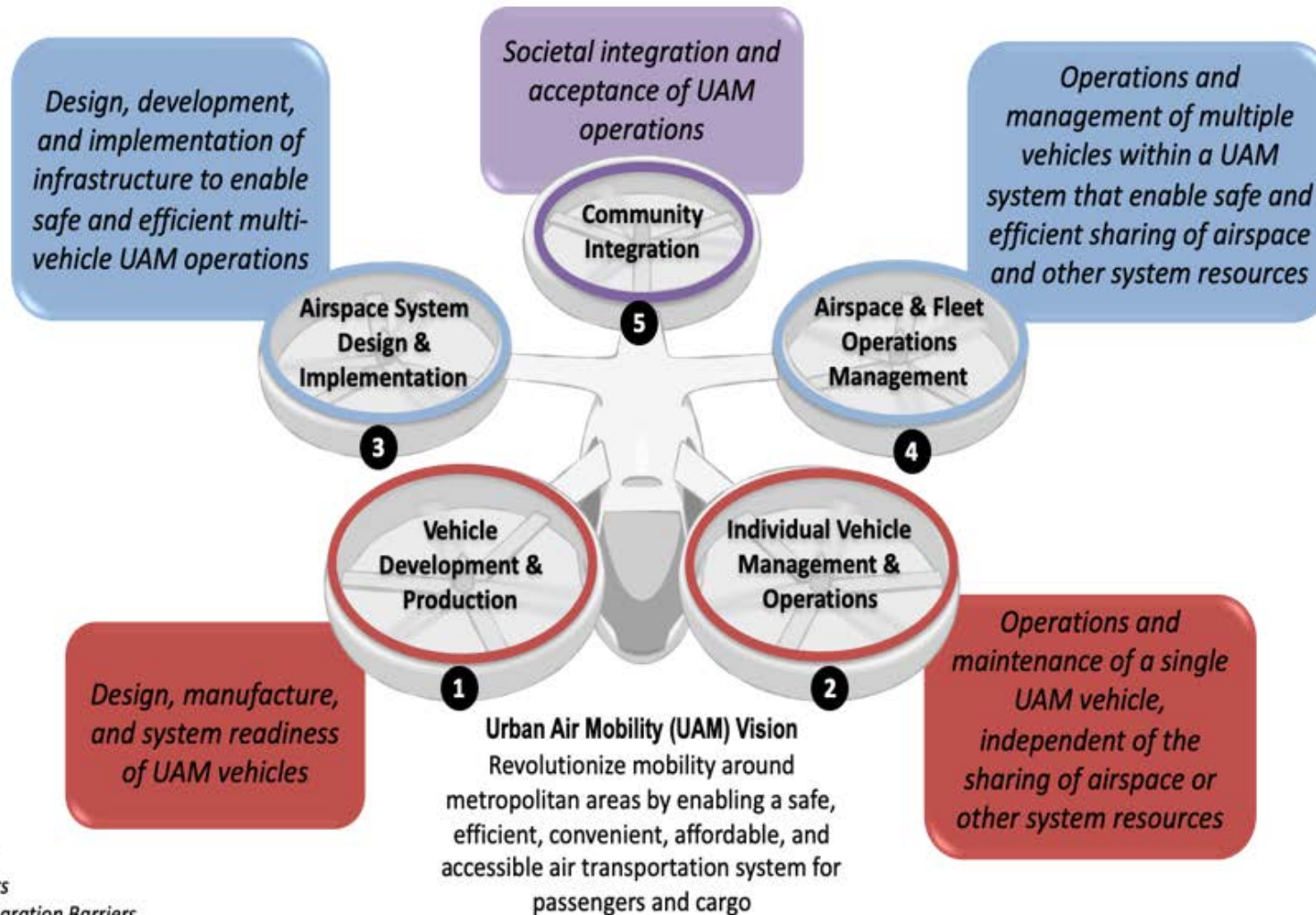




# Urban Air Mobility (UAM)

Parimal Kopardekar, PhD  
Director of NASA Aeronautics Research Institute (NARI)  
NASA Senior Technologist, Air Transportation Systems

