Panel – Protecting Airport Air Traffic from Errant Drones

Presented to: NBAA Business Aviation Convention

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Overview

• Hobby/Recreational Operations

• Small UAS Rule (Part 107)
  – Becoming a Pilot
  – Operating Rules

• UAS Detection Initiative
Hobby/Recreational Aircraft

• Generally, hobby/recreational operators do not need FAA authorization to fly, but they must fly safely at all times:
  – Avoid manned aircraft
  – Maintain visual line-of-sight
  – Notify all airports within five statute miles
  – Follow community-based safety rules

• They must register and mark their UAS before flying outdoors
  – UAS between 0.55 pounds and 55 pounds may register online
The Small UAS Rule (Part 107)

- First rules for routine operation of small UAS (<55 pounds)
- Took effect August 29, 2016
- Recreational operators may fly under Part 107 or Public Law 112-95 Section 336/Part 101
- Public operators may fly under Part 107 or use the FAA’s COA process (Part 91)
Part 107 Basics

• UAS must weigh less than 55 lbs. and be registered
• UAS operators must obtain a Remote Pilot Certificate
• Visual line-of-sight, daylight operations
• 400 feet or below in uncontrolled (Class G) airspace; other airspace use requires authorization
• Operations in Class G without ATC authorization
• Operations in Class B, C, D & Class E surface areas require ATC authorization, following phased approach
• Online portal available at [www.faa.gov/uas/request_waiver/](http://www.faa.gov/uas/request_waiver/)
UAS Detection Efforts
Stakeholder Interests and Roles

- **Hostile UAS** → DHS Mission: Security
- **Errant UAS** → FAA Mission: Safety
- **Authorized UAS** → FAA approved: NOTAM filed
UAS Detection Initiative

• In October 2015, the FAA signed a CRDA with CACI International to test its detection technology

• In May 2016, the FAA signed additional CRDAs with Gryphon Sensors, LitEye, and Sensofusion

• Congress has since directed the FAA to establish a pilot program to assess airport detection systems for use near airports and critical infrastructure
UAS Detection Initiative

- The FAA co-leads an interagency group with DHS to research UAS detection technology

- Efforts are focused on evaluating technology that can detect and track UAS to support safe conduct of operations in sensitive areas like airports.
Objectives and Challenges

• Review detection systems evaluations conducted by partner agencies for commercial airport applicability

• Develop processes and procedures for the deployment of UAS detection systems

• Develop minimum performance standards

• Must ensure that the detection technology does not interfere with regular airport operations
UAS Detection Types

DoD concluded that more than one type of detection capability may be required depending on the complexity of the infrastructure.

Ex: RF to detect the operator and the unmanned aircraft (UA) if broadcasting; radar for autonomous operations.

- Passive Radio Frequency (RF)
- Radar
- Optical Observations
- Acoustics
Completed and Planned Efforts

• FAA efforts concluded:
  – Winter 2016: CACI evaluation at Atlantic City International Airport (ACY)
  – Spring 2016: FBI evaluation at John F. Kennedy International Airport (JFK)
  – Late Summer 2016: Participation at Black Dart 2016

• FAA efforts scheduled:
  – Fall 2016: Evaluation of detection systems at Class B Airport
  – Spring 2017: Evaluation of detection systems at Class B Airport
UAS Detection Efforts – Fall 2016

- Class B airspace
- Large UAS
- More complex UAS operations
- Evaluation of detection systems from:
  - CACI International, Inc. – RF
  - Liteye Systems – Radar
  - Sensofusion – RF
UAS Detection Efforts – Spring 2017

• Class B airspace
• Large UAS
• More complex UAS operations
• Existing radar adaptable to UAS detection
• Previous research projects conducted
• Evaluation of detection systems from Gryphon Sensors:
  – X-Band and KU-Band radar frequencies
  – RF
  – Optical
Questions?

www.faa.gov/uas