact of Life changes: change in program AS for full rate production radios from a single vendor (per radio) to multiple vendors, vehicle integration cost requirements, and changes in the Army Fielding Strategy. A Program Deviation Report (PDR) is forthcoming.



### Schedule



Milestones	SAR Baseline Prod Est	Current APB Production 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: HMS	MAY 2011	MAY 2011	MAY 2011	MAY 2011
IOT&E: AN/PRC-154 Rifleman Radio	NOV 2011	NOV 2011	MAY 2012	NOV 2011
MOT&E: AN/PRC-155 Manpack	MAY 2012	MAY 2012	NOV 2012	MAY 2012
IOC: AN/PRC-154 Rifleman Radio	JAN 2012	JAN 2012	JUL 2012	JUL 2012
IPR: AN/PRC-155 Manpack	FEB 2012	FEB 2012	AUG 2012	JUL 2012
IOC: AN/PRC-155 Manpack	MAR 2013	MAR 2013	SEP 2013	<b>JUN 2014<sup>1</sup></b> (Ch-1)
FOT&E: AN/PRC-155 Manpack with MUOS	JUN 2013	JUN 2013	JUN 2014	APR 2014
Fielding: AN/PRC-155 Manpack with MUOS	JUN 2014	JUN 2014	JUN 2015	JUN 2014
FRP Decision Review: AN/PRC-154 Rifleman Radio	MAY 2012	MAY 2012	NOV 2012	<b>FEB 2017<sup>1</sup></b> (Ch-2)
FRP Decision Review: AN/PRC-155 Manpack	DEC 2012	DEC 2012	JUN 2013	<b>JUL 2017<sup>1</sup></b> (Ch-3)

<sup>1</sup>APB Breach

**Change Explanations**

(Ch-1) The IOC Current Estimate for the AN/PRC-155 Manpack (MP) was changed from August 2013 to June 2014 due to the need to develop and test additional threshold-level capabilities.

(Ch-2) The FRP Review Current Estimate for the AN/PRC-154 Rifleman Radio (RR) was changed from January 2015 to February 2017 as a result of changes in the program AS to allow for full and open competition of a multi-vendor award contract due to Congressional interest.

(Ch-3) The FRP Review Current Estimate for the AN/PRC-155 MP was changed from February 2015 to July 2017 as a result of changes in the program AS to allow for full and open competition of a multi-vendor award contract due to Congressional interest.

**Memo**

An Acquisition Decision Memorandum dated July 11, 2012 directed the program to conduct a full-and-open competition that is open to all vendors/industry partners. This is a change to the original AS, and the program now requires additional time to conduct the full and open competition and achieve a FRP Decision. A Program Deviation Report has been submitted for these schedule breaches and a new Acquisition Program Baseline reflecting these new dates is in staffing.

**Acronyms and Abbreviations**

AS - Acquisition Strategy  
FOT&E - Follow-On Test and Evaluation  
FRP - Full Rate Production  
IOT&E - Initial Operational Test and Evaluation  
IPR - In-Process Review  
MOT&E - Multi-Service Operational Test and Evaluation  
MUOS - Mobile User Objective System

## Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Intra-Squad Communication: AN/PRC-154 Rifleman Radio	Voice	Voice	Voice	Voice	Voice
Soldier Location: AN/PRC-154 Rifleman Radio	Automatic PLI	Automatic PLI	Automatic PLI	Automatic PLI	Automatic PLI
Net Ready (NR) Capability: AN/PRC- 154 Rifleman Radio	The capability, system, and/or service must fully support execution of all operational activities and information exchanges identified in DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include 1 Solution architecture products compliant with DoD	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 TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration	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 GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP	The capability, system, and/or service must fully support execution of joint critical operational activities and information exchanges identified in the DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include: 1) Solution architecture products compliant with DoD	The capability, system, and/or service must fully support execution of joint critical operational activities and information exchanges identified in the DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include: 1) Solution architecture products compliant with DoD

	<p>Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DoD IEA, excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs, necessary to meet all operational requirements specified in the DoD Enterprise Architecture and solution</p>	<p>table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.</p>	<p>declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.</p>	<p>Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DOD Information Enterprise Architecture (DoD IEA), excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs necessary to meet all operational requirements specified in the DoD</p>	<p>Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DOD Information Enterprise Architecture (DoD IEA), excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs necessary to meet all operational requirements specified in the DoD Enterprise</p>
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	architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an ATO by the DAA, and 5) Supportability requirements to include SAASM, Spectrum and JTRS requirements			Enterprise Architecture and solution architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an IATO or ATO by the DAA, and 5) Supportability requirements to include SAASM, Spectrum and JTRS requirements	Architecture and solution architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an IATO or ATO by the DAA, and 5) Supportability requirements to include SAASM, Spectrum and JTRS requirements
Sustainment (Operational Availability (Ao)): AN/PRC-154 Rifleman Radio	0.99 (Channel)	0.99 (Channel)	0.96 (Channel)	0.999 (Channel)	0.999 (Channel)
Voice and Data Communication: AN/PRC-155 Manpack	Must provide networked voice and data exchange to support timely tactical actions while dispersed across the battlefield.	Must provide networked voice and data exchange to support timely tactical actions while dispersed across the battlefield.	Must provide networked voice and data exchange to support timely tactical actions while dispersed across the battlefield.	MP demonstrate networked voice and data exchange (i.e., mission command information) supporting timely tactical actions while dispersed across the battlefield using gateways.	Must provide networked voice and data exchange to support timely tactical actions while dispersed across the battlefield.
Net Ready (NR)	The	The	The	TBD	The

