

AFRL Plans Mjolnir HPM Weapon Prototype

The Air Force Research Laboratory's (AFRL's) Directed Energy Directorate (Kirtland AFB, NM) has disclosed plans to develop a new high-power microwave (HPM) weapon system prototype intended to leverage from AFRL's existing Tactical High-Power Operational Responder (THOR) technology demonstrator. Given the name Mjolnir – recounting mythical Norse god Thor's hammer – the new system is intended to demonstrate advances in HPM technology for the counter unmanned aerial systems (UAS) mission.

AFRL's goal with Mjolnir is to develop a "blueprint" for industry partners in order to grow the embryonic industry, and to ensure that a future HPM weapon can be economically produced in volume. The current THOR system has been under test since 2019, including a 2020 field demonstration in Africa. Designed to be able to disable the electronics in multiple UASs, so providing a capability against swarm attacks, the system is housed in two standard 20-ft containers that can be deployed by air and assembled by a crew of just two.

On July 28, the Directed Energy Directorate's High-Power Electromagnetics Division (AFRL RDH) issued a call (FA9451-21-S-0001 Call 0006) for the follow-on Mjolnir effort under its Directed Energy Technology Experimentation Research (DETER) program. The Mjolnir project aims to "procure a single, near-production representative, cost-effective counter-unmanned aerial system (cUAS) that is suited to operational environments and performs at levels equal to or greater than AFRL's existing Tactical High-Power Microwave Operational Responder (THOR) cUAS prototype. This prototype development intends to capitalize on earlier high-power microwave (HPM) systems and enable future transition to a program of record," according to the program description. Program officials anticipate awarding a single contract, valued at approximately \$20 million, for the 36-month Mjolnir effort.

AFRL is working closely with cross-service partners in the Joint Counter Joint Counter-Small Unmanned Aircraft Systems Office and the Army's Rapid Capability and Critical Technologies Office. The Mjolnir HPM program is planned to start later in 2021, with the delivery of the prototype weapon scheduled for 2023. Proposals are due by September 13. The contracting point of contact is Ms. Deborah Moyer, +1 (505) 853-6494, e-mail deborah.moyer@us.af.mil. – R. Scott and J. Knowles