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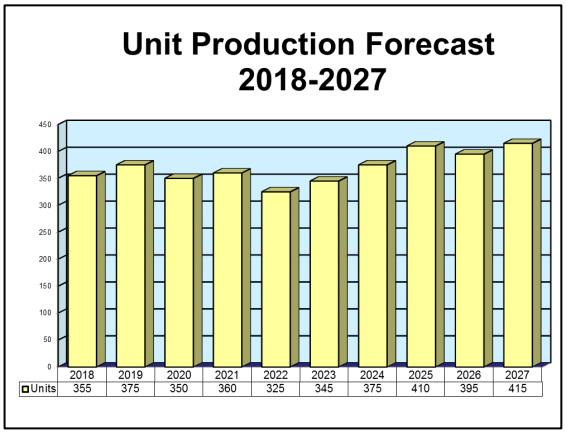
Soldier Radio

Outlook

- FI projects that defense departments worldwide will buy some 3,705 Soldier Radios over the next decade. This number is conservative, given the lack of sales data and contract information
- The capacity of Soldier Radios to link with each other on an impromptu basis using a radio-to-radio, "self-configuring" mobile wireless network makes it attractive to potential customers



Orientation

Description. The Soldier Radio is a software-defined wideband networking radio designed for dismounted soldiers and both manned and unmanned vehicles and aircraft. The Soldier Radio is manufactured by Harris Corporation (formerly Exelis).

Sponsor

Harris,
Night Vision and Communications Solutions
7310 Innovation Blvd
Fort Wayne, IN 46818 USA
Tel: + 1 (260) 451-4600
Website: http://www.harris.com

Status. Available for sale.

Application. Communications.

Price Range. Forecast International estimates the price of one Soldier Radio to be $4,000. Note that this amount is highly speculative, since no Soldier Radio sales or contract information has been made available.

Contractors

Prime

Harris, Night Vision and Communications Solutions	http://www.harris.com, 7310 Innovation Blvd, Fort Wayne, IN 46818 United States, Tel: + 1 (260) 451-4600, Prime

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Soldier Radio

Technical Data

Frequency Range
- VHF: 30-88 MHz
- UHF: 225-450 MHz
- L-Band: 1,250-1,390 MHz and 1,710-1,850 MHz

Transmit Power
- VHF: 5 W
- UHF: 2 W
- L-Band: 2 W

Channels
- Up to 9,000 UHF frequency channels (25 kHz steps)
- Up to 40,000 frequency channels for all bands (25 kHz steps)

Bandwidth
- Up to 1.2 MHz with SRW

Modulation
- QBL-MSK, CPM, FM, FSK

Receiver Sensitivity
- Waveform and mode dependent

Size
- 22.7 cm x 7.6 cm x 6.0 cm, including battery (8.94 in x 3.00 in x 2.37 in, including battery)

Weight
- Radio: 0.66 kg (1.45 lb)
- Radio and battery: 1.02 kg (2.25 lb)

Input Power
- Primary battery (rechargeable), 9.5-16.8 VDC

Reliability
- > 5,000 hr MTBF at 55°C

RF Antenna
- Single TNC connector, 50 ohm

GPS Antenna
- Input for external SAASM device, RS-232, and 1 PPS

Audio
- Custom 11-pin; supports standard 6-pin audio/fill

Key Fill
- DS-101

Data
- USB (IP over USB)

Control
- USB (IP over USB); SNMP MIB

Function Switch
- Off/zero/fill/on/standby

Preset Switch
- 10-position software programmable

Voice
- CNR voice for SRW, eliminating VoIP delay CVSD, MELP 1,200, and MELP 2,400 for JTRS JBW

Compliance
- SCA 2.2.2

Operator Keypad
- 5 button

Operator Display
- 2-line, NVG compatible

Internal Commercial GPS
- L1 CA code

Automatic Position Reporting
- Provides own PLI for compatible waveforms

Waveforms
- SRW, JBW

Waveform Storage
- At least 3 waveforms (based on SRW size)

Battery
- Military-standard PRC-148 battery

Security
- Embedded AARIS-777

Operating Environment
- Temperature: -32°C to 60°C
- Humidity: 95% non-condensing
- Rain: 1.8 in/hr and 40-mph wind
- Immersion: 2 m, 30 min
- Sand and Dust: Method 510.5 procedures I and II
- Vibration and Shock: Loose cargo vibration, transit drop
- Withstands salt-fog and dust

Spearhead Radio, which is similar to Soldier Radio. Both are manufactured by Harris.

Source: Exelis

Program Review

The key feature of the Soldier Radio is its ability to link to other mobile Soldier Radios on an impromptu basis using a peer-to-peer (radio-to-radio), "self-configuring" mobile wireless network.

Development of the Soldier Radio began in the late 1990s/early 2000s under a mobile communications program run by the U.S. Defense Advanced Research Projects Agency (DARPA).

In November 2006, the U.K.'s Future Integrated Soldier Technology (FIST) program performed a range of tests on the Soldier Radio at the British Army's Infantry Trials and Development Unit (ITDU) in Warminster.

In October 2007, an Exelis executive told Forecast International that the latest version of the company's Soldier Radio was in development testing and that Exelis expected the radio to be available for sale in early 2008.

In May 2009, Exelis (now Harris) reported that it had successfully demonstrated the porting of the Joint Tactical Radio System (JTRS) Bowman Waveform (JBW) to a handheld, software-defined radio, resulting in over-the-air compatibility between the Soldier Radio and the U.K.'s Advanced Digital Radio Plus (ADR+). This demonstration took place at Multinational Experiment 3.0, hosted by Future Combat Systems' Joint Interagency Multinational Interoperability initiative at Fort Monmouth, New Jersey.

