UAS Integration at Airports - RPA S10

Presented to: REDAC

By: Mike DiPilato

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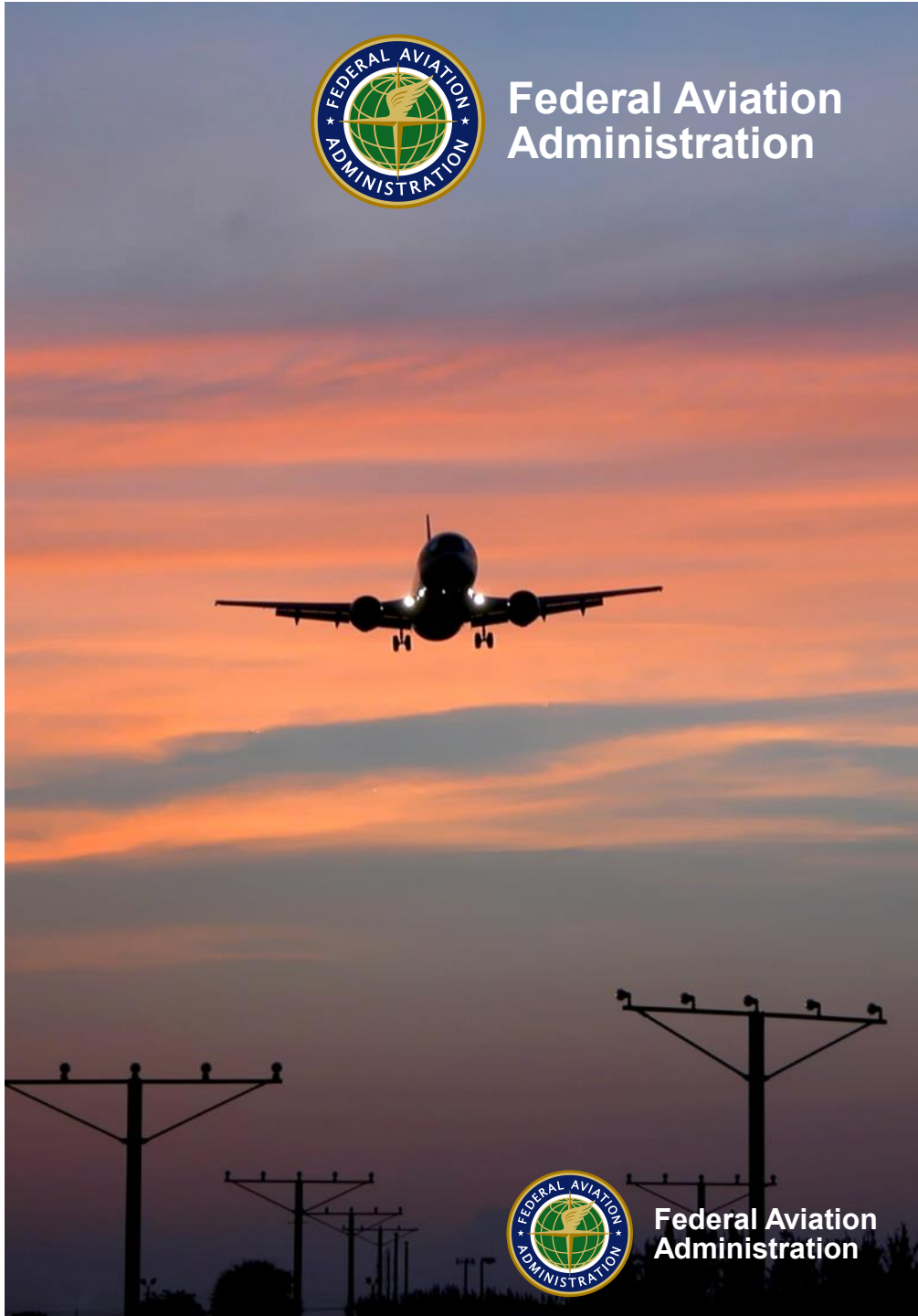
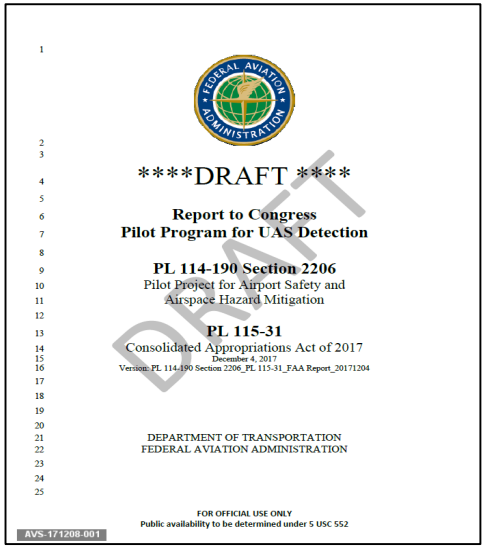


