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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Selected Acquisition Report (SAR)



Handheld, Manpack, and Small-Form Fit Radios (HMS)

FY 2024 President's Budget

**Defense Acquisition Visibility Environment
(DAVE)**

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Common Acronyms and Abbreviations

\$B - Billions of Dollars
\$K - Thousands of Dollars
\$M - Millions of Dollars
ACAT - Acquisition Category
Acq O&M - Acquisition-Related Operations and Maintenance
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FMS - Foreign Military Sales
FOC - Full Operational Capability
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
Inc - Increment
IOC - Initial Operational Capability
JROC - Joint Requirements Oversight Council
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
O&S - Operating and Support
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
PAUC - Program Acquisition Unit Cost
PB - President's Budget

PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
U.S. - United States
UCR - Unit Cost Reporting
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Handheld, Manpack, and Small-Form Fit Radios

DoD Component

Army

Responsible Office

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Mission and Description

HMS Radios (Handheld, Manpack, and Small Form Fit)

The Handheld, Manpack, and Small Form Fit (HMS) radio program is a single Acquisition Category IC program encompassing Handheld (HH) and Manpack (MP) radios. HMS provides voice and data communication to the expeditionary Warfighter with an on-the-move, at-the-halt, and stationary Line of Sight (LOS)/Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radio systems are software reprogrammable, networkable, multi-mode systems capable of simultaneous voice and data communication. HMS radios will support a variety of other platforms, including tactical End User Devices (EUD) voice and data needs. HMS provides tailorable and scalable, software-defined radio systems meeting U.S. Army, Air Force, Navy, Marine Corps and Special Operations Command communications needs. HMS systems are capable of providing both Classified and Unclassified communications. The radios provide the Single Channel Ground and Airborne Radio System (SINCGARS) legacy waveform for Classified and Unclassified communications. They also provide advanced waveforms (e.g. TrellisWare TSM) that provide Secure but Unclassified (SBU) communications. The MP radio provides the Mobile User Objective System (MUOS) waveform for Tactical Satellite communications. The HMS program is currently in the process of conducting significant testing, including Laboratory and Field Based Risk Reduction events culminating in an Operational Test event. The HH radio suite consists of one-channel Rifleman Radio (RR), two-channel Leader Radio (LR) and Single-Channel Data Radio (in support of Integrated Visual Augmentation System (IVAS)). The RR is a handheld radio that connects Soldiers at the lowest echelon of the Army network. It is a sensitive but unclassified radio system capable of voice and data communications. The LR is a multiband, two-channel handheld radio to be used at the team, squad, and platoon level. The LR will simultaneously support SINCGARS voice interoperability and other advanced networking waveform communications, in one radio with both handheld and mounted configurations. The Single-Channel Data Radio is a secure, two-way tactical radio that provides intra-squad data communications and is considered a support item of the IVAS. The MP Radio is a National Security Agency (NSA)-certified Type 1 radio used for transmission of up to TOP SECRET information. MP is capable of providing two simultaneous channels of secure voice and data communication using SINCGARS, Demand Assigned Multiple Access Satellite Communication, MUOS waveform, and other advanced networking waveforms. The MP provides range extension and connects Soldiers in the lower-tier network to the mid-tier network. It is interoperable with legacy waveforms and capable of route and retransmission. The MP provides networking waveforms connectivity, Networked LOS and BLOS voice and data communications, with both vehicular and man-packable configurations.

Executive Summary

HMS

Program Highlights Since Last Report

- On May 4, 2022, the HMS Soldier Touch Point was completed.
- On June 17, 2022, the IVAS Operational Demonstration was completed.
- On September 6, 2022, the Manpack FRP2 Delivery Order was awarded: 5,444 MP (3,264 L3Harris and 2,180 Collins).
- On September 7, 2022, the Leader Radio FRP2 Delivery Order was awarded: 6,968 LR (4,188 Thales and 2,780 L3Harris).
- On September 30, 2022, the HMS Performance Verification Test was completed.
- On September 30, 2022, United States Pacific Command (PACOM) Tactical Satellite (TACSAT) Modernization fieldings were completed.
- On December 20, 2022, fielding to 2nd Cavalry Regiment was completed. The HMS Radio program requirements are stable. The program did not experience any requirement updates in CY2022. Funding is adequate to meet cost, schedule, and performance objectives. There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
Dec - 2021	On December 16, 2021, the Acquisition Program Baseline was approved.
Aug - 2021	On August 19, 2021, LR and MP received approval for Full Rate Production (FRP).
Jan - 2021	IOT&E was successfully completed on January 22, 2021 for the GEN 2 MP and LR.
Dec - 2020	On December 14, 2020, an ADM authorized the procurement of 10,000 Single-Channel Data Radios (SCDR).
Apr - 2020	An April 2, 2020 ADM authorized an additional Low Rate Initial Production (LRIP) procurement of up to 4,860 LR and 3,440 GEN 2 MP.
Dec - 2019	As a result of the annual Configuration Steering Board, the HMS program Basis of Issue (BOI) was adjusted to support Army Network Modernization priorities. HMS was directed to remove remaining legacy radio variants from the program baseline and incorporate the Single-Channel Data Radio in support of the Integrated Visual Augmentation System (IVAS) into the program baseline.
Jun - 2019	A June 3, 2019 Acquisition Decision Memorandum (ADM) authorized an additional LRIP procurement of up to 2,004 LR and 1,720 GEN 2 MP.
Sep - 2018	A September 6, 2018 ADM authorized an LRIP procurement of up to 3,800 LR.
Sep - 2018	Leader Radio capability on-ramped to the existing Handheld Radio Production Contracts - September 18, 2018
Apr - 2018	An April 12, 2018 ADM authorized an additional LRIP procurement of up to 2,258 GEN 2 MP.
Aug - 2017	In August 2017, in accordance with the approved May 2014 Acquisition Strategy, the program office procured an additional 202 GEN 2 MP (101 per vendor) - the third vendor for GEN 2 MP was terminated for convenience.
May - 2017	Leader Radio Request for Proposal and Manpack Radio test asset delivery order were delayed as a result of anticipated threshold radio waveform adjustments stemming from the 2017 Army Network Review. These adjustments are necessary in order to reduce vulnerabilities and focus on solutions to address capability gaps relative to emerging threats.