<p>Capability: AN/PRC-155 Manpack</p>	<p>capability, system, and/or service must fully support execution of all operational activities and information exchanges identified in DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include 1) Solution architecture products compliant with DoD Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data</p>	<p>capability, system, and/or service must fully support execution of all operational activities and information exchanges identified in DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include 1) Solution architecture products compliant with DoD Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data</p>	<p>capability, system, and/or service must fully support execution of joint critical operational activities and information exchanges identified in DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include 1) Solution architecture products compliant with DoD Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data</p>		<p>capability, system, and/or service must fully support execution of joint critical operational activities and information exchanges identified in DoD Enterprise Architecture and solution architectures based on integrated DoDAF content, and must satisfy the technical requirements for transition to Net-Centric military operations to include 1) Solution architecture products compliant with DoD Enterprise Architecture based on integrated DoDAF content, including specified operationally effective information exchanges 2) Compliant with Net - Centric Data</p>
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	<p>Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DoD IEA, excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs, necessary to meet all operational requirements specified in the DoD Enterprise Architecture and solution architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5)</p>	<p>Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DoD IEA, excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs, necessary to meet all operational requirements specified in the DoD Enterprise Architecture and solution architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA,</p>	<p>Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DoD IEA, excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs, necessary to meet all operational requirements specified in the DoD Enterprise Architecture and solution architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA,</p>		<p>Strategy and Net-Centric Services Strategy, and the principles and rules identified in the DoD IEA, excepting tactical and non-IP communications 3) Compliant with GIG Technical Guidance to include IT Standards identified in the TV-1 and implementation guidance of GESPs, necessary to meet all operational requirements specified in the DoD Enterprise Architecture and solution architecture views 4) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5)</p>
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	Supportability requirements to include SAASM, Spectrum and JTRS requirements	and 5) Supportability requirements to include SAASM, Spectrum and JTRS requirements	and 5) Supportability requirements to include SAASM, Spectrum and JTRS requirements		Supportability requirements to include SAASM, Spectrum and JTRS requirements
Sustainment (Operational Availability (Ao)): AN/PRC-155 Manpack	0.99 (Channel)	0.99 (Channel)	0.96 (Channel)	0.99 (Channel)	0.97 (Channel)
Multi-Channel Operations: AN/PRC-155 Manpack	To enable Warfighters to conduct combat missions across the battlefield, any channel of the MP must have ability to operate any of the waveforms listed as Objective in Table EE-2 of the CPD. The MP must also allow simultaneous operations using waveform combinations listed as Objective identified in Table EE-3.2 of the CPD. In addition the MP must have the ability to route and	To enable Warfighters to conduct combat missions across the battlefield, any channel of the MP must have ability to operate any of the waveforms listed as Objective in Table EE-2 of the CPD. The MP must also allow simultaneous operations using waveform combinations listed in Table EE-3.2 of the CPD. In addition the MP must have the ability to route and retransmit threshold	To enable Warfighters to conduct combat missions across the battlefield, any channel of the MP must have ability to operate any of the waveforms listed as Thresholds in Table EE-2 of the CPD. The MP must also allow simultaneous operations using waveform combinations listed in Table EE-3 of the CPD. In addition the MP must have the ability to route and retransmit threshold waveforms	The radio enables Warfighters to conduct combat missions across the battlefield using the Soldier Radio Waveform, basic modes of SINCGARS and basic modes of UHF SATCOM. The MP has demonstrated simultaneous operations using combinations of these waveforms.	To enable Warfighters to conduct combat missions across the battlefield, any channel of the MP must have ability to operate any of the waveforms listed as Thresholds in Table EE-2 of the CPD. The MP must also allow simultaneous operations using waveform combinations identified in Table EE-3 of the CPD. In addition the MP must have the ability to route and retransmit threshold waveforms



	retransmit threshold waveforms listed as Objective in Table EE-4 of the CPD.	waveforms listed as Objective in Table EE-4 of the CPD.	listed in Table EE-4 of the CPD.		listed in Table EE-4 of the CPD.
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### Requirements Source

Rifleman Radio Capability Production Document (CPD) dated March 7, 2011 and Manpack CPD dated May 10, 2012

### Change Explanations

None

### Acronyms and Abbreviations

AN/PRC - Army-Navy Portable Radio Component  
 ATO - Approval to Operate  
 CPD - Capability Production Document  
 DAA - Designated Approval Authority  
 DODAF - Department of Defense Architecture Framework  
 GESP - Global Information Grid Enterprise Service Profile  
 GIG - Global Information Grid  
 IA - Information Assurance  
 IATO - Interim Approval to Operate  
 IAW - in accordance with  
 IEA - Information Environment Architecture  
 IERs - Information Exchange Requirements  
 IP - Internet Protocol  
 IT - Information Technology  
 JTA - Joint Technical Architecture  
 JTRS - Joint Tactical Radio System  
 MP - Manpack  
 SAASM - Selective Availability Anti-Spoofing Module  
 SATCOM - Satellite Communications  
 SINCGARS - Single Channel Ground to Air Radio System  
 TV - Technical View  
 UHF - Ultra High Frequency  
 WF - Waveform

## Track to Budget

## RDT&amp;E

Appn	BA	PE		
Navy	1319	05	0604280N	
	<b>Project</b>		<b>Name</b>	
	3075		Joint Tactical Radio System (JTRS) / HMS JTRS	(Sunk)
Army	2040	05	0604280A	
	<b>Project</b>		<b>Name</b>	
	162		Joint Tactical Radio / Network Enterprise Domain (NED)	(Shared) (Sunk)
	DZ5		Joint Tactical Radio	
Army	2040	05	0604805A	
	<b>Project</b>		<b>Name</b>	
	615		JTRS - Ground Domain Integration	(Shared) (Sunk)
	61A		JTRS Cluster 5 Development	(Sunk)

JTRS HMS is now associated with Program Executive Office Command, Control and Communications-Tactical under Project Manager Tactical Radios (PE 0604280A).

## Procurement

Appn	BA	PE		
Navy	1109	04	0206313M	
	<b>Line Item</b>		<b>Name</b>	
	4633		Radio Systems	(Shared)
Navy	1810	02	0204163N	
	<b>Line Item</b>		<b>Name</b>	
	3057		Communication Items Under \$5M	(Shared)
Army	2035	02	0310700A	
	<b>Line Item</b>		<b>Name</b>	
	B90210		JTRS Cluster 5 (Handheld)	
	B90215		JTRS (Manpack)	(Shared)
Army	2035	03		
	<b>Line Item</b>		<b>Name</b>	
	R80501		Ground Soldier System	(Shared) (Sunk)
Air Force	3080	03	0207423F	
	<b>Line Item</b>		<b>Name</b>	
	837100		Tactical C-E Equipment	(Shared)

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

Appropriation	BY2011 \$M			BY2011 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold	Current Estimate	Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	1254.7	1254.7	1380.2	1307.4	1238.5	1238.5	1328.2
Procurement	6987.9	6987.9	7686.7	<b>8409.4</b> <sup>1</sup>	7962.5	7962.5	10856.1
Flyaway	--	--	--	6391.7	--	--	8292.7
Recurring	--	--	--	6140.3	--	--	7996.1
Non Recurring	--	--	--	251.4	--	--	296.6
Support	--	--	--	2017.7	--	--	2563.4
Other Support	--	--	--	1775.3	--	--	2247.9
Initial Spares	--	--	--	242.4	--	--	315.5
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	8242.6	8242.6	N/A	9716.8	9201.0	9201.0	12184.3

<sup>1</sup> APB Breach

#### Confidence Level for Current APB Cost 50% -

The Independent Cost Estimate (ICE) to support JTRS HMS Milestone C decision, like all lifecycle cost estimates previously performed by the Cost Assessment Program Evaluation (CAPE) office, is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

<b>Quantity</b>	<b>SAR Baseline Prod Est</b>	<b>Current APB Production</b>	<b>Current Estimate</b>
RDT&E	582	582	833
Procurement	270369	270369	270369
Total	270951	270951	271202

Unit of measure is a JTRS HMS radio, which includes multiple variants (Rifleman Radio, Manpack, or various Small Form Fits).

