Public Operations Outreach: Drone Responders

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UAS Applications

- Many beneficial applications of commercial and public UAS
- Multiple companies and organizations with different use cases plan to operate at scale in the same airspace
- A need was identified for managing UAS traffic to ensure safe, efficient, and scalable operations

What is UAS Traffic Management (UTM)?

UTM is an "air traffic management" ecosystem for low altitude airspace

UTM utilizes industry's ability to supply services under FAA's regulatory authority where these services do not exist

UTM establishes services, roles/responsibilities, information architecture, data exchange protocols, software functions, infrastructure, and performance requirements to enable the management of low-altitude UAS operations

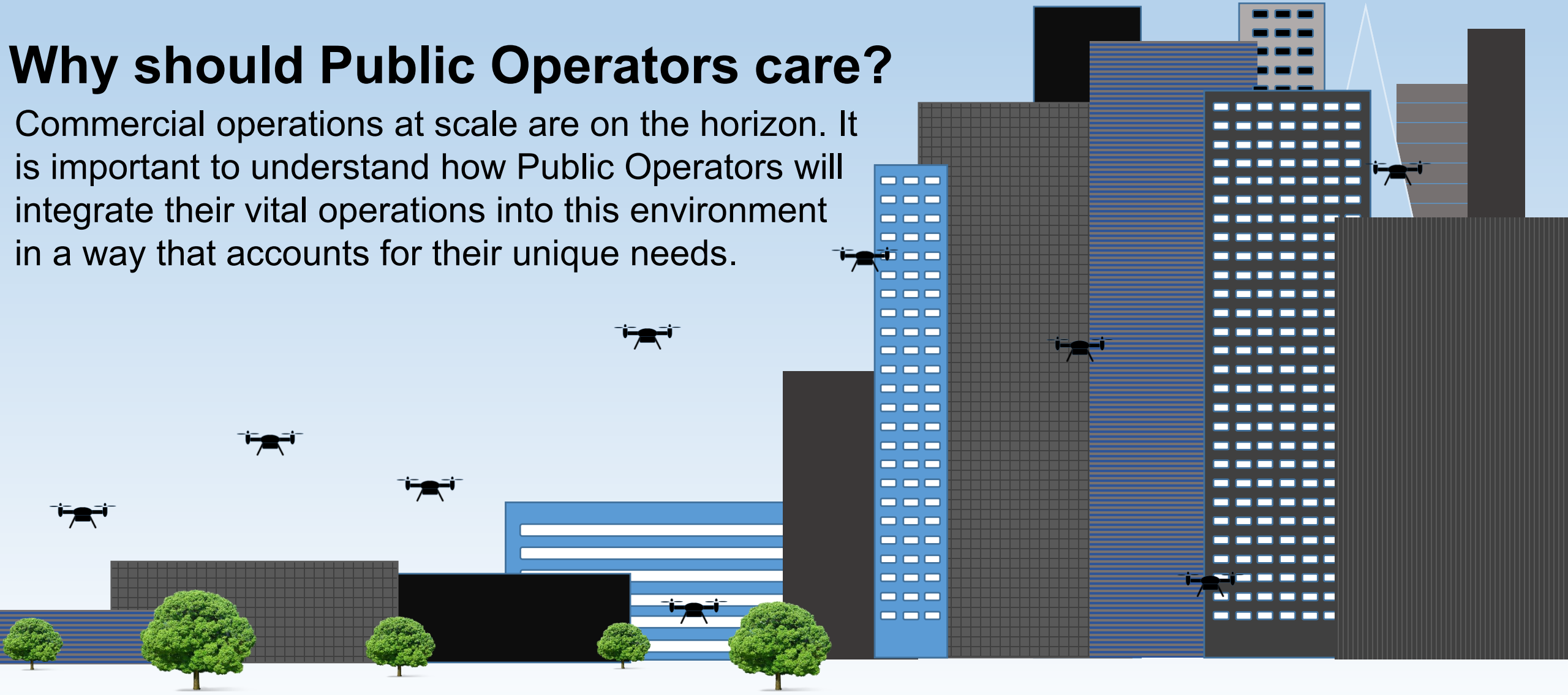
Transparency **Security** **Safety** **Commerce** **Scalability**

Why do we need UTM?

To enable safe, scalable, routine BVLOS operations through information sharing and digital coordination.

Why should Public Operators care?

Commercial operations at scale are on the horizon. It is important to understand how Public Operators will integrate their vital operations into this environment in a way that accounts for their unique needs.



NASA and FAA UTM efforts have included consideration of public operations from the beginning

Concept of Operations

v2.0

Foundational Principles

Roles and Responsibilities

Scenarios and Operational Threads

Figure 9. Operational overview relative to UVR

2.7.2.2 Public Stakeholders

Local, state, tribal and federal entities (e.g., state police, Federal Bureau of Investigation, DHS) require access to UTM data to inform responses to local or federal complaints and safety/security incidents, and the conduct of investigations. Appropriate data access limitations are set by the FAA for individual federal and public/public safety entities (e.g., public information, classified information). Depending on the nature of the safety or security situation, historical or near-real time information may be needed. UTM data deemed publicly-accessible (e.g., RID message) may be obtained by the general public through third-party services/applications and/or the government. UTM data that is not publicly accessible (e.g., Operator contact information) is managed and provided based on the the level of access-to-information authorized for the requestor using [illegible] IATF policies.