Mar - 2017	On July 10, 2018, HMS utilized Other Transactional Agreements to procure 296 LR (148 per vendor) in accordance with the Acquisition Strategy Addendum signed March 8, 2017.
Mar - 2017	Acquisition strategy addendum approved to procure the two-channel, handheld Leader Radio through NDI full and open competition contracts available to all potential industry partners.
Mar - 2017	ACAT IC Delegation received March 17, 2017 naming the Secretary of the Army as the Milestone Decision Authority (MDA).
Jan - 2017	APB Revision Approved - Change 1 to the HMS Production APB was approved on January 6, 2017. This revision corrected schedule events that were previously in APB threshold deviation.
Jun - 2016	Follow-on Operational Test and Evaluation (FOT&E): Manpack with MUOS schedule event completed during the Multi-Service Operational Test & Evaluation (MOT&E) held by Navy MUOS systems. The MOT&E used the Manpack AN/PRC-155 as the platform to test the MUOS waveform and served as the HMS program's FOT&E achieving completion of the APB schedule event on June 20, 2016 when the test report was received.
Feb - 2016	Manpack Radio Production Contract Awards - February 26, 2016
Apr - 2015	Handheld Radio Production Contract Awards - April 29, 2015; 200 LRIP RR were procured during award.
Aug - 2014	IOC: LRIP Manpack Radio schedule event completed.
May - 2014	Acquisition strategy approved to procure Non-Developmental Items (NDI) through two full and open competitions (Rifleman Radio and Manpack Radio) available to all potential industry partners.
May - 2014	In accordance with the program's May 1, 2014 approved Acquisition Strategy, HMS procured 200 GEN 2 RR (100 per vendor) and 153 GEN 2 MP (51 per vendor).
Dec - 2013	A December 12, 2013 ADM authorized LRIP procurement of an additional 1,500 GEN 1 MP
Dec - 2012	The FRP decisions for Rifleman Radio and Manpack Radio slipped from 2012 to 2015 due to a decision to transition to a full and open competition multi-vendor acquisition strategy.
Oct - 2012	An October 11, 2012 ADM authorized an additional LRIP procurement of up to 3,726 GEN 1 MP.
Jul - 2012	A follow-on ADM signed July 11, 2012 approved the procurement of an additional LRIP of 13,077 GEN 1 RR.
Jul - 2012	ADM signed that transitioned program management and execution responsibility to the Department of the Army.
Jul - 2012	In-Process Review: LRIP Manpack schedule event completed.
Jul - 2012	IOC: LRIP Rifleman Radio schedule event completed.
May - 2012	Follow-on Operational Test and Evaluation (FOT&E): Manpack with Mobile User Objective System (MUOS) schedule event completed.
Nov - 2011	Initial Operational Test and Evaluation: LRIP Rifleman Radio schedule event completed.
Jun - 2011	Milestone C Decision - JTRS HMS Milestone Decision Review was held in May 2011 and final approval received in June.
Jun - 2011	The Milestone C ADM signed on June 17, 2011 approved entry into Production and Deployment and authorized the Army to contract for an initial LRIP procurement of 6,250 GEN 1 RR (AN/PRC-154) and 100 GEN 1 MP radios (AN/PRC-155).
Nov - 2005	A Defense Acquisition Board (DAB) re-planning meeting was held to restructure the JTRS Enterprise. JTRS Cluster 5 was renamed JTRS HMS.
Feb - 2005	All JTRS programs were re-aligned under the Joint PEO (JPEO) JTRS.
Jul - 2004	SDD Contract Award - Awarded to General Dynamics C4 Systems in July 2004. A protest was filed, the Government Accountability Office rejected the protest, work resumed in October 2004.