## Cost and Funding

### Funding Summary

#### Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	1099.2	31.8	9.8	4.5	0.0	0.0	0.0	182.9	1328.2
Procurement	711.7	343.2	174.2	376.1	375.2	385.6	478.5	8011.6	10856.1
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 2015 Total	1810.9	375.0	184.0	380.6	375.2	385.6	478.5	8194.5	12184.3
PB 2014 Total	2105.8	414.7	356.0	355.1	355.1	382.7	539.2	5682.5	10191.1
Delta	-294.9	-39.7	-172.0	25.5	20.1	2.9	-60.7	2512.0	1993.2

The current estimate for procurement reflects FY 2015 President's Budget adjustments to exclude costs associated with efforts that are not a part of the current JTRS HMS program of record. Costs in TY\$ are as follows:

FY 2013 - \$5.66M;

FY 2014 - \$6.82M;

FY 2015 - \$1.49M;

FY 2016 - \$6.64M;

FY 2017 - \$6.33M;

FY 2018 - \$7.35M;

FY 2019 - \$72.57M;

To Complete - \$221.1M

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	833	0	0	0	0	0	0	0	0	833
Production	0	33115	6907	2828	5163	7696	7844	16711	190105	270369
PB 2015 Total	833	33115	6907	2828	5163	7696	7844	16711	190105	271202
PB 2014 Total	833	34129	10523	10065	10064	10064	10881	16628	168015	271202
Delta	0	-1014	-3616	-7237	-4901	-2368	-3037	83	22090	0

## 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	--	--	--	--	--	--	178.3
2011	--	--	--	--	--	--	66.1
2012	--	--	--	--	--	--	117.2
2013	--	--	--	--	--	--	83.5
<b>Subtotal</b>	<b>271</b>	--	--	--	--	--	<b>855.7</b>

## Annual Funding BY\$

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2011 \$M	Non End Item Recurring Flyaway BY 2011 \$M	Non Recurring Flyaway BY 2011 \$M	Total Flyaway BY 2011 \$M	Total Support BY 2011 \$M	Total Program BY 2011 \$M
2007	--	--	--	--	--	--	139.7
2008	--	--	--	--	--	--	155.5
2009	--	--	--	--	--	--	129.6
2010	--	--	--	--	--	--	179.1
2011	--	--	--	--	--	--	64.8
2012	--	--	--	--	--	--	113.0
2013	--	--	--	--	--	--	79.2
<b>Subtotal</b>	<b>271</b>	--	--	--	--	--	<b>860.9</b>

## Annual Funding TY\$

## 2040 | RDT&amp;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	--	--	--	--	--	--	0.8
2012	--	--	--	--	--	--	0.1
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	31.8
2015	--	--	--	--	--	--	9.8
2016	--	--	--	--	--	--	4.5
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	--
2020	--	--	--	--	--	--	56.2
2021	--	--	--	--	--	--	12.2
2022	--	--	--	--	--	--	7.3
2023	--	--	--	--	--	--	14.8
2024	--	--	--	--	--	--	1.3
2025	--	--	--	--	--	--	19.2
2026	--	--	--	--	--	--	13.4
2027	--	--	--	--	--	--	22.6
2028	--	--	--	--	--	--	1.4
2029	--	--	--	--	--	--	1.4
2030	--	--	--	--	--	--	22.9
2031	--	--	--	--	--	--	1.4
2032	--	--	--	--	--	--	8.8



<b>Subtotal</b>	<b>562</b>	--	--	--	--	--	<b>472.5</b>
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## Annual Funding BY\$

## 2040 | RDT&amp;E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2011 \$M	Non End Item Recurring Flyaway BY 2011 \$M	Non Recurring Flyaway BY 2011 \$M	Total Flyaway BY 2011 \$M	Total Support BY 2011 \$M	Total Program BY 2011 \$M
2004	--	--	--	--	--	--	24.9
2005	--	--	--	--	--	--	106.2
2006	--	--	--	--	--	--	133.9
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	0.8
2012	--	--	--	--	--	--	0.1
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	29.4
2015	--	--	--	--	--	--	8.9
2016	--	--	--	--	--	--	4.0
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	--
2020	--	--	--	--	--	--	46.1
2021	--	--	--	--	--	--	9.8
2022	--	--	--	--	--	--	5.8
2023	--	--	--	--	--	--	11.4
2024	--	--	--	--	--	--	1.0
2025	--	--	--	--	--	--	14.3
2026	--	--	--	--	--	--	9.8
2027	--	--	--	--	--	--	16.1
2028	--	--	--	--	--	--	1.0
2029	--	--	--	--	--	--	1.0
2030	--	--	--	--	--	--	15.4
2031	--	--	--	--	--	--	0.9
2032	--	--	--	--	--	--	5.7

