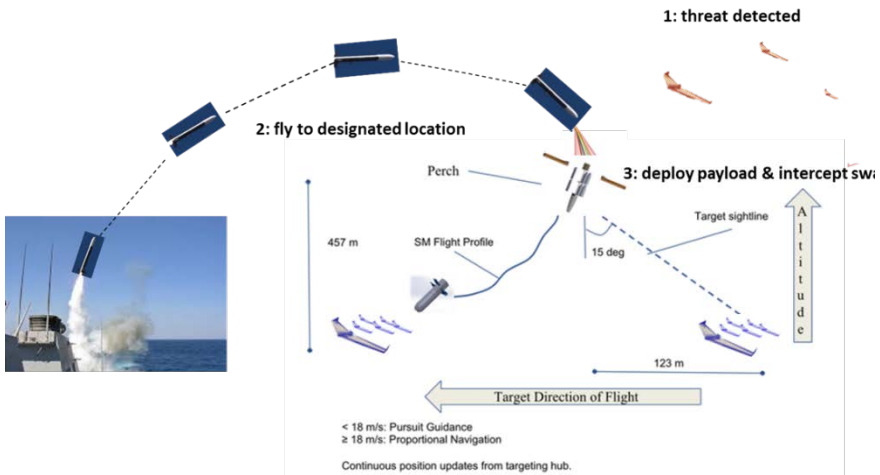
Counter Aerial UxS Munition Delivery System



Threat detection, intercept, and eliminate adversary aerial UxS swarm with multiple guided sub-munitions

Problem Statement

- **Motivation:** The emergence of high-performance, consumer-grade, and low-cost drones, combined with artificial intelligence and low-cost computer processing power, has provided the tools and platforms on which to build UxS drone swarms. In the context of recent weaponization of commercially available aerial UxS, these trends present two major challenges: the possibility of defenses getting overwhelmed and the large cost asymmetry between currently available defenses and the cost of these threats.
- **Approach:** Use cheap COTS and additive manufacturing to build a rapid-response solid rocket motor payload delivery vehicle capable of guiding to a point in space and delivering multiple gravity-fed guided sub-munitions to counter aerial UxS threat(s) with a bird of prey attack approach.

Impact

- **Develop a low-cost guided payload delivery vehicle using commercial off the shelf (COTS) components**
- **Develop required subsystems of target acquisition and tracking sled/perch with onboard logic for directing guided sub-munitions, and gravity-fed guided sub-munition system for threat elimination; all using low-cost COTS components**
- **Provide a more symmetrical response to the threat of cheap aerial UxS swarms**
- **Provide flight data for modeling and simulation of proposed engagements**
- **Training of technical workforce and student development**

Transition

- **DARPA Tactical Technology Office is seeking proportional responses to the ever-growing cheap aerial UxS swarm threat**
- **The U.S. nuclear command, control, and communications systems (NC3) is seeking a rapid-response high altitude delivery system, which can be provided by modifying the payload delivery system being developed.**

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