May - 2004

Milestone B Decision - Joint Tactical Radio Systems (JTRS) Cluster 5 program Milestone Decision Review was held on April 26, 2004 and approved in May 2004 to proceed into System Development and Demonstration (SDD).

Schedule

HMS

Events	Milestone Baseline Objective	Current Baseline Objective/Threshold		Current Estimate/Actual	Deviation
Milestone B Decision Complete	Apr 2004	May 2004	May 2004	12 May 2004	
Contract Award Complete	Jul 2004	Jul 2004	Jul 2004	13 Jul 2004	
Milestone C Decision: HMS Complete	May 2011	Jun 2011	Jun 2011	17 Jun 2011	
IOT&E: AN/PRC-154 Rifleman Radio Complete	Nov 2011	Nov 2011	Nov 2011	30 Nov 2011	
MOT&E: AN/PRC-155 Manpack Complete	May 2012	May 2012	May 2012	31 May 2012	
IOC: AN/PRC-154 Rifleman Radio Complete	Jan 2012	Jul 2012	Jul 2012	31 Jul 2012	
IPR: AN/PRC-155 Manpack Complete	Feb 2012	Jul 2012	Jul 2012	31 Jul 2012	
IOC: AN/PRC-155 Manpack Complete	Mar 2013	Aug 2014	Aug 2014	31 Aug 2014	
FOT&E: AN/PRC-155 Manpack with MUOS Complete	Jun 2013	Jun 2016	Jun 2016	30 Jun 2016	
Fielding: AN/PRC-155 Manpack with MUOS Complete	Jun 2014	Jun 2019	Jun 2019	30 Jun 2019	
HMS IOT&E: Generation 2 Products Complete		Jan 2021	Jan 2021	31 Jan 2021	
FRP Decision Review: Generation 2 Manpack Radio Complete		Aug 2021	Aug 2021	19 Aug 2021	
FRP Decision Review: Leader Radio Complete		Aug 2021	Aug 2021	19 Aug 2021	

Notes

The Single-Channel Data Radios (SCDR) reported in this SAR support the Integrated Visual Augmentation System (IVAS) which is a Middle Tier of Acquisition (MTA) Rapid Fielding effort. At such time that IVAS transitions to a major capability acquisition pathway the SCDR will meet all schedule events in accordance with the established IVAS baseline.

Deviation Explanation

Performance

HMS

Performance Characteristics					
Milestone Baseline	Current Baseline Objective/Threshold	Demonstrated Performance	Current Estimate/Actual	Deviation	
(KPP) - Channel and Simultaneous operation Leader Radio					
	The Leader Radio shall support two separate channels simultaneously. The Leader Radio must have the ability to route and retransmission KPP waveforms listed in Table 5.2 and described in Table 5.3. The Leader Radio shall also have the capability to operate ANWf or SINCGARS waveforms on either channel. The Leader Radio shall also have the capability to support additional waveforms listed in Table 7.1.	The Leader Radio shall support two separate channels simultaneously. One channel shall support the SINCGARS voice and data (e.g. digital fires messaging) modes and the second channel shall support ANWf voice and data operational modes.	Objective verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).	Meets Objective	
(KPP) - Energy Capability: Leader Radio					
	Dismounted battery life: 24 hours Mounted power draw: NTE 15 amps	Dismounted battery life: 8 hours Mounted power draw: NTE 15 amps	Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).	Meets Threshold	
(KPP) - Intra-Squad Communication: AN/PRC-154 Rifleman Radio					
	Voice	(T=O) Voice	Objective/Threshold verified by third party test agency Initial Operational Test and Evaluation (IOT&E).	Voice	
(KPP) - Multi-Channel Operations: AN/PRC-155 Manpack					
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(KPP) - Multi-Channel Operations: Generation 2 Manpack					

	<p>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. The MP must also allow simultaneous operations using KPP waveform combinations identified in Table EE-3. In addition the MP must have the ability to route and retransmit waveforms listed as Objective in Table EE-4.</p>	<p>To enable Warfighters to conduct combat missions across the battlefield, any channel of the MP must have ability to operate the KPP waveforms listed in Table EE-2. The MP must also allow simultaneous operations using KPP waveform combinations listed in Table EE-3. In addition the MP must have the ability to route and retransmit KPP waveforms listed in Table EE-4.</p>	<p>Objective verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).</p>	<p>Meets Objective</p>	
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(KPP) - Net Ready (NR) Capability: AN/PRC-154 Rifleman Radio

	<p>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 table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity,</p>	<p>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 declaration table, 3) NCOW RM Enterprise Services 4) IA</p>	<p>Objective/Threshold verified by third party test agency Initial Operational Test and Evaluation (IOT&E).</p>	<p>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 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 table,</p>	
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<p>authentication, confidentiality, and non-repudiation, 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>requirements including availability, integrity, authentication, confidentiality, and non-repudiation, 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>3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, 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>	
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(KPP) - Net Ready Capability: AN/PRC-155 Manpack