UAS Integration at Airports

- Counter UAS
- Tech Ops
- ACRP 03-42 – *Integrating UAS Into Airports*
- Airport Applications
- Next Steps

Counter UAS Assessment

- **Supported the UAS Integration Office (AUS) with assessing various types UAS detection technologies:**
  - Radio Frequency (RF)
  - Radar
  - Electro-Optical (EO) / Infrared (IR)
- **Assessments took place at ACY, JFK, DEN, and DFW**
- **Collaborated with the FAA's UAS Test Sites (Nevada, North Dakota, and Texas)**
- **Flew a variety of fixed an rotorcraft sUAS**
- **Provided input to 2206 Report to Congress (submitted by AUS Office)**



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Report to Congress
Pilot Program for UAS Detection

PL 114-190 Section 2206
Pilot Project for Airport Safety and Airspace Hazard Mitigation

PL 115-31
Consolidated Appropriations Act of 2017
December 4, 2017
Version: PL 114-190 Section 2206_PL 115-31_FAA Report_20171204

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

FOR OFFICIAL USE ONLY
Public availability to be determined under 5 USC 552

AVS-171208-001

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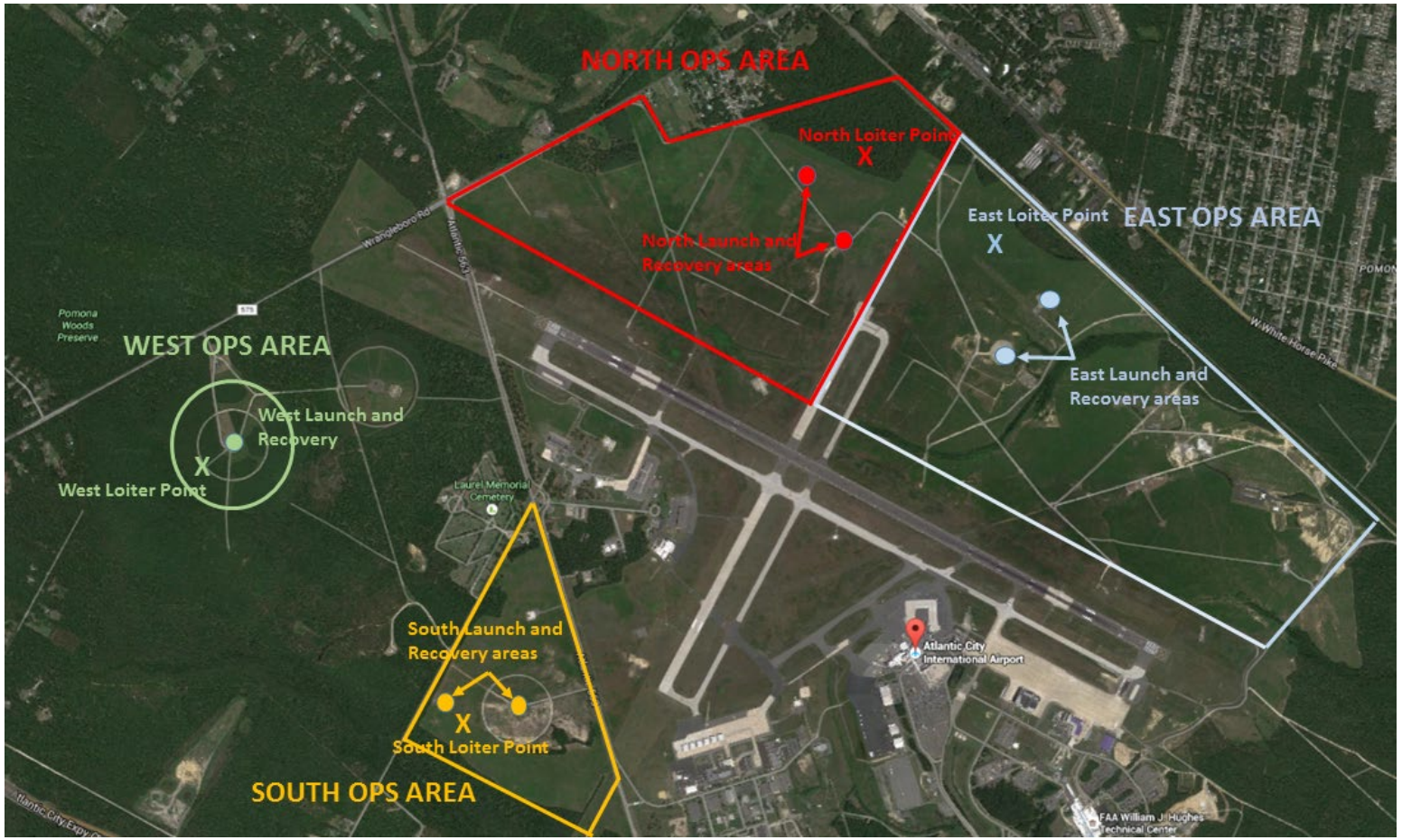
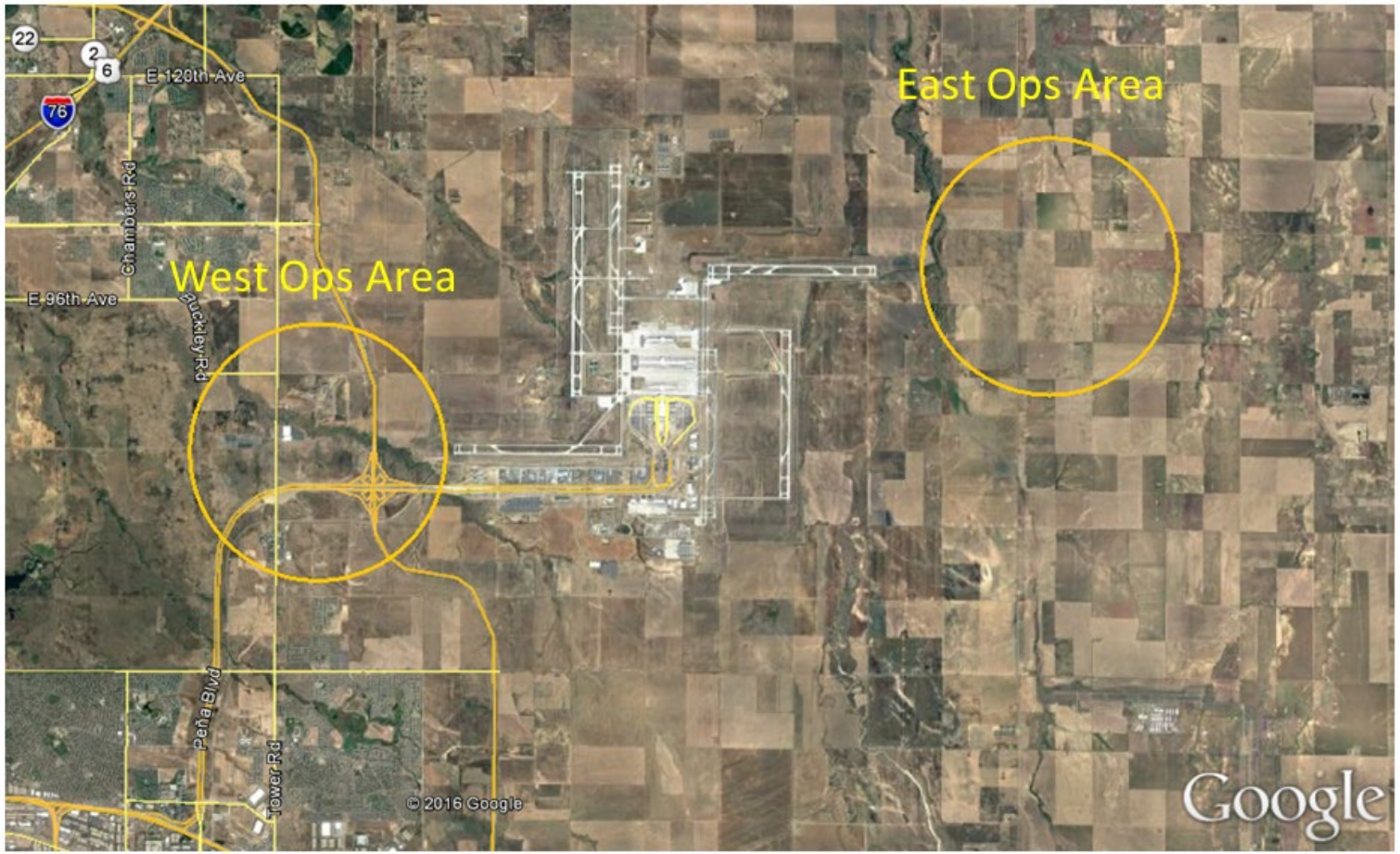
Counter UAS Assessment – ACY