<b>Subtotal</b>	<b>562</b>	--	--	--	--	--	<b>446.5</b>
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**Annual Funding TY\$**  
**1109 | Procurement | Procurement, Marine Corps**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
2021	226	18.6	--	--	18.6	1.9	20.5
2022	272	24.2	--	--	24.2	2.3	26.5
2023	320	27.1	--	--	27.1	2.5	29.6
2024	320	26.4	--	--	26.4	2.5	28.9
2025	320	26.2	--	--	26.2	2.5	28.7
2026	272	22.1	--	--	22.1	2.3	24.4
2027	226	20.5	--	--	20.5	2.2	22.7
2028	195	17.3	--	--	17.3	1.9	19.2
2029	142	12.5	--	--	12.5	1.7	14.2
2030	100	8.8	--	--	8.8	1.4	10.2
<b>Subtotal</b>	<b>2393</b>	<b>203.7</b>	<b>--</b>	<b>--</b>	<b>203.7</b>	<b>21.2</b>	<b>224.9</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non Recurring Flyaway BY 2011 \$M</b>	<b>Total Flyaway BY 2011 \$M</b>	<b>Total Support BY 2011 \$M</b>	<b>Total Program BY 2011 \$M</b>
2021	226	15.0	--	--	15.0	1.5	16.5
2022	272	19.1	--	--	19.1	1.8	20.9
2023	320	21.0	--	--	21.0	1.9	22.9
2024	320	20.1	--	--	20.1	1.9	22.0
2025	320	19.5	--	--	19.5	1.9	21.4
2026	272	16.1	--	--	16.1	1.7	17.8
2027	226	14.7	--	--	14.7	1.6	16.3
2028	195	12.1	--	--	12.1	1.4	13.5
2029	142	8.6	--	--	8.6	1.2	9.8
2030	100	5.9	--	--	5.9	1.0	6.9
<b>Subtotal</b>	<b>2393</b>	<b>152.1</b>	<b>--</b>	<b>--</b>	<b>152.1</b>	<b>15.9</b>	<b>168.0</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
2012	50	3.4	--	--	3.4	--	3.4
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	--
2020	--	--	--	--	--	--	--
2021	30	2.4	--	--	2.4	0.3	2.7
2022	29	2.6	--	--	2.6	0.3	2.9
2023	29	2.4	--	--	2.4	0.3	2.7
2024	27	2.2	--	--	2.2	0.3	2.5
2025	25	2.0	--	--	2.0	0.3	2.3
2026	13	1.1	--	--	1.1	0.2	1.3
2027	13	1.2	--	--	1.2	0.2	1.4
2028	13	1.2	--	--	1.2	0.2	1.4
2029	13	1.1	--	--	1.1	0.2	1.3
2030	8	0.7	--	--	0.7	0.2	0.9
<b>Subtotal</b>	<b>250</b>	<b>20.3</b>	<b>--</b>	<b>--</b>	<b>20.3</b>	<b>2.5</b>	<b>22.8</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non Recurring Flyaway BY 2011 \$M</b>	<b>Total Flyaway BY 2011 \$M</b>	<b>Total Support BY 2011 \$M</b>	<b>Total Program BY 2011 \$M</b>
2012	50	3.3	--	--	3.3	--	3.3
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	--
2020	--	--	--	--	--	--	--
2021	30	1.9	--	--	1.9	0.3	2.2
2022	29	2.1	--	--	2.1	0.2	2.3
2023	29	1.9	--	--	1.9	0.2	2.1
2024	27	1.7	--	--	1.7	0.2	1.9
2025	25	1.5	--	--	1.5	0.2	1.7
2026	13	0.8	--	--	0.8	0.2	1.0
2027	13	0.9	--	--	0.9	0.1	1.0
2028	13	0.8	--	--	0.8	0.2	1.0
2029	13	0.8	--	--	0.8	0.1	0.9
2030	8	0.5	--	--	0.5	0.1	0.6
<b>Subtotal</b>	<b>250</b>	<b>16.2</b>	<b>--</b>	<b>--</b>	<b>16.2</b>	<b>1.8</b>	<b>18.0</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
2011	5297	33.3	--	6.9	40.2	0.1	40.3
2012	19858	357.6	--	6.0	363.6	85.3	448.9
2013	7910	164.6	--	13.3	177.9	41.2	219.1
2014	6907	213.4	--	38.1	251.5	91.7	343.2
2015	2828	47.9	--	34.2	82.1	92.1	174.2
2016	5163	188.3	--	34.8	223.1	153.0	376.1
2017	7696	210.4	--	16.5	226.9	148.3	375.2
2018	7844	226.9	--	10.2	237.1	148.5	385.6
2019	16711	303.3	--	16.9	320.2	158.3	478.5
2020	6878	299.0	--	23.9	322.9	122.0	444.9
2021	12342	379.5	--	43.5	423.0	159.0	582.0
2022	15943	476.4	--	5.8	482.2	122.0	604.2
2023	16180	441.9	--	5.8	447.7	120.8	568.5
2024	16142	434.2	--	--	434.2	119.4	553.6
2025	16104	431.4	--	12.5	443.9	120.5	564.4
2026	15952	435.6	--	0.4	436.0	117.6	553.6
2027	15496	470.0	--	8.1	478.1	119.5	597.6
2028	15496	462.3	--	8.1	470.4	119.2	589.6
2029	15496	460.0	--	5.8	465.8	119.9	585.7
2030	14918	457.0	--	5.8	462.8	120.3	583.1
2031	12329	401.8	--	--	401.8	115.7	517.5
2032	9437	263.9	--	--	263.9	87.7	351.6
<b>Subtotal</b>	<b>262927</b>	<b>7158.7</b>	<b>--</b>	<b>296.6</b>	<b>7455.3</b>	<b>2482.1</b>	<b>9937.4</b>



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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non Recurring Flyaway BY 2011 \$M</b>	<b>Total Flyaway BY 2011 \$M</b>	<b>Total Support BY 2011 \$M</b>	<b>Total Program BY 2011 \$M</b>
2011	5297	32.6	--	6.7	39.3	0.1	39.4
2012	19858	344.2	--	5.8	350.0	82.0	432.0
2013	7910	154.6	--	12.5	167.1	38.7	205.8
2014	6907	196.2	--	35.0	231.2	84.3	315.5
2015	2828	43.3	--	30.9	74.2	83.2	157.4
2016	5163	166.8	--	30.8	197.6	135.5	333.1
2017	7696	182.7	--	14.3	197.0	128.8	325.8
2018	7844	193.2	--	8.7	201.9	126.4	328.3
2019	16711	253.1	--	14.1	267.2	132.2	399.4
2020	6878	244.7	--	19.6	264.3	99.7	364.0
2021	12342	304.4	--	34.9	339.3	127.6	466.9
2022	15943	374.7	--	4.6	379.3	95.9	475.2
2023	16180	340.7	--	4.5	345.2	93.2	438.4
2024	16142	328.2	--	--	328.2	90.3	418.5
2025	16104	319.7	--	9.3	329.0	89.3	418.3
2026	15952	316.5	--	0.3	316.8	85.4	402.2
2027	15496	334.8	--	5.8	340.6	85.1	425.7
2028	15496	322.9	--	5.7	328.6	83.2	411.8
2029	15496	315.0	--	4.0	319.0	82.0	401.0
2030	14918	306.8	--	3.9	310.7	80.7	391.4
2031	12329	264.4	--	--	264.4	76.2	340.6
2032	9437	170.3	--	--	170.3	56.6	226.9
<b>Subtotal</b>	<b>262927</b>	<b>5509.8</b>	<b>--</b>	<b>251.4</b>	<b>5761.2</b>	<b>1956.4</b>	<b>7717.6</b>

Costs associated with Soldier Radio Waveform applique are not included in these cost as they are not currently a JTRS HMS program of record requirement.