This was followed in October 2010 by Harris Corp's announcement that it and Exelis had successfully exchanged voice and data between the Harris PRC-117G manpack and Exelis' Soldier Radio development model using Soldier Radio Waveform (SRW) Version 1.01.1C. This exchange marked the first time that independently developed tactical radios interoperated using open-standard wideband JTRS technology, according to Harris. The SRW is a key software communications waveform being developed under the JTRS program. The SRW is being developed for the U.S. Department of Defense to serve as a standard for wideband tactical communications.

In September 2011, the JTRS Reference Implementation Laboratory (JRIL) conducted an SRW Interoperability Quicklook (SIQ) field exercise. The U.S. government's JTRS test engineers successfully demonstrated the formation of a heterogeneous "SRW Island" composed of six unique types of SRW-capable radio platforms, including the Soldier Radio. The objective of the exercise was to evaluate the effectiveness of recent SRW patches and parameter updates on platform interoperability, and performance in a field environment.

In February 2012, Exelis announced that it had delivered an updated JTRS JBW to the JTRS Information Repository as part of a $4.2 million delivery order that also included Soldier Radios. The Soldier Radios delivered to the JTRS Program Executive Office via this sale would be transferred to the U.K. government for upcoming JBW assessment and trials.

Soldier Radio

In December 2014, Exelis announced that it had been awarded a direct commercial contract valued at $30 million to provide an existing international customer with single and dual vehicular radio systems, installation kits, and dismounted Soldier Radio systems. This is the last contract award announced involving the Soldier Radio.

Funding

Harris Corp

Selected Acquisition Reports (SARs)

The Department of Defense (DoD) periodically releases Selected Acquisition Reports (SARs) that summarize the latest estimates of cost, schedule, and performance status for Major Defense Acquisition Programs (MDAP). These reports are prepared annually in conjunction with submission of the president's budget. (Subsequent quarterly exception reports are required only for those programs experiencing unit cost increases of at least 15 percent or schedule delays of at least six months.)

The total program cost estimates provided in the SARs include research and development, procurement, military construction, and acquisition-related operations and maintenance. Total program costs reflect actual costs to date as well as future anticipated costs.

See below for instructions on how to view the annual SAR related to this particular report.

Online and DVD Clients – Click links below.
Hard-Copy Clients – Insert the CD located in sleeve at the front of the binder. (Electronic version updated quarterly.)

Contracts/Orders & Options

Contractor	Award ($ millions)	Date/Description
ITT Exelis	4.20	Feb 2012 – The Soldier Radios delivered to the JTRS Program Executive Office in this sale would be transferred to the U.K. government for upcoming JBW assessment and trials.
Exelis	30.00	Dec 2014 – A direct commercial contract to provide an existing international customer with single and dual vehicular radio systems, installation kits, and dismounted Soldier Radio systems.

Timetable

Month	Year	Major Development
	Late 1990s/ early 2000s	Development of Soldier Radio begins
Nov	2006	U.K.'s FIST program tests ITT Exelis' Soldier Radio
Sep	2007	Soldier Radio believed to have been tested at C4ISR On-the-Move Experimentation at Fort Dix, New Jersey
May	2009	ITT Exelis successfully demonstrates porting of JBW to handheld software-defined radio, resulting in over-the-air compatibility between Soldier Radio and U.K.'s ADR+
Oct	2010	Harris Corp and ITT Exelis successfully exchange voice and data between Harris' PRC-117G manpack and ITT Exelis' Soldier Radio development model using SRW Version 1.01.1C

Month	Year	Major Development
Sep	2011	U.S. government's JTRS test engineers demonstrate formation of heterogeneous "SRW Island" composed of six unique types of SRW-capable radio platforms, including the Soldier Radio
Feb	2012	ITT Exelis delivers updated JTRS JBW to JTRS Information Repository as part of delivery order that also included Soldier Radios. Soldier Radios delivered to JTRS Program Executive Office in this sale would be transferred to U.K. government for JBW assessment and trials
Dec	2014	Exelis (now Harris) awarded $30 million direct commercial contract to provide existing international customer with single and dual vehicular radio systems, installation kits, and dismounted Soldier Radio systems

Worldwide Distribution/Inventories

The Soldier Radio is being tested by the **U.S. Department of Defense** (mainly the **U.S. Army**). The **U.K. government** has purchased an undisclosed number of Soldier Radios for use in testing the JTRS Bowman Waveform. Also, an international customer of Exelis purchased an undisclosed number of Soldier Radios.

Forecast Rationale

Public information regarding the Harris Soldier Radio is scarce. The most recent contract was awarded in December 2014, when Exelis announced that it had received a $30 million direct commercial contract to provide an existing international customer with single and dual vehicular radio systems, installation kits, and dismounted Soldier Radio systems.

FI projects that defense departments worldwide will procure at least 3,700 Soldier Radios over the next 10-plus years. This number is very conservative, given the lack of sales data and contract information. FI's projection is being driven by Defense Department requirements for military communications that have ad hoc networking capabilities.

The Soldier Radio is a software-defined wideband networking radio designed for dismounted soldiers and both manned and unmanned vehicles and aircraft. The Soldier Radio is manufactured by Harris Corporation (formerly Exelis).

What makes the radio appealing to potential customers is its ability to link to other mobile Soldier Radios on an impromptu basis using a peer-to-peer (radio-to-radio), "self-configuring" mobile wireless network. FI expects this attribute to support sales of the radio.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			
	Thru 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Harris (Prime)												
Soldier Radio Military <> Worldwide <> Department of Defense												
	650	355	375	350	360	325	345	375	410	395	415	3,705
Total	650	355	375	350	360	325	345	375	410	395	415	3,705