



Developing a Regulatory Scheme for AAM/UAM in the USA

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Legal framework for AAM/UAM regulation

- ▶ Federal regulation of ‘navigable airspace’
- ▶ Defined – airspace at and above the minimum flight altitudes prescribed by FAA
 - 1000 feet (305m) and above in urban areas
 - 500 feet (152m) and above in rural areas
 - Airspace needed for takeoff and landing
- ▶ Law protects private property rights outside navigable airspace
- ▶ Distinguish *airspace* access/regulation from *airport* access/regulation
- ▶ What about low altitude flights?

Federal government's (probable) legal structure

The Horseless Carriage approach (thanks Diego)

- ▶ Operations: integrate into existing system and legal framework (not entirely new system)
 - ▶ Vehicles: apply same principles as in existing aircraft certification
 - ▶ Pilots: to be determined; US Air Force examining
 - ▶ Facilities: to be determined; no one in charge yet
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Possible early airspace allocation

- ▶ Crawl, walk, run approach
- ▶ Initial separation; integration later

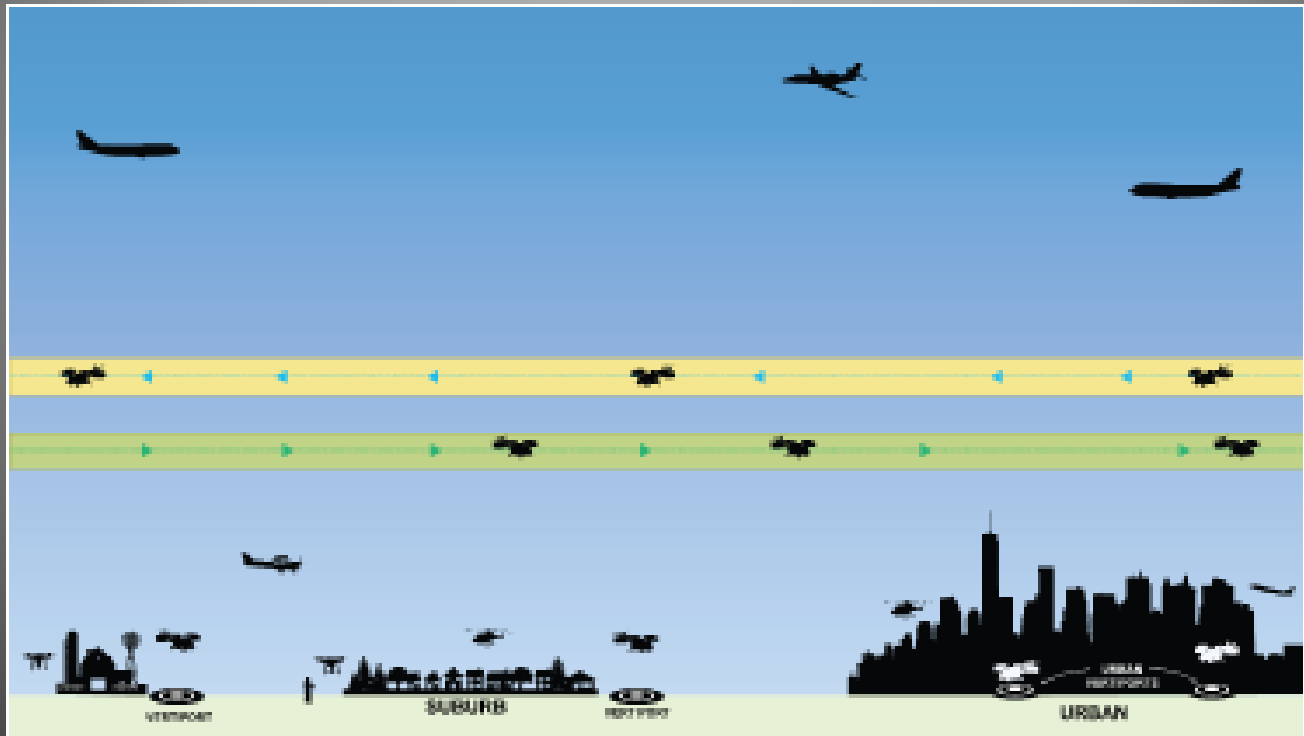


Figure 4: Early UAM Corridor Concept

Operations versus facilities

- ▶ Federal legal structure focused on –
 - Airspace
 - Vehicles
 - Pilots
 - Safety of facility design
- ▶ Limited federal interest or authority over –
 - Facility siting and location
 - Facility amenities
 - Utilities (electricity supply)