## 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
2021	258	23.1	--	--	23.1	3.5	26.6
2022	551	72.6	--	--	72.6	6.2	78.8
2023	783	96.5	--	--	96.5	7.7	104.2
2024	396	43.3	--	--	43.3	4.8	48.1
2025	319	33.5	--	--	33.5	4.2	37.7
2026	534	69.4	--	--	69.4	6.2	75.6
2027	929	128.0	--	--	128.0	9.6	137.6
2028	577	82.4	--	--	82.4	7.0	89.4
2029	252	35.9	--	--	35.9	4.4	40.3
2030	200	28.7	--	--	28.7	4.0	32.7
<b>Subtotal</b>	<b>4799</b>	<b>613.4</b>	<b>--</b>	<b>--</b>	<b>613.4</b>	<b>57.6</b>	<b>671.0</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non End Item Recurring Flyaway BY 2011 \$M</b>	<b>Non Recurring Flyaway BY 2011 \$M</b>	<b>Total Flyaway BY 2011 \$M</b>	<b>Total Support BY 2011 \$M</b>	<b>Total Program BY 2011 \$M</b>
2021	258	19.0	--	--	19.0	2.9	21.9
2022	551	58.6	--	--	58.6	5.0	63.6
2023	783	76.3	--	--	76.3	6.1	82.4
2024	396	33.6	--	--	33.6	3.7	37.3
2025	319	25.5	--	--	25.5	3.2	28.7
2026	534	51.7	--	--	51.7	4.7	56.4
2027	929	93.5	--	--	93.5	7.1	100.6
2028	577	59.0	--	--	59.0	5.1	64.1
2029	252	25.2	--	--	25.2	3.1	28.3
2030	200	19.8	--	--	19.8	2.7	22.5
<b>Subtotal</b>	<b>4799</b>	<b>462.2</b>	<b>--</b>	<b>--</b>	<b>462.2</b>	<b>43.6</b>	<b>505.8</b>

## Low Rate Initial Production

	<b>Initial LRIP Decision</b>	<b>Current Total LRIP</b>
<b>Approval Date</b>	6/17/2011	12/12/2013
<b>Approved Quantity</b>	6350	24653
<b>Reference</b>	Milestone C ADM	ADM
<b>Start Year</b>	2011	2011
<b>End Year</b>	2012	2014

The Milestone C Acquisition Decision Memorandum (ADM) was signed on June 17, 2011, approving entry in the Production and Deployment phase and authorizing the Army to contract for an initial LRIP procurement of 6,250 Rifleman Radios (RR) (AN/PRC-154) and 100 Manpack (MP) radios (AN/PRC-155). The ADM directed the Services to fund to the Independent Cost Estimate position. A follow-on ADM signed July 11, 2012 approved the procurement of an additional LRIP of 13,077 RRs. An October 11, 2012 ADM authorized an additional LRIP procurement of up to 3,726 MPs. A December 12, 2013 ADM authorized LRIP procurement of up to an additional 1,500 MPs.

## Foreign Military Sales

There are no FMS for the JTRS HMS program at this time. JTRS HMS Tactical Radio products are categorized as "Major Defense Equipment" under the International Traffic in Arms Regulations. Export of Significant Military Equipment such as JTRS HMS must be approved by U.S. Department of State when embedded with Type 1 crypto. Coalition partners may purchase JTRS HMS Tactical radios via FMS or possibly Direct Commercial Sales once the JTRS HMS radios successfully complete operational test and satisfy all certification requirements. In all cases export of JTRS HMS products is subject to the following considerations: a previous export for a legacy capability does not constitute automatic approval for that legacy capability instantiated; due to embedded Type 1 crypto, all requests for sales will be adjudicated on a case-by-case basis and approved by the National Security Agency (NSA); Tactical Radios with Waveforms (WF) installed must be certified by NSA; Tactical Radio WFs, as individual products, are not authorized for sale or export. (Sharing of the Link 16 WF with the Multifunctional Information Distribution System (MIDS) participants per the MIDS memorandum of understanding is the only current exception to this rule.) Release guidance for all configurations is closely controlled by NSA, and each sale is adjudicated on a case-by-case basis.

## Nuclear Costs

None

## Unit Cost

### Unit Cost Report

	BY2011 \$M	BY2011 \$M	
Unit Cost	Current UCR Baseline (OCT 2011 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

#### Program Acquisition Unit Cost (PAUC)

Cost	8242.6	9716.8	
Quantity	270951	271202	
Unit Cost	0.030	0.036	<b>+20.00</b> <sup>1</sup>

#### Average Procurement Unit Cost (APUC)

Cost	6987.9	8409.4	
Quantity	270369	270369	
Unit Cost	0.026	0.031	<b>+19.23</b> <sup>1</sup>

	BY2011 \$M	BY2011 \$M	
Unit Cost	Original UCR Baseline (MAY 2004 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

#### Program Acquisition Unit Cost (PAUC)

Cost	9889.2	9716.8	
Quantity	329574	271202	
Unit Cost	0.030	0.036	+20.00

#### Average Procurement Unit Cost (APUC)

Cost	9352.6	8409.4	
Quantity	328514	270369	
Unit Cost	0.028	0.031	+10.71

	TY \$M		
Unit Cost	Current UCR Baseline (OCT 2011 APB)	Current Estimate (DEC 2013 SAR)	TY % Change

#### Program Acquisition Unit Cost (PAUC)

Cost	9201.0	12184.3	
Unit Cost	0.034	0.045	+32.35

#### Average Procurement Unit Cost (APUC)

Cost	7962.5	10856.1	
Unit Cost	0.029	0.040	+37.93

Unit Cost	TY \$M		
	Original UCR Baseline (MAY 2004 APB)	Current Estimate (DEC 2013 SAR)	TY % Change
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	10717.0	12184.3	
Unit Cost	0.033	0.045	+36.36
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	10228.0	10856.1	
Unit Cost	0.031	0.040	+29.03

### <sup>1</sup> Nunn-McCurdy Breach

The JTRS HMS program has identified both a PAUC and an APUC increase over the Current Baseline Estimate of greater than 15%, causing a Significant Nunn-McCurdy Breach. The primary factors which have changed the estimate are based on following Fact of Life changes: change in program Acquisition Strategy (AS) for Full Rate Production (FRP) radios from a single vendor (per radio) to multiple vendors, vehicle integration cost requirements, and changes in the Army Fielding Strategy. A Program Deviation Report (PDR) is forthcoming.

