DARPA Looks to Antenna Innovations Under BRIDGES

By Richard Scott

Novel design approaches for Next Generation Antennas are being sought by the Defense Advanced Research Projects Agency (DARPA) under a topic forming part of the agency's wider Bringing Classified Innovation to Defense and Government Systems (BRIDGES) program.

BRIDGES has been established by DARPA to connect and foster innovation from small companies that traditionally do not work with the US government in order that they can be applied to classified DOD research and development efforts. The agency plans to periodically solicit responses to various technical topics under the BRIDGES umbrella.

In a research solicitation published on 13 April, DARPA's Strategic Technology Office said that it was seeking innovators "capable of providing new and disruptive ideas with regards to antenna design, materials, manufacturing or processing that can offer significantly increased performance and/or substantial reduction in size, weight, power, and cost (SWaP-C) compared to current state of the art."

Within DARPA, the Strategic Technology Office is responsible for developing novel technology for active and passive sensing across all phenomenology (radio frequency, acoustic, electro-optic/infrared) in all physical domains (air, space, sea, and land). Although current sensing systems are highly capable, the agency notes that these still have shortcomings "that limit the Department of Defense's ability to procure and employ them in ways that enable persistent, high-quality sensing at low-cost and low-power."

Antenna design is an area where the commercial world has leapt

ahead of the military. “In the defense space, we’re at least 10 years behind state of the art in antennas,” said program manager Greg Kuperman in a statement released by DARPA. “There’s a gold mine of untapped technical capability and potentially revolutionary concepts in small and large commercial companies…that could provide solutions to national security needs.”

As part of BRIDGES, the Next Generation Antennas topic is looking at innovative antenna concepts with applications across all phenomenology and all physical domains, although priority will be given to technologies capable of operating in both the air and space domain.

Proposals should be submitted to NexGenAntennas_BRIDGES@DARPA.mil. An initial round of evaluations will consider proposals received by May 31, 2023, although DARPA will continue to accept and evaluate proposals on a rolling basis until April 12, 2024. Any award made for this topic area addendum under DARPA-RS-23-02 will result in the company being invited to join the BRIDGES consortium.