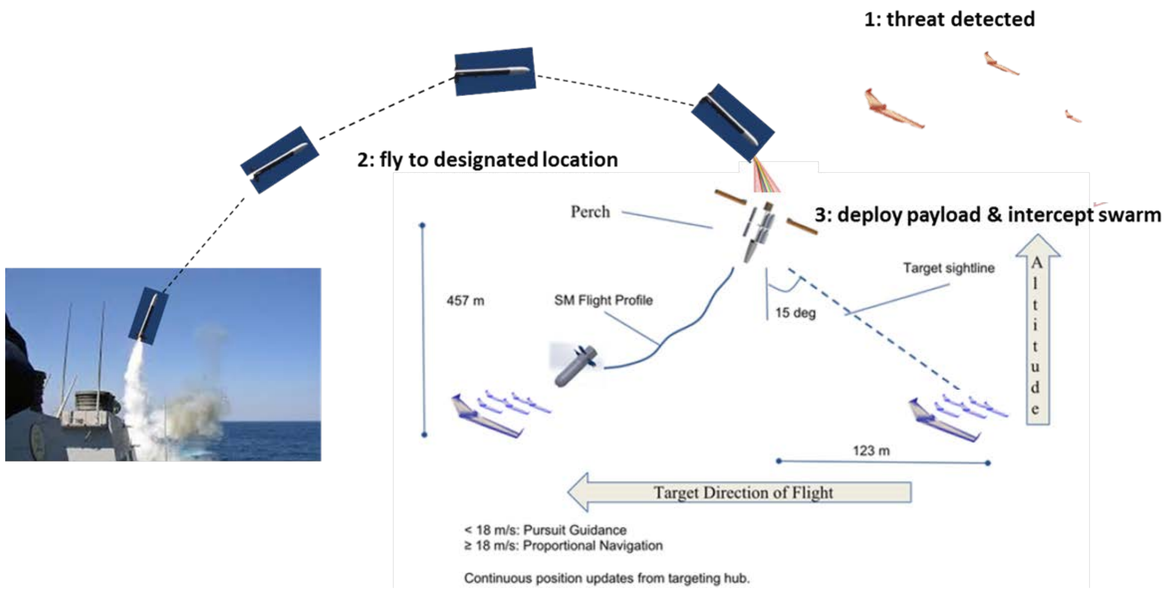
Counter Aerial UxS Munition Delivery System



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

Approach

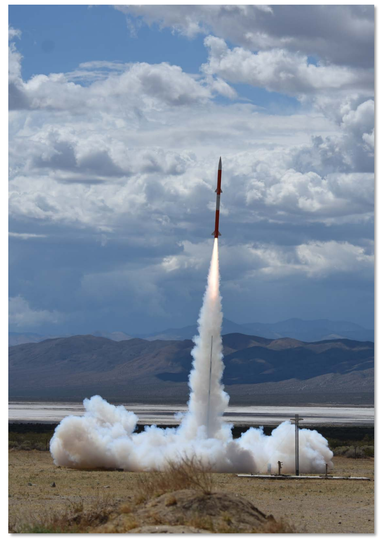
- Rapid-response payload delivery vehicle and sub-munitions primarily use low-cost commercial off-the-shelf components.
- Individual system component development has already been pursued via multiple student thesis work, resulting in demonstrated initial successes of: ballistic payload delivery vehicle, sub-munition deployment, sub-munition guidance and control, and sub-munition kill mechanism.
- Leverage previously acquired flight data to develop and implement an autonomous guidance, navigation, and control system for the payload delivery vehicle.
- Demonstrate an integrated flight system with previously developed sub-systems and newly developed guided payload delivery vehicle.

Deliverables

- A low-cost, rapid-response, autonomously-guided payload delivery vehicle capable of deploying an active aerial UxS tracking hub and multiple guided sub-munitions for aerial UxS swarm elimination.
- A system analysis report for appropriate counter aerial UxS detection and tracking systems to be integrated within the perch targeting hub and individual guided sub-munitions.
- A final report detailing the development of the payload vehicle guidance, navigation, and control system, as well as subsystem integration of the guided launch vehicle, sub-munition deployment, guided sub-munition flight test, and guided sub-munition kill-mechanism deployment flight tests.

Objective

- Counter adversary aerial UxS swarm
  - Conventional missiles currently employed
    - Expensive, not well-suited for the task
    - Asymmetric warfare puts U.S. at disadvantage
  - Booster used to deploy sub-munitions
    - Low cost – commercial products & additive manufacturing
    - Capable of defeating multiple UxS simultaneously
    - Rapid response – solid rocket motor



FY20 Call for Proposals

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