#### Unit Cost Breach Data

Changes from Previous SAR	\$M/Qty.	Percent
PAUC (BY \$M)	0.005	+16.13
APUC (BY \$M)	0.004	+14.81
PAUC Quantity		0.00
PAUC (TY \$M)	0.007	+18.42
APUC (TY \$M)	0.007	+21.21

Initial SAR Information	BY \$M	TY \$M
Program Acquisition Cost	8569.0	10717.0

#### Unit Cost PAUC Changes

The JTRS HMS program has identified a PAUC increase over the Current Baseline Estimate of greater than 15%, causing a Significant Nunn-McCurdy Breach. The primary factors which have changed the estimate are based on the following Fact of Life changes: change in program AS from a single vendor (per radio) to multiple vendors, vehicle integration cost requirements not previously identified as a funding responsibility of the program, and changes in the Army Fielding Strategy (less radios fielded per year). Compounding these impacts, the change to the program's AS delayed the FRP contract award, slipped the program's schedule to the right and the change to the Army Fielding Strategy extended the procurement duration (to FY 2032) further stretching out the procurement lifecycle of the program.

Also contributing to the PAUC increase is the addition of budget for RDT&E tests to prove out the potential new vendors and new radios for both the Rifleman and Manpack Radio as a result of the change in the program AS.

#### Unit Cost APUC Changes

The JTRS HMS program has identified a APUC increase over the Current Baseline Estimate of greater than

15%, causing a Significant Nunn-McCurdy Breach. The primary factors which have changed the estimate are based on the following Fact of Life changes: change in program AS from a single vendor (per radio) to multiple vendors, vehicle integration cost requirements not previously identified as a funding responsibility of the program, and changes in the Army Fielding Strategy (less radios fielded per year). Compounding these impacts, the change to the program's AS delayed the FRP contract award, slipped the program's schedule to the right and the change to the Army Fielding Strategy extended the procurement duration (to FY 2032) further stretching out the procurement lifecycle of the program.

#### **Impact of Performance or Schedule Changes**

The change to the program's AS delayed the FRP contract award, slipping the program's schedule to the right. The change to the Army Fielding Strategy (less radios fielded per year for more years) further stretched out the procurement lifecycle of the program. This schedule impact added additional costs to the program.

#### **Program Management or Control**

The Project Manager for Tactical Radios continues its analysis of program cost increases and is currently staffing a PDR to the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology and the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)). Breach notification in accordance with section 2433 d of title 10, U.S. Code will be submitted to USD(AT&L) and Congress.

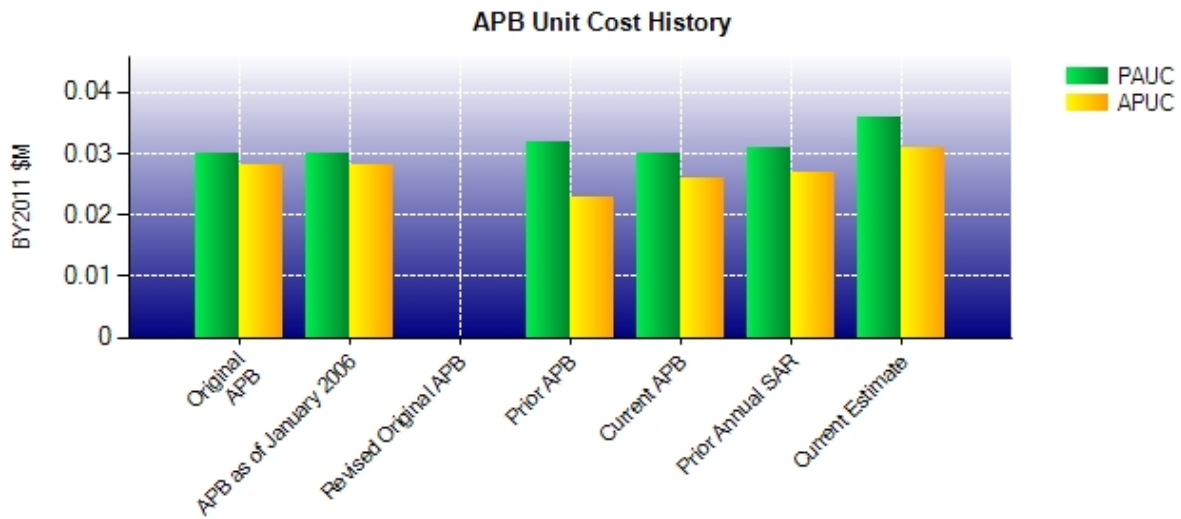
#### **Cost Control Actions**

The HMS Product Office will continue to assess Fact of Life changes as they relate to potentially impacting the program lifecycle cost estimate and potential impacts of competition on the cost of FRP radios.

