American Society of Civil Engineers
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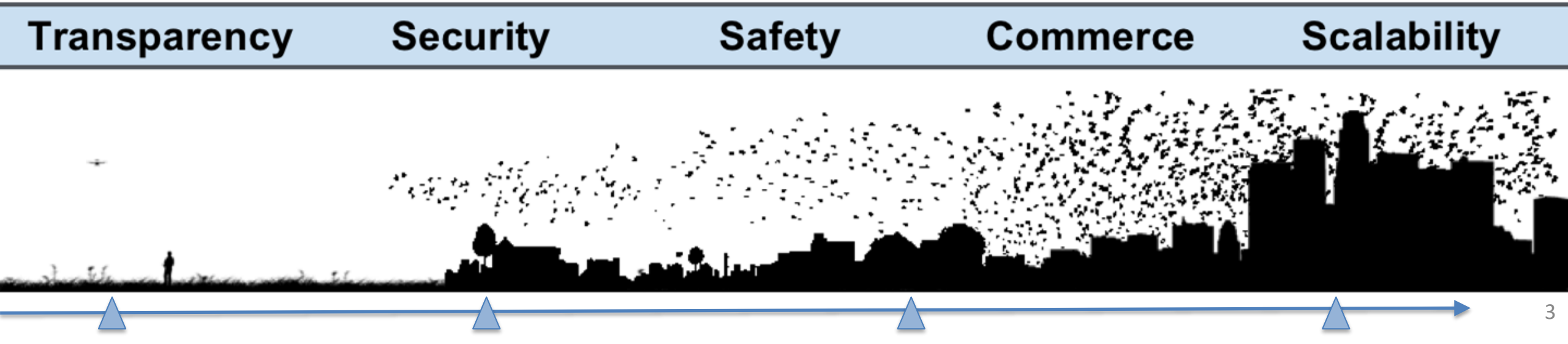
Unmanned Autonomous Systems (UAS) Traffic Management

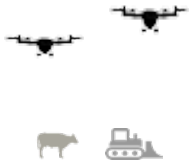
What is UAS Traffic Management?

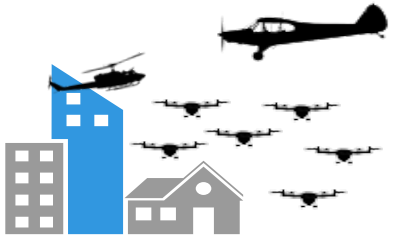
- UTM is an “air traffic management” ecosystem for small UAS in low altitude airspace
- UTM utilizes industry’s ability to supply services under FAA’s regulatory authority where these services do not exist.
- UTM development will ultimately identify services, roles/responsibilities, information architecture, data exchange protocols, software functions, infrastructure, and performance requirements to enable the management of low-altitude UAS operations.



Technical Capability Levels (TCL)

Risk-based development and test approach along four distinct TCL





TCL1

- **What:** Concept for management of airspace in lower risk environments and multiple visual line-of-sight (VLOS) UAS operations
- **When:** Aug ‘15, May ‘16
- **Outcomes:** Validation of cloud-based service oriented architecture

TCL 2

What: Complex multiple beyond visual line of sight (BVLOS) UAS Operations in lower risk environments

When: Oct ‘16, May ‘17

Outcomes: Information sharing between operators, and established federated 3rd party service model

TCL 3

What: Technologies needed for BVLOS UAS Operations over populated areas and near airports

When: March-June 2018

Outcomes: Technologies for detect and avoid, comm. and nav., and data exchange between multiple USS

TCL 4

What: Complex BVLOS operations in urban environment, nominal and contingency situations

When: Summer 2019

Outcomes: Operational concept, vehicle technologies, and data exchanges for operations near large structures and in highly populated areas

Summary

- The UTM Project is successfully developing the framework and related requirements for large scale, small UAS traffic management
- Processes for testing partner systems is evolving and may form the basis for future checkout requirements in an operational UTM System
- Completed TCL 1, 2, and 3 Demonstrations including many testing organizations, industry, and academia partners that are crucial to validating requirements and investigating technology solutions
- NASA and the FAA are closely collaborating to ensure appropriate regulatory and operational requirements are included and that technology transfers support the development of future operational systems