UK DASA Funds Remote Radio Head Demonstrator for Counter-RCIEDs

By Richard Scott

Allen-Vanguard (Tewkesbury, UK) has been funded by the UK Ministry of Defence (MoD) to develop novel remote radio head (RRH) technology to improve the defeat of radio-controlled improvised explosive devices (RCIEDs).

The MoD, through its Defence and Security Accelerator (DASA) program, last year issued a call for novel Radio Frequency (RF) techniques and technologies able to improve counter-RCIED capability. Allen-Vanguard responded to "Challenge 3" of the DASA call, which invited proposals for new or novel hardware and ancillaries.

According to the company, the RRH concept is intended to maximize the efficiency, and hence increase the inhibition range, delivered by electronic countermeasures systems while minimizing size, weight and power. However, this approach presents a number of technical challenges with regard to thermal management (when reducing size and weight) and the application of specialist techniques to maintain signal fidelity and synchronization.

The demonstrator will also use RF-over-Fiber (RFoF) technology to distribute multiple wideband RF signals between a software defined radio and the high-power multi-band RRH. RFoF eliminates cable losses between the power amplifier and antenna, and affords superior bandwidth and isolation performance.

DASA funding is intended to lead to the development of a RRH demonstrator that will de-risk several key areas associated

with its development and use in a vehicle-mounted RCIED application. To deliver the project, Allen-Vanguard has partnered with Plextek Services (using Artificial Intelligence generative design to derive a SWaP-efficient cooling scheme) and Pulse Power and Measurement (who will optimize the application of RFoF technology).