#### **Nunn-McCurdy Comments**



### Unit Cost History



	Date	BY2011 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
<b>Original APB</b>	MAY 2004	0.030	0.028	0.033	0.031
<b>APB as of January 2006</b>	MAY 2004	0.030	0.028	0.033	0.031
<b>Revised Original APB</b>	N/A	N/A	N/A	N/A	N/A
<b>Prior APB</b>	JAN 2008	0.032	0.023	0.036	0.027
<b>Current APB</b>	OCT 2011	0.030	0.026	0.034	0.029
<b>Prior Annual SAR</b>	DEC 2012	0.031	0.027	0.038	0.033
<b>Current Estimate</b>	DEC 2013	0.036	0.031	0.045	0.040

### SAR Unit Cost History

#### Initial SAR Baseline to Current SAR Baseline (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.033	0.002	0.012	0.003	0.000	-0.018	0.000	0.002	0.001	0.034

**Current SAR Baseline to Current Estimate (TY \$M)**

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.034	0.001	0.000	0.003	0.000	0.005	0.000	0.002	0.011	0.045

**Initial SAR Baseline to Current SAR Baseline (TY \$M)**

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.031	0.002	0.013	0.003	0.000	-0.022	0.000	0.002	-0.002	0.029

**Current SAR Baseline to Current Estimate (TY \$M)**

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.029	0.001	0.000	0.003	0.000	0.005	0.000	0.002	0.011	0.040

**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	APR 2004	APR 2004
Milestone C	N/A	MAR 2008	MAY 2011	MAY 2011
IOC	N/A	FEB 2007	JAN 2012	JUL 2012
Total Cost (TY \$M)	N/A	10717.0	9201.0	12184.3
Total Quantity	N/A	328674	270951	271202
Prog. Acq. Unit Cost (PAUC)	N/A	0.033	0.034	0.045

**Cost Variance**

<b>Summary Then Year \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Prod Est)	1238.5	7962.5	--	9201.0
Previous Changes				
Economic	+1.6	+252.4	--	+254.0
Quantity	--	--	--	--
Schedule	--	+437.5	--	+437.5
Engineering	--	--	--	--
Estimating	-76.1	+377.7	--	+301.6
Other	--	--	--	--
Support	--	-3.0	--	-3.0
Subtotal	-74.5	+1064.6	--	+990.1
Current Changes				
Economic	-1.8	-50.6	--	-52.4
Quantity	--	--	--	--
Schedule	--	+278.9	--	+278.9
Engineering	--	--	--	--
Estimating	+166.0	+1044.5	--	+1210.5
Other	--	--	--	--
Support	--	+556.2	--	+556.2
Subtotal	+164.2	+1829.0	--	+1993.2
Adjustments	--	--	--	--
Total Changes	+89.7	+2893.6	--	+2983.3
CE - Cost Variance	1328.2	10856.1	--	12184.3
CE - Cost & Funding	1328.2	10856.1	--	12184.3

Summary Base Year 2011 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1254.7	6987.9	--	8242.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-69.0	+342.1	--	+273.1
Other	--	--	--	--
Support	--	-78.4	--	-78.4
Subtotal	-69.0	+263.7	--	+194.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+121.7	+768.0	--	+889.7
Other	--	--	--	--
Support	--	+389.8	--	+389.8
Subtotal	+121.7	+1157.8	--	+1279.5
Adjustments	--	--	--	--
Total Changes	+52.7	+1421.5	--	+1474.2
CE - Cost Variance	1307.4	8409.4	--	9716.8
CE - Cost & Funding	1307.4	8409.4	--	9716.8

Previous Estimate: December 2012

<b>RDT&amp;E</b>	<b>\$M</b>	
	<b>Base Year</b>	<b>Then Year</b>
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-1.8
Adjustment for current and prior escalation. (Estimating)	+1.8	+1.8
Update in FY 2013 to reflect Congressional reduction (Navy). (Estimating)	-30.9	-32.5
Update in FY 2020-2032 to reflect additional testing requirements as a result of Full and Open Competition cycles (Army). (Estimating)	+150.8	+196.7
<b>RDT&amp;E Subtotal</b>	<b>+121.7</b>	<b>+164.2</b>

<b>Procurement</b>	<b>\$M</b>	
	<b>Base Year</b>	<b>Then Year</b>
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-50.6
Adjustment to procurement buy profile based on FY 2015 PB (Marine Corps). (Schedule)	0.0	+2.3
Adjustment to procurement buy profile based on FY 2015 PB (Navy). (Schedule)	0.0	+0.5
Delay in the procurement buy profile extending the end date from FY 2023 to FY 2032 (Army). (Schedule)	0.0	+270.9
Adjustment to procurement buy profile based on FY 2015 PB (Air Force). (Schedule)	0.0	+5.2
Update of Recurring Manufacturing methodology to reflect current programmatic and fielding plans (Marine Corps). (Estimating)	+22.9	+34.2
Adjustment for current and prior escalation. (Estimating)	+8.2	+8.4
Update of Recurring Manufacturing methodology to reflect current programmatic and fielding plans (Navy). (Estimating)	+1.3	+2.3
Update of Recurring Manufacturing methodology to reflect current programmatic and fielding plans (Air Force). (Estimating)	+66.9	+103.6
Update of cost methodology to reflect current programmatic and fielding plans and vehicle integration costs. Also reflects adjustments to LRIP actuals in FY 2012 (Army). (Estimating)	+735.2	+961.7
Update to reflect impact of Congressional reduction assessed in FY 2013 (Army). (Estimating)	-66.5	-65.7
Adjustment for current and prior escalation. (Support)	+3.2	+3.7
Update of Other Support costs to reflect current programmatic and fielding plans (Marine Corps). (Support)	-1.9	-2.5
Update of Initial Spare costs to reflect LRIP actuals (Marine Corps). (Support)	+0.9	+1.4
Update of Other Support costs to reflect current programmatic and fielding plans (Navy). (Support)	-0.6	-0.3
Update of Initial Spare costs to reflect LRIP actuals (Navy). (Support)	+0.9	+0.9
Update of Other Support costs to reflect current programmatic and fielding plans (Army). (Support)	+369.1	+515.9
Update of Initial Spare costs to reflect LRIP actuals (Army). (Support)	+23.5	+43.6
Update of Other Support costs to reflect current programmatic and fielding plans (Air Force). (Support)	-7.5	-10.5
Update of Initial Spare costs to reflect LRIP actuals (Air Force). (Support)	+2.2	+4.0

Procurement Subtotal

+1157.8 +1829.0

## Contracts

### Appropriation: RDT&E

Contract Name	<b>Development</b>
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	681.3	N/A	833	925.9	928.2

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract scope changes.

In 2006, the JTRS HMS program was restructured, resulting in cost and schedule above the original baseline. Since then, the baseline was further increased by other in-scope contract changes including the Mobile User Objective System, the modification of the Small Form Factor-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 caused the increase from the Initial Contract Price to the Current Contract Price.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/24/2014)	-0.3	-0.1
Previous Cumulative Variances	-6.9	-4.9
Net Change	+6.6	+4.8
Percent Variance	-0.04%	-0.01%
Percent Complete	+97.69%	

### Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to management decision to implement an Over Target Baseline (OTB).

The favorable net change in the schedule variance is due to management decision to implement an OTB.

### Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

In the December 2011 SAR, the contract was listed as 90% complete; since then, the program underwent an OTB, increasing the Estimate at Complete requiring this final entry.

**Appropriation: Procurement**

Contract Name	<b>Procurement</b>
Contractor	General Dynamics C4 Systems, Inc.
Contractor Location	Scottsdale, AZ 85257
Contract Number, Type	W15P7T-04-C-E405/1, FFP
Award Date	June 17, 2011
Definitization Date	June 28, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
56.5	N/A	6350	532.6	N/A	26705	532.6	532.6

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional LRIP Contract options exercised for Rifleman Radio and Manpack Radio LRIP2/LRIP2A.

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this FFP contract.



## Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	833	833	833	100.00%
Production	21060	22858	270369	8.45%
Total Program Quantity Delivered	21893	23691	271202	8.74%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	12184.3	Years Appropriated	11
Expended to Date	1691.4	Percent Years Appropriated	37.93%
Percent Expended	13.88%	Appropriated to Date	2185.9
Total Funding Years	29	Percent Appropriated	17.94%

The above data is current as of 2/3/2014.

As of February 3, 2014, the Government received 19,327 LRIP Rifleman Radios (RR) and 3,531 LRIP Manpack (MP) radios. February 3 planned figure consists of 17,547 RR and 3,513 MP radios. RR was 1,780 radios ahead of delivery schedule; MP was 18 radios ahead of delivery schedule. In addition, the Government received all 2,052 LRIP SFF-B(v)1 Radios for Nett Warrior which is ahead of the planned delivery schedule. (Note: Nett Warrior Radios are not a part of the JTRS HMS Acquisition Decision Memorandum, and are procured for Program Executive Office Soldier. However, they are a part of the RR Army Acquisition Objective.)

## Operating and Support Cost

### JTRS HMS

#### Assumptions and Ground Rules

##### Cost Estimate Reference:

1. Costs estimated in accordance with Department of the Army Cost Analysis Manual, May 2001.
2. Office of Secretary of Defense Inflation Guidance dated January 2013 was applied.
3. Approved JTRS HMS Cost Analysis Requirements Description updated March 2011 is used as the basis of the estimate.
4. Cost estimate reflects Program Office Estimate as of February 20, 2014.

##### Sustainment Strategy:

###### Rifleman Radio:

All Program of Record (POR) LRIP radios procured under the current development contract will be sustained initially by the prime contractor until expiration of the contract on September 30, 2014. A follow-on Cost Plus Fixed Fee (CPFF) sustainment contract is planned for award to the current vendor with one base year, and one option year period of performance to maintain the software baseline, deliver updated logistics support documentation, deliver sustainment spares, provide field service representative (FSR) support, and furnish technical support to address field/operational issues. Unserviceable radios will be returned to Tobyhanna Army Depot (TYAD) for inspection and testing. Field sustainment of LRIP POR radios and ancillary components will be accomplished through the submission of spares requisitions through the Standard Army Supply System (SASS).

All radios procured under the Full Rate Production (FRP) phase that become unserviceable will be turned-in to TYAD through the SASS. Radios will be returned to the original equipment manufacturer vendor for warranty repair, or replacement, if the cost of warranty support is determined to be reasonable. Upon expiration of the warranty period, there is no current plan to perform depot-level repair of the radio. Final disposition of all unserviceable radios will be accomplished at TYAD. All FRP contracts will contain provisions to procure sustainment spares to replace unserviceable radios and ancillary items requisitioned through SASS, operations, maintenance, training documentation, and the ability to procure the software development environment and data to maintain the software baseline.

###### Manpack (MP):

The current development contract for POR LRIP radios includes fixed-price options for the manufacturing of production ready MP radios for operational test to establish an initial production base, development of logistics support documentation, and sustainment support. A separate CPFF sole source contract is planned for award to the current vendor to provide continued support of LRIP radios following the current development contract. Contractor repair of unserviceable LRIP radios is planned to transition to organic repair at TYAD upon the expiration of the MP radio LRIP sustainment contract.

For FRP, MP radios will be procured through a multiple award, Firm Fixed-Price, Indefinite Delivery/Indefinite Quantity contract. The contract provides for sustainment services, which include: warranties, radio repairs, spares, delivery and update of training material, delivery and update of technical manuals/bulletins, training, FSR support, and the management and updates to the software and hardware baselines.

##### Service Life Breakdown:

Manpack Radio total quantity is 73,064, Service life is 20 yrs.  
 Rifleman Radio Total quantity is 193,279, Service life is 5 yrs.  
 (SFF-D is 3,076 and SFF-B is 950)  
 Total Program Quantity is 270,369

Antecedent Information:

There is no antecedent program; JTRS HMS has a diverse portfolio of radio configurations, ranging in both cost and function, and there is no single DoD program with a comparable set of requirements.

Unitized O&S Costs BY2011 \$K			
Cost Element	JTRS HMS		No Antecedent (Antecedent)
	Average Annual Cost per Radio		N/A
Unit-Level Manpower	0.000		0.000
Unit Operations	0.000		0.000
Maintenance	2.782		0.000
Sustaining Support	0.042		0.000
Continuing System Improvements	0.120		0.000
Indirect Support	0.000		0.000
Other	0.000		0.000
Total	2.944		--

Unitized Cost Comments:

The total O&S cost is the Average Annual Cost x Total Number of Radios (270,369) x 20-year system life. Unitized Cost may differ from total O&S costs due to rounding.

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	JTRS HMS		JTRS HMS	No Antecedent (Antecedent)
<b>Base Year</b>	14710.4	16181.4	15917.4	N/A
<b>Then Year</b>	20019.2	N/A	25190.4	N/A

Total O&S Costs Comments:

The O&S cost variance from the prior SAR is largely due to changes in the program's planned acquisition and sustainment strategy.

O&S Cost Variance		
Category	Base Year 2011 \$M	Change Explanation
Prior SAR Total O&S Estimate December 2012	12,896.601	
Cost Estimating Methodology	0.000	
Cost Data Update	0.000	
Labor Rate	0.000	
Energy Rate	0.000	

Technical Input	0.000	
Programmatic/Planning Factors	+3,020.767	Update of O&S costs to reflect current programmatic and fielding plans.
Other	0.000	
Total Changes	+3,020.767	
Current Estimate	15,917.368	

**Disposal Costs:**

The O&S estimate does not include Disposal costs in the amount of \$1.882B (BY\$ 2011).