Operational Planning Simulations of HPM-equipped Swarm Engagements

HPM weapons (represented by cone shapes) engaging multiple attacking drones at ones (photo credit: militaryaerospace.com)

Problem Statement

- Continue development of mission planning tool for counter-UAS simulations for **modeling dynamics and attrition and optimizing for best tactics / strategies.**

- Package existing software into graphical-user interface (GUI), usable by non-researchers

- Specifically tailor existing simulations to include high power microwave (HPM) weapon characteristics like beam width, range, pulse rate, and intensity.

- End-users: test and develop counter-UAS strategies

Impact

- Our ongoing program is to develop simulation, and optimization tools to study **adversarial autonomy** scenarios, which do not currently exist

- CRUSER funding will allow transitioning of this modeling framework to a user-friendly package for training, war-gaming, and real-time mission planning

- Success will be measured using feedback from DoD field operators (GBAD) and HPM researchers (NSWCDD; see attached letter)

Transition

- HPM weapons are a major focus area for researchers at Naval Surface Warface Center Dahlgren Division (NSWCDD). Currently there is no modeling framework for them to evaluate tradeoffs for design

- Marines at Ground-Based Air Defense (GBAD) work directly with NSWCDD on HPM-equipped drones

- Funding target for FY23 is ONR, "Directed Energy Weapons: High Power Microwaves" program; joint proposal with NSWCDD (see attached letter).