As density & risk increase, so does the need for structure and controls.

**Low Density & Low Risk**
- Limited Regulation
- Limited Enforcement

**High Density & High Risk**
- Structured Access (ex. Lanes)
- Mandated Rules (ex. speed limits)
- Vehicle Standards (ex. tail lights)
- Enforcement (ex. traffic cameras, police)
- Centralized Control (ex. traffic lights)
Need An Incremental, Pragmatic and Feasible Approach

Limited Operations (U.S. Part 107)
Segregated Test Sites

Today

Operator Driven Model
- Highly autonomous
- Decentralized

End-State

High density low-altitude airspace management
Need An Incremental, Pragmatic and Feasible Approach

Limited Operations (U.S. Part 107) Segregated Test Sites

Operator Driven Model
- Highly autonomous
- Decentralized

Airspace Management Model
- Connection to traditional ATM
- Highly automated
- Centralized

Increased access of routine and expanded operations

End-State

High density low-altitude airspace management

Today
Providing Structure through Low-Altitude Airspace Management

Low-Altitude Airspace Manager - LAAM
Single manager for delegated airspace – centralizing safety-critical functions and safely facilitating operations and separation of UTM service suppliers and manned aviation

- Centralizes safety-critical services
- Leverages existing construct – State delegated
- Built to minimal operational performance standards
- Verified data exchange model – One situational awareness picture

Uncontrolled in traditional ATM

Uncontrolled

LAAM Controlled

Traditional ATM

ATM Low-Altitude Controlled

THALES
Low-Altitude Airspace Management

- Authorization Authority/ANSP
- ANSP Data Services (SWIM, Registry, etc.)
- ANSP Portal to LAAM
- LAAM (ANSP or 3rd Party)
  - Low-Altitude Airspace Management
- USS (Operator Services)
  - USS 1
  - USS 2
  - USS 3
  - ... USS n
- USS HMI
- UAS Operator
- Mission Planner
- Fleet Manager
- Observer

Public Safety/Local Ordinance

Core Data Services
- Weather
- Terrain
- QNH Correction
- Surveillance
- Geofencing
- Georeferencing
LAAM – An Incremental step in the Evolution of ATM

**Today**
- 60,000’ Uncontrolled
- ATC

**Short-Term**
- 2,000’ Uncontrolled
- LAAM
- Segregated: unmanned cross-airspace operations by exception only

**Mid-Term**
- 2,000’ Uncontrolled
- LAAM
- HATM
- Accommodated: limited unmanned cross-airspace operations allowed

**Long-Term**
- 60,000’ Integrated
- Seamless, integrated manned & unmanned airspace operations
- ATM 2.0