Counter UAS Assessment – Denver



Counter UAS Assessment - Denver

Counter UAS Assessment - DFW

Non-FAA
Counter UAS Demonstrations

- **Participated in counter UAS demonstrations with the U.S. Department of Energy and large U.S. based company.**
- **Key takeaways:**
  - Reviewed and discussed test procedures
  - Witnessed and discussed test environments
  - Interacted with various technologies
  - Established key relationships

FAA Tech Ops UAS Feasibility Study

- **Airport Safety R&D continues to support FAA Tech Ops with their UAS Feasibility Study: Using UAS for inspecting FAA owned equipment and infrastructure**
  - Lessons learned from counter UAS work
  - Assisted with developing test cards
  - Assisted with site surveys and coordinating activities at test locations:
    - Mike Monroney Aeronautical Center (MMAC), OK
    - Atlantic City International Airport (ACY), NJ

ACRP 03-42:
Integrating UAS Into Airports

- **Airport Safety R&D researcher is a panel member on this project**
- **Two year research effort**
- **Six Phases:**
  1. Managing UAS Operations in the Vicinity of an Airport
  2. Engaging Stakeholders in UAS
  3. Incorporating UAS into Airport Infrastructure and Planning
  4. Potential Use of UAS by Airport Operators
  5. Update to ACRP Report 144: Unmanned Aircraft Systems: A Primer
  6. Final research findings and Deliverables
- **Demonstrations:**
  - Completed: Front Range Airport (FTG), CO and Johnston Regional Airport (JNX), NC
  - Planned: Sebring Regional Airport and LAX

UAS Airport Applications

HARTSFIELD-JACKSON ATLANTA (ATL) USES DRONE TECHNOLOGY TO INSPECT RUNWAY

http://www.airport-world.com

The aviation community has shown that it's possible to safely operate sUAS on or near an airfield.

FAA wants to ensure that best practices are documented and consistently applied, ensuring safety for *all* airfield operations.

DRONE UTILISATION TRIALS AT SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

UAS Airport Applications

1. Geo-analysis of obstacle clearance surfaces
2. Pavement Inspections
3. Perimeter Security
4. Wildlife Monitoring, Detection, and Mitigation
5. Airport Rescue and Fire Fighting (ARFF)

*Ranked by ARP- 1

Geo-analysis of Obstacle Clearance Surfaces

Inspection of an airport's imaginary surfaces to protect aircraft from hitting obstructions during the approach, landing, and departure of a runway

Pavement Inspections

- **Inspect and monitor, and track pavement surfaces**

Perimeter Security

- **Remote monitoring of airport perimeter fences, patrolling remote areas, closed ramps, etc.**
- **Respond to security breaches**

Wildlife Monitoring, Detection, and Deterrence

- **Habitat monitoring, and**
- **USDA is currently evaluating the effectiveness of a UAS as a hazing tool:**
  - Various UAS platforms (quadcopter, fixed wing, and predator (eagle))
  - UAS approach (direct / overhead)
  - Alert distances
  - Controlled and free ranging environments

Airport Rescuing and Firefighting (ARFF)

- **Investigate the use of UAS during ARFF response for immediate size-up and/or live imagery for better situational awareness.**

UAS Airport Applications: Next Steps

- **Ongoing and Planned FY 18 Activities**
  - Conduct Airport Applications literature review
  - Airport Operators UAS Guidance Document
  - Conduct Airport Applications Proof of Concept Demonstrations
    - Develop framework for airport applications Concepts of Operation (CONOPS)
- **Planned FY 19 Activities**
  - Develop Draft Airport Applications CONOPS

Questions?

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