Northrop Grumman Lightens StarLite for UAS Applications

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by Bill Carey

Northrop Grumman displayed this model of its extended range StarLite surveillance radar at the Association of the U.S. Army Convention in Washington, D.C. (Photo: Bill Carey)

Northrop Grumman has improved the range and reduced the weight of its AN/ZPY-1 StarLite multimode surveillance radar, which the company is proposing as a sensor for the U.S. Army's RQ-7B Shadow, the Navy's future MQ-8C Fire Scout and other manned and unmanned aircraft.

Mike Lobb, Northrop Grumman Electronic Systems director of business development, said the company has reduced the radar's weight by 20 pounds to 45 pounds (20 kg) and replaced its patch antenna with a larger, slotted antenna, doubling its range. The weight reduction was achieved by combining the radar power supply and processor and incorporating a Systron Donner inertial system. The Ku-band radar consists of an active electronically scanned array in elevation, mounted on a rotating, mechanical gimbal with 360-degree field of regard in azimuth.

StarLite is the radar program of record for the Army's MQ-1C Gray Eagle unmanned aircraft system, providing synthetic aperture radar (SAR), ground moving target indicator (GMTI) and dismount moving target indicator (DMTI) modes. The DMTI mode tracks individuals moving on the ground to a range of five miles (8 km), said Lobb, who spoke at the Association of the U.S. Army (AUSA) Convention in Washington, D.C. "There's a huge value in knowing where our own troops are, especially when you're doing joint [or] coalition operations," he added. The company has delivered half of the 174 radars ordered for the MQ-1C since 2008. Eighteen of the radars on order will be the extended-range version, Lobb said.

Last year the company supplied the StarLite radar to the Army as a quick-reaction capability for the Lockheed Martin persistent threat detection system (PTDS) tethered aerostat deployed to Afghanistan. Lobb said the radar will be part of Northrop Grumman's proposal to the Navy for the MQ-8C Fire Scout, based on the Bell 407 helicopter. The company is also working with Navmar Applied Sciences, of Warminster, Pa., to integrate the radar on the latter company's TigerShark UAS "at the Navy's request." Other potential customers the company is eyeing are the U.S. Department of Homeland Security, which operates General Atomics Predator and Guardian UAS, and NATO countries should the radar become exportable, Lobb said.