

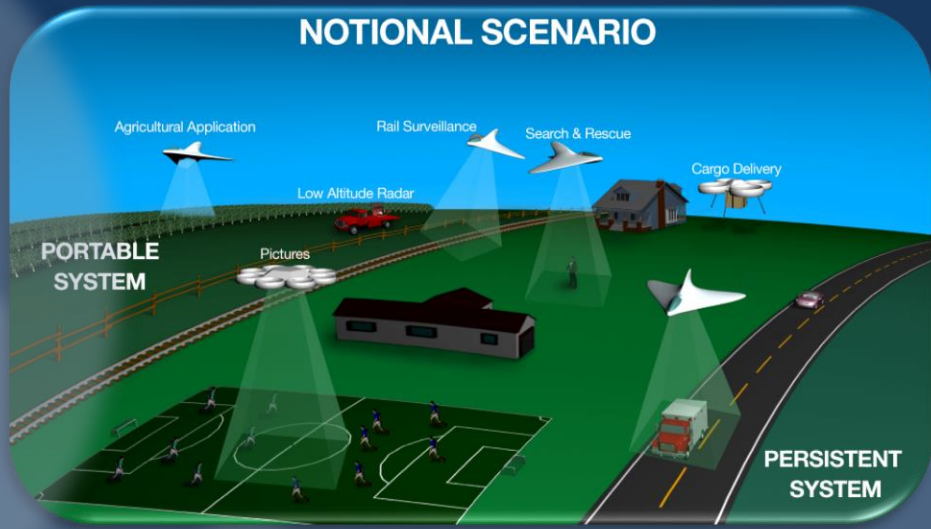
Safely Enabling Civilian Unmanned Aerial System (UAS) Operations In Low-Altitude Airspace By Unmanned Aerial System Traffic Management (UTM)



National Aeronautics and Space Administration

MOTIVATION

- Many UAS will operate at lower altitude (Class G, below 2000 feet)
- There is urgent need for a system for civilian low-altitude airspace and UAS operations
- Stakeholders want to work with NASA to enable safe operations



PROGRESS

- Developed UTM vision document
- Defined initial UTM design characteristics
- Conducted an all-stakeholder workshop to gather feedback

CONCEPT OVERVIEW

- UTM System will provide following services:
 - Airspace design and geo-fencing
 - Weather integration
 - Congestion management
 - Separation management
 - Contingency management

UTM WORKSHOP KEY FINDINGS

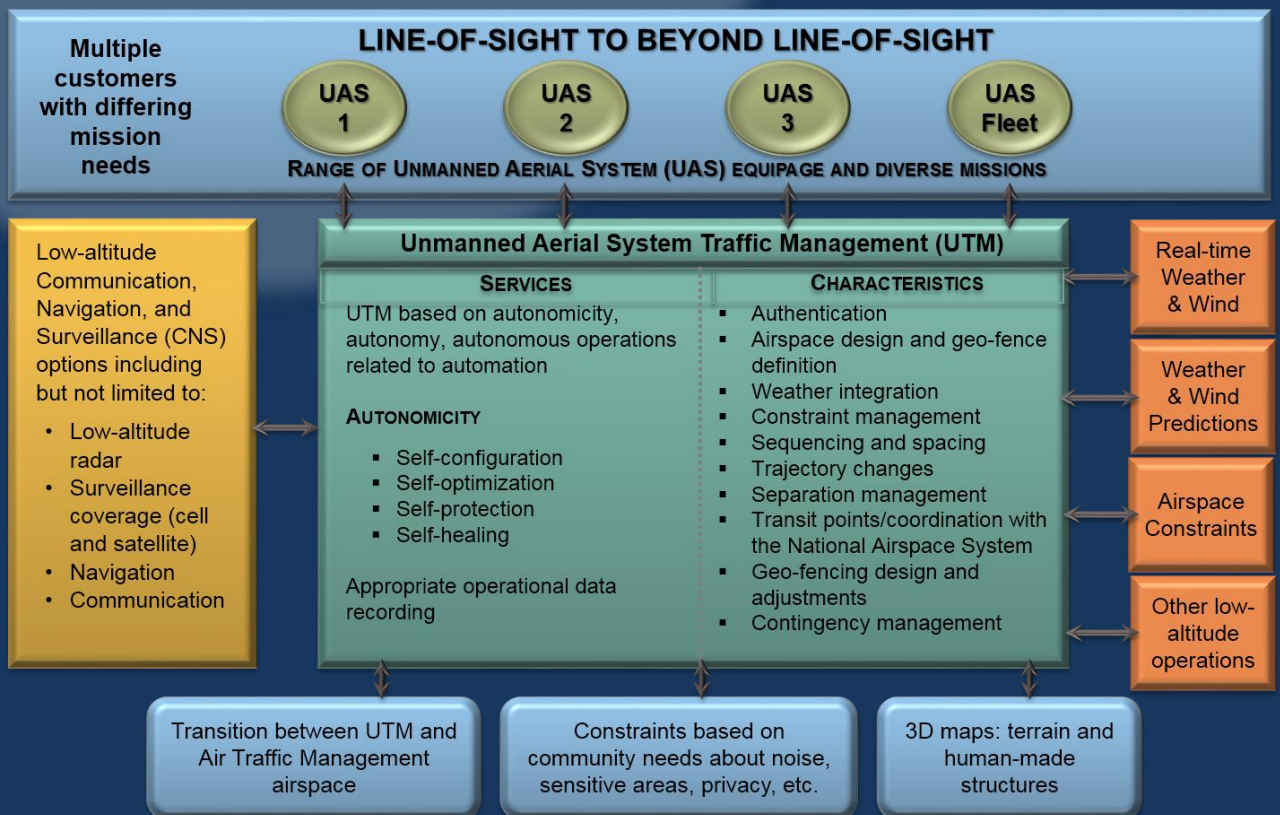
- Overwhelmingly positive response
- Stakeholders support NASA's leadership and vision
- Many partners are ready to engage
- There is urgency to put a system in place

NEXT STEPS

- Obtain authorization to proceed with further development of UTM
- Refine UTM design, architecture, and use cases
- Explore partnership arrangements to engage traditional and non-traditional partners
- Define a spiral development process to do rapid prototyping and early fielding with regular updates

PARTNERSHIPS

- UAS manufacturers
- Online retailers
- Communication/navigation/surveillance providers
- System integrators
- Emerging UAS operators
- Cargo operators
- FAA, NOAA, DoD
- UAS test sites



Near-term goal: enable low-altitude operations within 5 years
 Long-term goal: accommodate increased demand 10-15 years