UAM facility considerations: on-airport

- ▶ Granted by each airport operator, not FAA
 - ▶ Property availability/ use limitations
 - ▶ Security
 - ▶ Interference with fixed wing operations
 - ▶ Access to electricity and other infrastructure
 - ▶ Landside access
 - ▶ Passenger terminal access
 - ▶ Zoning and land use restrictions
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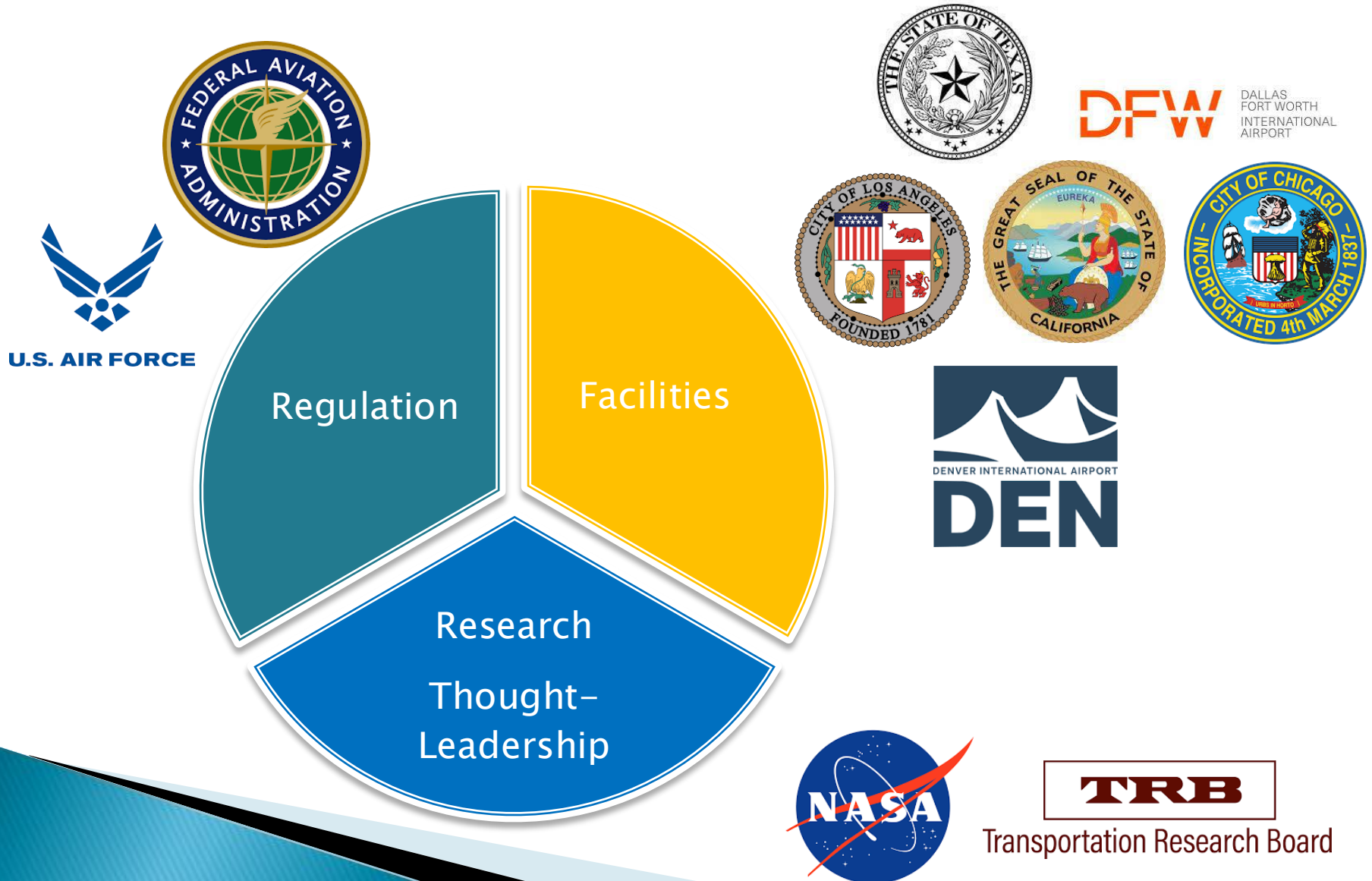
UAM facility considerations: off-airport

- ▶ Local zoning, land use controls permissible
 - ▶ Property availability/ use limitations
 - ▶ Security
 - ▶ Access to electricity infrastructure
 - ▶ Federal preemption only *after* facility is permitted
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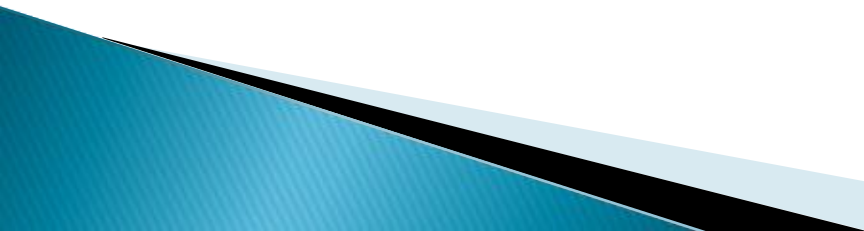
Use cases

- ▶ Much speculation
 - ▶ Different use cases implicate different legal schemes –
 - Midrange (under 250 miles) operations at normal air traffic altitudes
 - Short range (10–25 miles) operations under normal aircraft altitudes
 - Airport-to-airport
 - Airport-to-UAM facility
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Complex mix of agencies and players



Current status of legal framework

- ▶ AAM Integration Executive Council (2021)
 - ▶ Concept of Operations 1.0 (July 2020); 2.0 (May 2023)
 - ▶ Pilot certifications and operating requirements (June 2023)
 - ▶ Vertiport design standards (November 2022) (not yet regulatory)
 - ▶ Type certifications expected 2024
 - ▶ Considerable legislative activity
 - ▶ initially be approved to operate within the legacy regulatory environment with human pilots as the regulatory framework is adapted to permit higher-frequency operations
 - ▶ point-to-point corridors between vertiports under conventional visual and instrument flight rules.
 - Corridor management and conflicts (?airspace markets)
 - Size of corridors
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Thank you!

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