ASRC UAV/UAS Community of Practice – Aug BOD 2016

Carl Solomon

UAV/UAS Status in ASRC

- Since the retreat, both MARG and DelMARVA have continued to make progress in trying out different aspects of using the UAV/UAS technology with a focus on:
  - Use as a Search Sensor
  - Use as a Mapping Sensor
- MARG has 2-4 people that will be taking the Remote pilot exam in September.
- The regulatory environment continues to be very dynamic.

Our Efforts in 2016 and Beyond

- Concept of Operations (CONOP) for ASRC Use of UAV/UAS Capabilities
- Experimentation
- Field Exercises
- ASRC UAS Response Team

CONOP

- **We have identified 4 primary use cases for UAV or UAS (Unmanned Aerial Systems)**
- **We are focusing our efforts on getting more experience flying to better understand how we can use this technology before we flesh out further our processes and use cases.**
- **Concept of Operations (CONOP) for ASRC Use of UAV/UAS Capabilities**
  - **1.0 Introduction**
  - **2.0 UAS Use Cases**
  - – For each use case discuss the process(s) used to execute the use case
    - 2.1 Flying UAS Sensors to Search an Area - discuss both real-time and post-flight exploitation operations
    - 2.2 Flying UAS Sensors to Map an Area – discuss how we use airborne sensors to provide up to date mapping for a search mission.
    - 2.3 Flying UAS Packages for Communications Relay or Assist (Lower Priority) – discuss how we fly COMMS relays/repeaters and communicate directly with subjects or searchers in the field.
    - 2.4 Flying UAS for Payload Delivery (Lower Priority) – discuss how we deliver payloads to subjects or searchers in the field or from the field back to base.
  - **3.0 General Overview for Operating a UAS Safely** – discuss common operating processes for multiple use cases and resources required to operate; discuss safety considerations and how we address them across the range of use cases

Experimentation

- AMDR/AMDH Experiments
  - Supports Sweep Width Experiment Design
  - Developed “Pilot” version of an AMDR/AMDH experiment
- Sweep Width Experiments
  - Planning for UAV/UAS Sweep Width Experiments once we get sufficient data from the AMDR/AMDH experiments

Field Exercises

- Plan to “fly” in future ASRC Field SAREXs
- Execute test runs of both Mapping and Searching Use Cases to gather lessons learned and establish/refine mission processes

ASRC UAS Response Team

- Is there an interest in establishing an ASRC UAS Response Capability?
  - Team would leverage the combined set of UAV operators across the ASRC to provide a capability
  - This team would set it's own safety and operating guidelines based on the latest FAA regulations and other legal constraints
  - Proposed use of Remote Support model of a "reach back" capability within the ASRC to augment a search effort with something that may not be organic to the Group responding on-scene

Feedback

- We need to accelerate our learning/research efforts
  - That said, we need to identify a UAV Operator or enthusiast to help lead the community
- Of the efforts described, what does the conference want the community to focus on?
  - CONOP Development?
  - Experimentation?
  - Field Exercises?
  - UAS Response Team?