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(KPP) - Net Ready Capability: Generation 2 Manpack

<p>Must fully support execution of all operational activities and information exchanges identified in the DOD Enterprise Architecture and solution architectures based on the integrated DOD Architecture Framework (DODAF) content and must satisfy the technical requirements for transition to Net-</p>	<p>Must fully support execution of joint critical operational activities and information exchanges identified in the DOD Enterprise Architecture and solution architectures based on the integrated DOD Architecture Framework (DODAF) content and must satisfy the technical requirements for transition to Net-</p>	<p>Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).</p>	<p>Meets Threshold</p>	
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<p>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 strategy and Net-Centric Services Strategy, and the principles and rules identified in the DOD Enterprise Architecture (DOD IEA), excepting tactical and non-IP communications, 3) Compliant with GIG Technical Guidance to include the Technical View 1 (TV-1) and implementation guidance of GIG Enterprise Service Profiles (GESPs) necessary to meet all operational requirements specified in the DOD Enterprise Architecture and solution architecture views, 4) Information assurance requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an interim Authority to</p>	<p>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 strategy and Net-Centric Services Strategy, and the principles and rules identified in the DOD Enterprise Architecture (DOD IEA), excepting tactical and non-IP communications, 3) Compliant with GIG Technical Guidance to include the Technical View 1 (TV-1) and implementation guidance of GIG Enterprise Service Profiles (GESPs) necessary to meet all operational requirements specified in the DOD Enterprise Architecture and solution architecture views, 4) Information assurance requirements including availability, integrity, authentication,</p>
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<p>Operate (IATO) or Authorization to Operate (ATO) by the Designated Accrediting Authority (DAA), and 5) Supportability requirements to include Selective Availability Anti-Spoofing Module (SAASM), Spectrum and JTRS requirements.</p>	<p>confidentiality, and non-repudiation, and issuance of an interim Authority to Operate (IATO) or Authorization to Operate (ATO) by the Designated Accrediting Authority (DAA), and 5) Supportability requirements to include Selective Availability Anti-Spoofing Module (SAASM), Spectrum and JTRS requirements.</p>			
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(KPP) - Net-Ready Capability: Leader Radio

<p>The Leader Radio shall meet the three principal attributes required for any IT system: Support Military Operations; Enter and be Managed in a Network; and Effectively Exchange Information. (Threshold = Objective). The Net-Ready KPP is required by JCIDS Manual (12 Feb 15) and DODI 8330.01. NR-KPP attributes and the measures of performance (MoP/measures of effectiveness (MoE) are derived from mission analysis, information analysis and systems engineering.</p>	<p>The Leader Radio shall meet the three principal attributes required for any IT system: Support Military Operations; Enter and be Managed in a Network; and Effectively Exchange Information. (Threshold = Objective). The Net-Ready KPP is required by JCIDS Manual (12 Feb 15) and DODI 8330.01. NR-KPP attributes and the measures of performance (MoP/measures of effectiveness (MoE) are derived from mission analysis, information analysis and systems engineering.</p>	<p>Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).</p>	<p>Meets Threshold</p>	
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(APA) - One Channel (Additional Performance Attribute - APA)**					
	One Channel (APA) - Operations Specific Single Channel Radio. The Leaders Radio shall provide a one channel capability including platform embedded, attached modular, or handheld variant(s). Size, weight, power, communication range and classification attributes shall conform to applicable platform specifications and mission needs. One Channel variant shall comply with all Leader Radio KPPs applicable to single channel operations not specified above.	One Channel (APA) - Operations Specific Single Channel Radio. The Leaders Radio shall provide a one channel capability including platform embedded, attached modular, or handheld variant(s). Size, weight, power, communication range and classification attributes shall conform to applicable platform specifications and mission needs. One Channel variant shall comply with all Leader Radio KPPs applicable to single channel operations not specified above.	SCDR meets threshold demonstrated at PM IVAS Operational Demonstration in June 2022. IVAS radios provided data across a Company network; ITN connectivity slated for IVAS 1.1.	Meets Threshold	
(KPP) - Soldier Location: AN/PRC-154 Rifleman Radio					
	Automatic PLI	(T=O) Automatic PLI	Objective/Threshold verified by third party test agency Initial Operational Test and Evaluation (IOT&E).	Automatic PLI	
(KPP) - Sustainment (Materiel Availability (Ao)): Leader Radio					
	0.96	0.75	Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E). Follow-on testing utilized for continued reliability growth.	Meets Threshold	
(KPP) - Sustainment (Operational Availability (Ao)): AN/PRC-154 Rifleman Radio					

	0.99 (Channel)	0.96 (Channel)	Objective verified by third party test agency Initial Operational Test and Evaluation (IOT&E).	0.999 (Channel)	
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(KPP) - Sustainment (Operational Availability (Ao)): AN/PRC-155 Manpack

