

Contractor to Upgrade Joint Force Radios by 2025

■ A Virginia-based defense contractor will provide a smaller, faster radio system with upgraded capabilities to the U.S. military in the next four years.

Leonardo DRS revealed its new technology, the next-generation joint tactical terminal, in June. The system is 60 percent lighter and smaller than the legacy terminal it produced for the joint force in recent years, according to company officials.

The integrated broadcast service transceiver provides near real-time battlespace awareness of millions of threat and survivor tracking reports daily and will be used for planning and executing missions.

Production orders will start in July 2022 and continue through 2027. The Army awarded Leonardo DRS \$250 million for the effort.

John Trube, Leonardo DRS business development lead, touted the system, noting that he personally used a legacy version of the system while flying as a member of Air Force Special Operations Command.

"It was invaluable in terms of situational awareness that it provided," he said in an interview.

However, not all personnel have access to the integrated broadcast service, he said. There is a "severe shortage" of terminals which has required joint forces to operate with a reduced integrated broadcast service intelligence dissemination capability, according to a 2019 Army solicitation document.

"A smaller, better, faster capability ... allows the dissemination of IBS intelligence to the force that keeps everybody on the same page, and in my mind, will dramatically increase mission effectiveness by increasing situational awareness," Trube said.

The upgraded terminal's modularity offers users a choice between different configurations depending on their needs, he added.

"Anything that frees up the space inside of a combat vehicle is going to be appreciated by the soldiers," he said.

Paul Niedermier, Leonardo's program manager for the joint tactical terminal next-generation program, added that modularity for the terminal could cut down on maintenance. Warfighters wouldn't have to be trained on configurations unnecessary for their missions, and there would be fewer parts to replace.

"Because we use the same base transceiver unit between all three configurations, it's going to lower the sustainment cost," he said.

Additionally, the terminal was built with ruggedness in mind. The module the terminal is built around has a seven-year battery life, and the batteries can be replaced in the field, Niedermier said. It can also withstand extreme hot and cold temperatures. - MR

Coast Guard To Build Digital Twin for Polar Star

■ The Coast Guard will make a digital copy of its only — and rapidly aging — heavy icebreaker as part of an effort to extend its service life.

Canada-based manufacturer Gastops will collect data on the USCGC Polar Star — a ship built in the 1970s — to create a computer model that can undergo risk assessments at a relatively low cost, said Shaun Horning, president and CEO of the company.

"The value is that if we find an issue ... it can be fixed and resolved, and the cost is probably two orders of magnitude less than if you found it when you had equipment on the ship and then you had to go and make physical changes," he said during an interview.

Engineers will be able to test the icebreaker's performance during various maneuvers such as turning and navigating in icy environments. Based on the trials, engineers can suggest improvements to the platform's design, he said.

Icebreakers are a priority for the service. President Joe Biden's fiscal year 2022 budget request included \$15 million to support the Polar Star's life extension effort. The Coast Guard is working to build a new fleet of heavy icebreakers known as Polar Security Cutters. In 2019, VT Halter Marine was awarded a \$745.9 million fixed-price, incentive-firm contract for the detail design and construction of the first Polar Security Cutter, which is scheduled to start construction this year in Pascagoula, Mississippi, and be delivered in 2024.

Meanwhile, replacing the Polar Star's 30-year-old analog control system with a digital control system

will be one aspect of the refurbishment that will need to be tested extensively, Horning noted.

"The control system is a particular challenge because you have this machinery built and designed in the 1970s," he said. "There are all sorts of

intricacies in the existing control strategies that we're going to be able to test and exercise with the computer model, and identify gaps that they have in their current design with that digital system and give them the opportunity to fix those."

Because of the ship's age, it will be challenging to find all of the data necessary to build a digital replica of the vessel and some of it will have to be estimated, Horning said.

Gastops will finish the creation of the digital twin this fall, giving the Coast Guard about a year to assess the ship's new capabilities before the project's expected completion. - MR

