Roke Introduces Cortexa Guardian Counter-UAS Solution

In late April, UK-based technology company **Roke** officially launched its first Counter-Uncrewed Aerial System (C-UAS) solution, named Cortexa Guardian, saying it has already been "tested, validated and deployed with UK and northern European military partners." A company official confirmed Cortexa Guardian is currently in the middle of an "operational evaluation" with an undisclosed customer.

According to Chris Briggs, Head of Integrated ISTAR at the company, customers are using the C-UAS solution for "very particular operations related to events in the world." "One of our customers has gone from acceptance testing into operational evaluation," he said. "So, they are using it for live activity against a genuine threat."

Developed with the support of the British Army, Cortexa Guardian has been designed as an easy-to-use and rapidly deployable C-UAS capability, particularly relevant to mobile combat units operating at the tactical edge of the battlefield. Roke's managing director, Marc Overton, described how the solution supports dispersed units, forward operating bases and wider force protection tasks. "Small unmanned systems are among the most disruptive threats facing defence and security forces today. Countering them effectively requires capability that can be integrated rapidly, adapted as threats evolve, and used by the people who need it most, not just specialists," he said.

A company statement also underpinned how an operator could be trained on the system in a matter of "days," as opposed to months, as is the case with many C-UAS specialists. Set-up time can lie anywhere between two and eight minutes, according to the company.

Featuring a four-panel EchoGuard radar from Echodyne and the Podview electro-optical/infrared (EO/IR), pan-tilt-zoom (PTZ) camera by Overview, Cortexa Guardian provides end users with 360-degree coverage and the ability to detect "larger UAS" up to 2,500 meters away and

“more typical [UAS] threats” as far as 1,000 meters.

Data feeds from the tripod-mounted sensors are fuzed together by Roke’s AI-powered and high-resolution software system, RapidEO, which offers operators the ability detect, identify and track multiple threats at the same time.

Briggs confirmed each EchoGuard radar sensor retains the capacity to detect up to 20 targets each. He went onto explain how threat information is then uploaded to end user devices featuring Tactical Assault Kit (TAK) software, for example, typically used by special operations forces and forward-deployed combat units.

Discussing additional concepts of employment, Briggs explained how Cortexa Guardian is also suited to supporting mobile, light infantry and cavalry units operating at the edge. “The vehicles are high value targets for drones, so they want to hide them in a tree line for some kind of cover,” he said. “But they also want a counter-drone capability. So what they can do is pick up the Cortexa Guardian, kick out the tripod legs, run it either on vehicle power or radio batteries or any power supply of their choice, then stick it on a rooftop or run it out 200-500 meters away in the direction of the threat [to avoid counter-fires].”

Briggs also suggested Cortexa Guardian could be employed as part of a wider, layered approach to C-UAS. “We’ve tried to find this balance between multi-threat, multi-access, but you do need to think of it in a layered context,” he said, confirming the system employs the NATO-compliant SAPIENT (Sensing for Asset Protection with Integrated Electronic Networked Technology) protocol to cue effectors.

Engineering integration has recently been completed for Roke’s “EM-Vis Deceive” EW payload, Briggs said, before confirming an evaluation process considering the integration of kinetic and non-kinetic effectors had already started. Potential applications could include high power microwave; high energy laser; and interceptor drones, as well as medium/high caliber weapon systems, he said. “What we want to do is write one effector gateway that allows the customer to bring

their effector to play and have an open marketplace.”

Additional upgrades on Roke’s roadmap include improvements in size, weight and power. Specifically, these include increased resolution of cameras for improved range performance, as well as an aspiration to create “true sense on-the-move” capability. “A lot of integrators are interested in that, and we are working with partners to do that,” Briggs said.