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(KPP) - Sustainment (Operational Availability (Ao)): Generation 2 Manpack

	0.99 (Channel)	0.96 (Channel)	Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).	Meets Threshold	
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(KPP) - Sustainment (Operational Availability (Ao)): Leader Radio

	Dismounted: 0.99 (Channel) Mounted: 0.97 (Channel)	Dismounted: 0.96 (Channel) Mounted : 0.94 (Channel)	Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E). Follow-on testing utilized for continued reliability growth.	Meets Threshold	
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(KPP) - System Survivability (Resiliency): Leader Radio

	The Leader Radio's ANWf and SINCGARS waveforms are both vulnerable to modern forms of EW attacks. The Leader Radio can provide some forms of mitigation of these threats by use of tactics techniques and procedures and other low detection measures (e.g. time randomization, frequency hopping, receive only mode, and direct sequence spreading). (For current threat to the Leader Radio see Appendix D). If	The Leader Radio's ANWf and SINCGARS waveforms are both vulnerable to modern forms of EW attacks. The Leader Radio can provide some forms of mitigation of these threats by use of tactics techniques and procedures and other low detection measures (e.g. time randomization, frequency hopping, receive only mode, and direct sequence spreading). (For	Threshold verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E). Follow-on testing confirmed fixes post-IOT&E.	Meets Threshold	
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<p>Communication Security (COMSEC) is compromised, the Leader Radio shall be able to receive new COMSEC keys by both Over The Air Rekey (OTAR) and a physically connected device (Threshold). The Leader Radio must survive the effects of chemical, biological and radiological (CBR) and relevant decontamination. The Leader Radio must be able to conduct its mission while contaminated for 72 hours without failure due to contamination. (RATIONALE: Leaders must have secure reliable communications in order to maintain operational security and situational awareness on the battlefield).</p>	<p>current threat to the Leader Radio see Appendix D). If Communication Security (COMSEC) is compromised, the Leader Radio shall be able to receive new COMSEC keys by both Over The Air Rekey (OTAR) and a physically connected device (Threshold). The Leader Radio must survive the effects of chemical, biological and radiological (CBR) and relevant decontamination. The Leader Radio must be able to conduct its mission while contaminated for 72 hours without failure due to contamination. (RATIONALE: Leaders must have secure reliable communications in order to maintain operational security and situational awareness on the battlefield).</p>
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(KPP) - Voice and Data Communication: AN/PRC-155 Manpack

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(KPP) - Voice and Data Communication: Generation 2 Manpack

	Must provide networked voice and data exchange (i.e., mission command information) to support tactical actions while dispersed across the battlefield.	Must provide networked voice and data exchange (i.e., mission command information) to support tactical actions while dispersed across the battlefield.	Objective verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).	Meets Objective	
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(KPP) - Voice and Data Communications: Leader Radio

	The Leader Radio shall provide SECRET voice and data transport communications (C2 and SA) (e.g. Nett Warrior, Fires Warrior, etc.) to Platoon, Squad and Team Leaders using ANWf; and provide SECRET voice and data (e.g. digital fires messaging) communication by SINCGARS to communicate with combat support and enablers.	The Leader Radio shall provide secure but unclassified (SBU) (up to SECRET) voice and data transport communications (C2 and SA) (e.g. Nett Warrior, Fires Warrior, etc) to Platoon, Squad and Team Leaders using ANWf; and provide secure (up to SECRET) voice and data (e.g. digital fires messaging) communication by SINCGARS to communicate with combat support and enablers.	Objective verified by third party test agency at Performance Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).	Meets Objective	
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Requirement Reference

Validated:

- 1.CPD, Mounted and Dismounted Operations Manpack, Version 4_4, Revision 1 Validated by: JROC, February 28, 2020
- 2.CPD, Rifleman Radio CPD Increment 2, Revision 2, Version 2_2 Validated by: JROC, August 12, 2021

Deviation Explanation

No deviations for this program/subprogram

Notes

None

Acquisition Budget Estimate

HMS

Total Acquisition Cost

		Milestone APB	Current Baseline		Budget Estimate PB 2024		
Category	Base Year	Objective (BY\$M)	Objective (BY\$M)	Threshold (BY\$M)	BY\$M	TY\$M	Deviation
RDT&E	2011	1,218.3	1,218.3	1,339.9	1,240.4	1,238.4	
Procurement	2011	7,778	7,778	8,555.8	7,977.9	10,618.4	
MILCON	2011	0	0	0	0	0	
Acq. O&M	2011	76.6	76.6	81.7	80.6	111	
Total		9,072.9	9,072.9		9,298.9	11,967.8	
PAUC	2011	.035	.035	.039	.036	.047	
APUC	2011	.030	.030	.034	.031	.042	

Appropriation Category Deviation Explanations

PAUC Deviation Explanation

APUC Deviation Explanation

Budget Notes

Current APB cost baseline is from the approved FRP Army Cost Position dated July 20, 2021.UPDATE: Current estimate is based on the most recent HMS cost model, "SAR Data Review-Cost Calcs 15Feb2023" using FY22 inflation indices.UPDATE: The SAR funding position is based on PB24 AF2.3 dated Feb 14, 2023.

Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	833	833
Procurement	255162	255162
O&M-Acquired	0	

Quantity Notes

FRP APB

Total Quantity* 255,162

Single-Channel Data Radio 68,000

Rifleman Radio 21,579

Leader Radio 85,964

Manpack 79,569

Navy Manpack Systems 50

*Unit of measure is an HMS radio, which includes multiple variants (Handheld Radio, Manpack, and Single-Channel Data Radio).

The cost, quantities, and subsequent APUC breakout reflects the current program of record.

Unit Cost**HMS****Current UCR Baseline and Current Estimate (Base-Year Dollars)**

Category (\$M) Base Year:2011	Current UCR Baseline	Current Estimate	% Change
Program Acquisition Unit Cost			
Cost	9,072.9	9,298.8	
Quantity	255,995	255,995	
Unit Cost	.035	.036	2.49%
Average Procurement Unit Cost			
Cost	7,778.0	7,977.9	
Quantity	255,162	255,162	
Unit Cost	.030	.031	2.57%

Original UCR Baseline and Current Estimate (Base-Year Dollars)

Category (\$M) Base Year:2004	Original UCR Baseline	Current Estimate	% Change
Program Acquisition Unit Cost			
Cost	8,569.0	7,994.3	
Quantity	329,574	255,995	
Unit Cost	.026	.031	20.00%
Average Procurement Unit Cost			
Cost	8,104.0	6,858.7	
Quantity	328,514	255,162	
Unit Cost	.025	.027	7.60%

Cost Growth Details**Current Baseline PAUC Breach Explanation****Current Baseline APUC Breach Explanation****Original Baseline PAUC Breach Explanation****Original Baseline APUC Breach Explanation****Impacts of Schedule Changes on Unit Cost****Impacts of Performance Changes on Unit Cost****Actions Taken or Proposed to Control Future Cost Growth**

*Risk and Sensitivity Analysis***HMS****Risk and Sensitivity Analysis****Current Procurement Cost(December - 2022)**

A revised FRP APB was approved 16 Dec 2021 incorporating the 20 Jul 2021 Army Cost Position. The most significant cost driver in the HMS cost estimate remains the recurring manufacturing cost for radios. This recurring manufacturing cost estimate assumes high component design maturity and continued unit cost reductions resulting from annual competitive delivery orders.

Current Baseline Estimate (December - 2021)**Original Baseline Estimate (May - 2004)**

The Original Estimate represents the program's Milestone B cost position.

Schedule Risk		
Current	12/31/2022	SINCGARS CT2 by 2QFY24 and sub-component supply chain risks
FRP	12/31/2020	FRP contract award by end of 4QFY21 in order to meet FY22 fielding requirements
MS C	06/30/2011	Manpack software and National Security Agency corrective action issues
MS C	06/30/2011	Mobile User Objective System (MUOS) requirements and availability
MS B	05/31/2004	Waveform Availability
MS B	05/31/2004	Size, Weight, and Power Issues
MS B	05/31/2004	Aggressive schedule for software development and component system testing
Technical Risks		
Current	December 22, 2022	MUOS cryptographic maturity to meet future cease key date requirements
MS C	June 08, 2011	1) Mobile User Objective System (MUOS) requirements and availability 2) Manpack software and National Security Agency corrective action issues
MS B	May 03, 2004	1) Waveform Availability 2) Size, Weight, and Power Issues 3) Aggressive schedule for software development and component system testing

Low Rate Initial Production

HMS

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	06/17/2011	04/02/2020
Approved Quantity	6,350	55,638
Reference	ADM	ADM
Start Year	2011	2011
End Year	2012	2020

Rationale if quantity exceeds 10% of the total number of articles to be procured:

Notes

The Milestone C ADM signed on June 17, 2011 approved entry into Production and Deployment and authorized the Army to contract for an initial LRIP procurement of 6,250 GEN 1 RR (AN/PRC-154) and 100 GEN 1 MP radios (AN/PRC-155). The ADM directed the Services to fund to the OSD CAPE ICE position. A follow-on ADM signed July 11, 2012 approved the procurement of an additional LRIP of 13,077 GEN 1 RR. An October 11, 2012 ADM authorized an additional LRIP procurement of up to 3,726 GEN 1 MP. A December 12, 2013 ADM authorized LRIP procurement of an additional 1,500 GEN 1 MP. In accordance with the program's May 1, 2014 approved Acquisition Strategy, HMS procured 200 GEN 2 RR (100 per vendor) and 153 GEN 2 MP (51 per vendor). Also in accordance with the program's May 1, 2014 approved Acquisition Strategy, an additional 202 GEN 2 MP were procured (101 per vendor) - the third vendor for GEN 2 MP was terminated for convenience in August of 2017. An April 12, 2018 ADM authorized an additional LRIP procurement of up to 2,258 GEN 2 MP. On July 10, 2018, HMS utilized Other Transactional Agreements to procure 296 LR (148 per vendor) in accordance with the Acquisition Strategy Addendum signed March 8, 2017. A September 6, 2018 ADM authorized an LRIP procurement of up to 3,800 LR. A June 3, 2019 ADM authorized an additional LRIP procurement of up to 2,004 LR and 1,720 GEN 2 MP. An April 2, 2020 ADM authorized an additional LRIP procurement of up to 4,860 LR and 3,440 GEN 2 MP. A December 14, 2020 ADM authorized the procurement of up to 10,000 Singled Channel Data Radios (SCDRs) and spares in alignment with the Integrated Visual Augmentation System (IVAS) procurements. In addition, the Government received all 2,052 one-channel Rifleman Radios in support of Nett Warrior. Nett Warrior End User Devices (EUD) are not a part of the HMS program and are procured for PEO Soldier; however, the radio that supports the EUD is a part of the RR Army Acquisition Objective.

Contracts & Efforts

Contract Data	
Contract Number	W91CRB-21-9-P002
Effort Number	
Modification Number	
Award Date	03/25/2021
Definitization Date	
Order Number	
CAGE Code/CAGE Legal Name	60128/Microsoft Corporation
Contract Title	Microsoft - Single Channel Data Radios
Contract Address	Redmond, WA
Contracting Office	ACC-APG
Supported Phase	Production
Contract Strategy	FAR 16.5 (IDDQ)
Contract Type	Other Transaction Agreement
Modification Date	March 25, 2021
Work Start Date	
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TY\$M)

Initial Target Price	Current Target Price	
\$15	\$30.8	
Initial Ceiling Price	Current Ceiling Price	
Contractor EAC	PM EAC	
\$30.8	\$30.8	
Initial Quantity	Current Quantity	Delivered Quantity
5000	10000	0
BAC	BCWP	ACWP

BCWS	Cost Variance	Schedule Variance

Contract Notes:

Factors Contributing to Cost Variance and Projected Effects on Program Costs

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

Contract Data	
Contract Number	W15P7T-15-D-0016
Effort Number	
Modification Number	W15P7T22F0156
Award Date	04/29/2015
Definitization Date	04/29/2015
Order Number	
CAGE Code/CAGE Legal Name	14304 - Harris Corporation
Contract Title	Harris - Handheld Radios
Contract Address	Rochester, NY
Contracting Office	ACC-APG
Supported Phase	Production
Contract Strategy	FAR 16.5 (IDDQ)
Contract Type	Firm-Fixed-Price
Modification Date	September 07, 2022
Work Start Date	April 29, 2015
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$2	\$324.3	
Initial Ceiling Price	Current Ceiling Price	
Contractor EAC	PM EAC	
\$324.3	\$324.3	
Initial Quantity	Current Quantity	Delivered Quantity
100	11020	8495
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

Factors Contributing to Cost Variance and Projected Effects on Program Costs

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

Contract Data	
Contract Number	W15P7T-16-D-0002
Effort Number	
Modification Number	W15P7T22F0056
Award Date	02/26/2016
Definitization Date	02/26/2016
Order Number	
CAGE Code/CAGE Legal Name	14304 - Harris Corporation
Contract Title	Harris Generation 2 Manpack Radio
Contract Address	Rochester, NY
Contracting Office	ACC-APG
Supported Phase	Production
Contract Strategy	FAR 16.5 (IDDQ)
Contract Type	Firm-Fixed-Price
Modification Date	September 06, 2022
Work Start Date	March 21, 2016
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$1.4	\$687.9	
Initial Ceiling Price	Current Ceiling Price	
Contractor EAC	PM EAC	
\$687.9	\$687.9	
Initial Quantity	Current Quantity	Delivered Quantity
0	10067	7696
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

Factors Contributing to Cost Variance and Projected Effects on Program Costs

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

Contract Data	
Contract Number	W15P7T-15-D-0015
Effort Number	
Modification Number	W15P7T22F0155
Award Date	04/29/2015
Definitization Date	04/29/2015
Order Number	
CAGE Code/CAGE Legal Name	23386 - Thales Defense & Security, Inc.
Contract Title	Thales - Handheld Radios
Contract Address	Clarksburg, MD
Contracting Office	ACC-APG
Supported Phase	Production
Contract Strategy	FAR 16.5 (IDIQ)
Contract Type	Firm-Fixed-Price
Modification Date	September 07, 2022
Work Start Date	April 29, 2015
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$2.3	\$333.6	
Initial Ceiling Price	Current Ceiling Price	
Contractor EAC	PM EAC	
\$333.6	\$333.6	
Initial Quantity	Current Quantity	Delivered Quantity
100	9382	4839
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