2.6 Remote Identification

RID provides a means to address public concerns and protect for public safety vulnerabilities associated with low altitude UAS operations, including privacy and security threats. RID allows electronic identification of a UA/Operator through use of a unique identifier (similar in concept to an automobile license plate). RID enables accountability and traceability, particularly for BVLOS operations, where an Operator and vehicle are not co-located. USSs that provide RID services process and distribute RID data to the general public, law enforcement, the FAA, and other public officials according to FAA-established protocols. Public officials, with a need to know, have credentials that enable access to an expanded set of data.

UAS Volume Reservations (UVRs) may be established when activities [illegible] a potential risk to UTM safety interests. UVRs are designed to support flights (e.g., police activity, emergency response, public safety) by notifying airspace in which these activities occur. UVRs are generally short in duration (hours or weeks), have specified airspace boundaries, and have an established priority. A USS has been qualified by the government to provide UVR services creates and routes UVR data through the USS Network to notify affected Operators, and to applicable FAA stakeholders via FIMS.[18]

Authorized public safety entities that need to obtain information beyond the publicly-accessible RID message elements are able to query the USS Network. A USS that has been qualified by the FAA to provide public safety services - a *public safety USS* - may have increased access-to-information privileges within the USS Network, compared to USSs not providing public safety services. For example, an authorized law enforcement officer may subscribe to a public safety USS, which could [illegible] for information relating to a submitted UAS ID. USSs that have, or are [illegible] UAS ID, provide information back to the public safety USS commensurate with the access associated with the requesting law enforcement officer, which may include contact information.

2.7.3.2 Priority Flights

Priority access demands for airspace may overlap with UTM Operations. For example, a safety incident (e.g., EMS or first responders must access airspace) or FAA-authorized entities (e.g., law enforcement, fire department) can request UVRs to alert UTM participants of the public safety activity. UVRs do not exclude UTM participants from the airspace, however, Operators/RPICs are expected to exercise caution if they continue their operations, as they are responsible for the overall safety of their flight and are accountable for their actions.

Local, state, tribal, and federal entities require access to UTM data

UVRs may be established when activities present a potential risk to UTM safety interests

Priority access for airspace may overlap UTM operations… UVRs do not exclude UTM participants, however they are expected to exercise caution.

Key Site Operational Evaluation

- Key Site Operational Evaluation will be initial focus to drive BVLOS operationalization forward
- Public Operator integration is an important component of the evaluation at this early stage

FAA Announcement of Key Site at Drone Symposium 2023

Key Site Overview

FAA Drone Integration

- 6+ UAS Service Suppliers (USS) and operators signed Letter of Intent
  - Collaboratively deconflict drones in Dallas region
- Limited to Class G operations up to 400' AGL
  - Exact geographic boundaries to be determined
- Leverage a federated network of services deployed by industry based on consensus standards
- Bring together many stakeholders: FAA, NASA, local governments, service providers, operators
- Enables FAA to validate use of UTM-based strategic deconfliction to mitigate UA-UA collision risk for beyond visual line-of-sight (BVLOS) operations.
- Critical policy area for BVLOS (Part 108) Rulemaking

Purple circles: Existing UAS operations

Key Partnerships

Routine, Safe, Extensible BVLOS Operations

NASA

Cooperation with SWS, AMP, and ACERO to identify common needs and opportunities

Industry

Work closely with Operators and Service Providers at Key Site and beyond

FAA

Cooperation to inform rulemaking and alignment across activities

Public Operators

Account for the unique needs and priorities of Public Operator community

Key Site

Close collaboration with local entities to support persistent BVLOS ops

Standards

Dedicated engagement with standards organizations to ensure progress and impact

Potential Next Steps

Follow-on Discussion Topics

Public Operator Connection to RFI Cohort	Explore potential partnerships between Industry service providers and Public Operators
Public Operations at the Key Site and beyond	Solicit interest in operating as active participants in the Key Site Operational Evaluation
Working Group	Discuss the potential of standing up a working group focused on the integration of public operations in a UTM environment

Potential Next Steps

Follow-on Discussion Topics: Operations

Public Operator constraint management	Authorized public entities injecting constraints into the UTM system (per standards) in support of response operations
Public Operator Priority Operation	Priority response operations in the same airspace as routine commercial BVLOS operations
Public Operator Non-priority Operation	Non-priority nominal operations in the same airspace as routine commercial BVLOS operations
Public Operator situational awareness	Situational awareness needs with consideration of information availability and display capabilities regarding the UTM environment

Thank You!

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