Factors Contributing to Cost Variance and Projected Effects on Program Costs

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

Contract Data	
Contract Number	W15P7T-16-D-0003
Effort Number	
Modification Number	W15P7T22F0057
Award Date	02/26/2016
Definitization Date	02/26/2016
Order Number	
CAGE Code/CAGE Legal Name	0NYT5 - Collins Aerospace
Contract Title	Collins Aerospace - Generation 2 Manpack Radios
Contract Address	Cedar Rapids, IA
Contracting Office	ACC-APG
Supported Phase	Production
Contract Strategy	FAR 16.5 (IDDQ)
Contract Type	Firm-Fixed-Price
Modification Date	September 06, 2022
Work Start Date	March 21, 2016
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$4.3	\$572.7	
Initial Ceiling Price	Current Ceiling Price	
Contractor EAC	PM EAC	
\$572.7	\$572.7	
Initial Quantity	Current Quantity	Delivered Quantity
0	8220	5219
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

Factors Contributing to Cost Variance and Projected Effects on Program Costs

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

External Government Activities

Activity Title		Government Entity		Supported Phase
CAGE		Work Start Date		
City		State/Province:		
Notes				

Deliveries and Expenditures**HMS**

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	833	833	833	100.00%
Production	60,490	59,021	255,162	23.13%
Total Program Quantity Delivered	61323	59854	255995	23.38%

Expended and Appropriated (TY \$M)

Years Appropriated to date: 19

Total Years Appropriated Funding (Current Baseline): 31

Percent Years Appropriated: 61.29%

Then-Year Funding Appropriated as Percentage of Total Acquisition Estimate: 45.64%

Then-Year Funding Expended as Percentage of Total Acquisition Estimate: 38.18%

Total Acquisition Cost: 11,967.8

Deliveries & Expenditures Notes:

- On September 6, 2022, the Manpack Radio FRP2 Delivery Order was awarded: 5,444 MP (3,264 L3Harris; 2,180 Collins). As of December 14, 2022, a total of 893 MPs have been delivered.

- On September 7, 2022, the Leader Radio FRP2 Delivery Order was awarded: 6,968 LR (4,188 Thales; 2,780 L3Harris). As of December 14, 2022, a total 255 of LRs have been delivered.

Operating and Support Costs

HMS

O&S Cost Breakdown:

Category (BY\$ Million)	AN/PRC-154-A
Unit-Level Manpower	24.6
Unit Operations	140.9
Maintenance	160.5
Sustaining Support	11.1
Continued System Improvements	88.3
Other	.0
Total	425.4

Category (BY\$ Million)	AN/PRC-155
Unit-Level Manpower	34.3
Unit Operations	108.2
Maintenance	596.5
Sustaining Support	10.8
Continued System Improvements	85.4
Other	.0
Total	835.2

Category (BY\$ Million)	HMS Radios
Unit-Level Manpower	.1
Unit Operations	.0
Maintenance	6.7
Sustaining Support	.0
Continued System Improvements	.0
Other	.0
Total	6.8

Cost Estimate Source: CCP dated July 20, 2021

O&S Cost Notes:

Total Program O&S Cost Compared with Baseline					
	Current Baseline				
	Objective (BY\$M)	Threshold (BY\$M)	Current Estimate (BY\$M)	Current Estimate (TY\$M)	Deviation
Total O&S	1,399.9	1,539.9	1,267.4	2,091.8	

Note:

None

O&S Cost Deviation Explanation

Operating and Support Costs - Disposal and Unitized Costs**HMS****Annual Unitized O&S Cost Definition and Calculation Relative to Total O&S Cost:**

Sustainment Factors	System Name: Leader Radio	Antecedent System Name: Manpack Radio
Quantity to Sustain	85,964	73,938
Unit of Measure	Radio (R/T)	Radio (R/T)
Unit Expected Service Life	15	15

Base Year:

Annual Unitized O&S Cost by Category Base Year \$ Unit:(\$K)	System Name: Leader Radio	Antecedent System Name: Manpack Radio
Unit-Level Manpower	24.6	34.3
Unit Operations	140.9	108.2
Maintenance	160.5	596.5
Sustaining Support	11.1	10.8
Continued System Improvements	88.3	85.4
Other		
Total O&S	425.4	835.2

Disposal/Demilitarization Cost Estimate

(Base Year \$Millions)	System Name: Leader Radio	System Name: Manpack	System Name: Single-Channel Data
Total Disposal	19.6	24.6	12.23

Cost Estimate Source - Disposal	
Type:	Component Cost Position
Approval Authority and Date:	ASA (FM&C) 07/20/2021
Note:	
Disposal Cost Notes:	
Current estimate is based on the most recent HMS cost model, "SAR Data Review-Cost Calcs 07Feb2023" using FY22 inflation indices.	
Additional O&S Estimate Assumptions:	

Sustainment Strategy:

Handheld and Manpack Radio quantities do not include Gen 1 R/Ts.

Antecedent Estimate Assumptions:

N/A