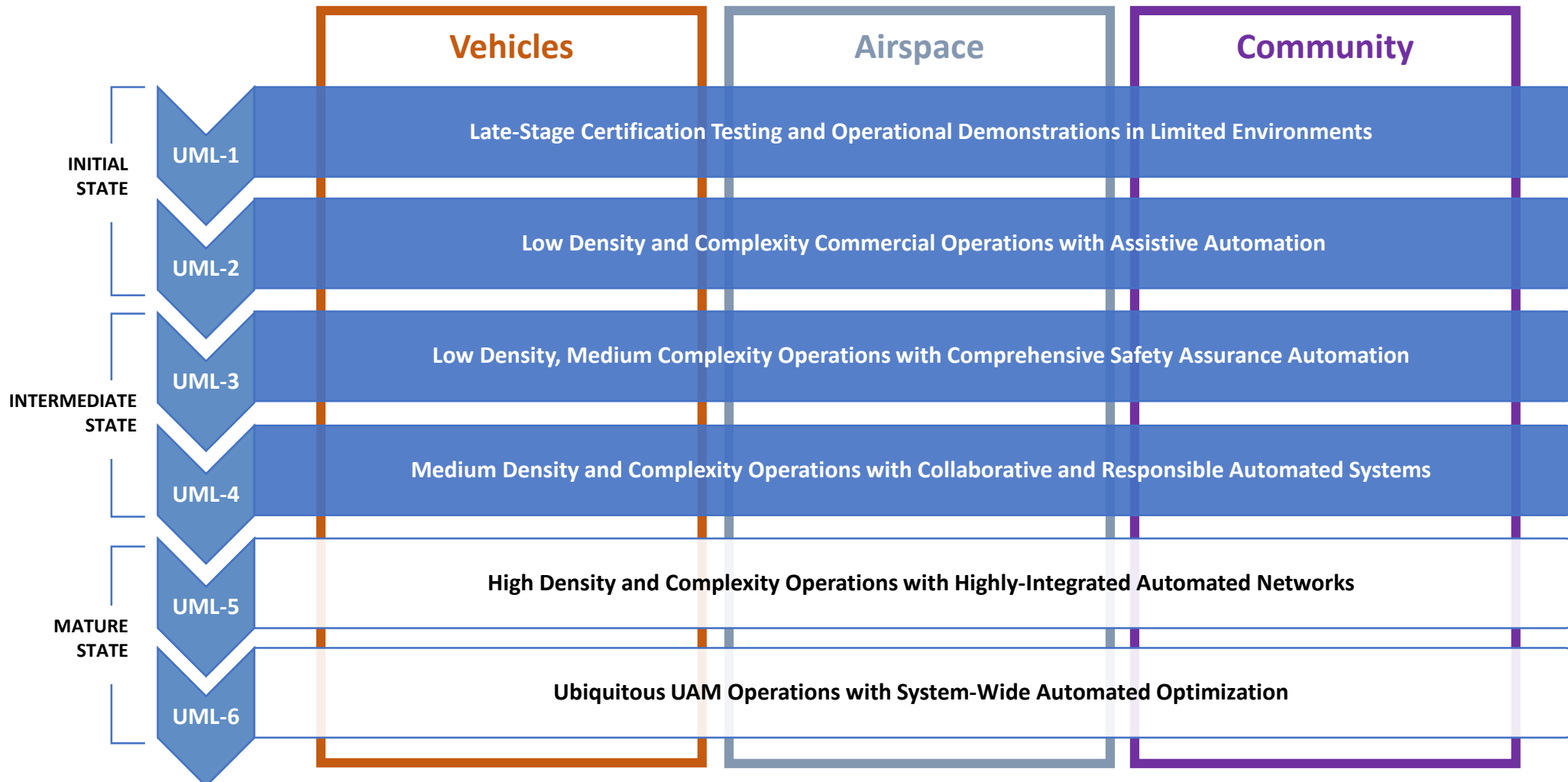
# UAM Vision & Framework



- Vehicle Barriers
- Airspace Barriers
- Community Integration Barriers
- # Pillar number



# UAM Maturity Levels (UMLs)



# Grand Challenge Series

**Purpose:** To develop a robust proving ground through operational and safety scenarios emphasizing near-term UMLs to accelerate the UAM market.

- Builds knowledge base for requirements and standards
- Results in a UML – 4 scaled urban demonstration





# Open Source Collaboration

NASA will rely on open source collaboration with the community to build out the following resources:

- **Book of Requirements**

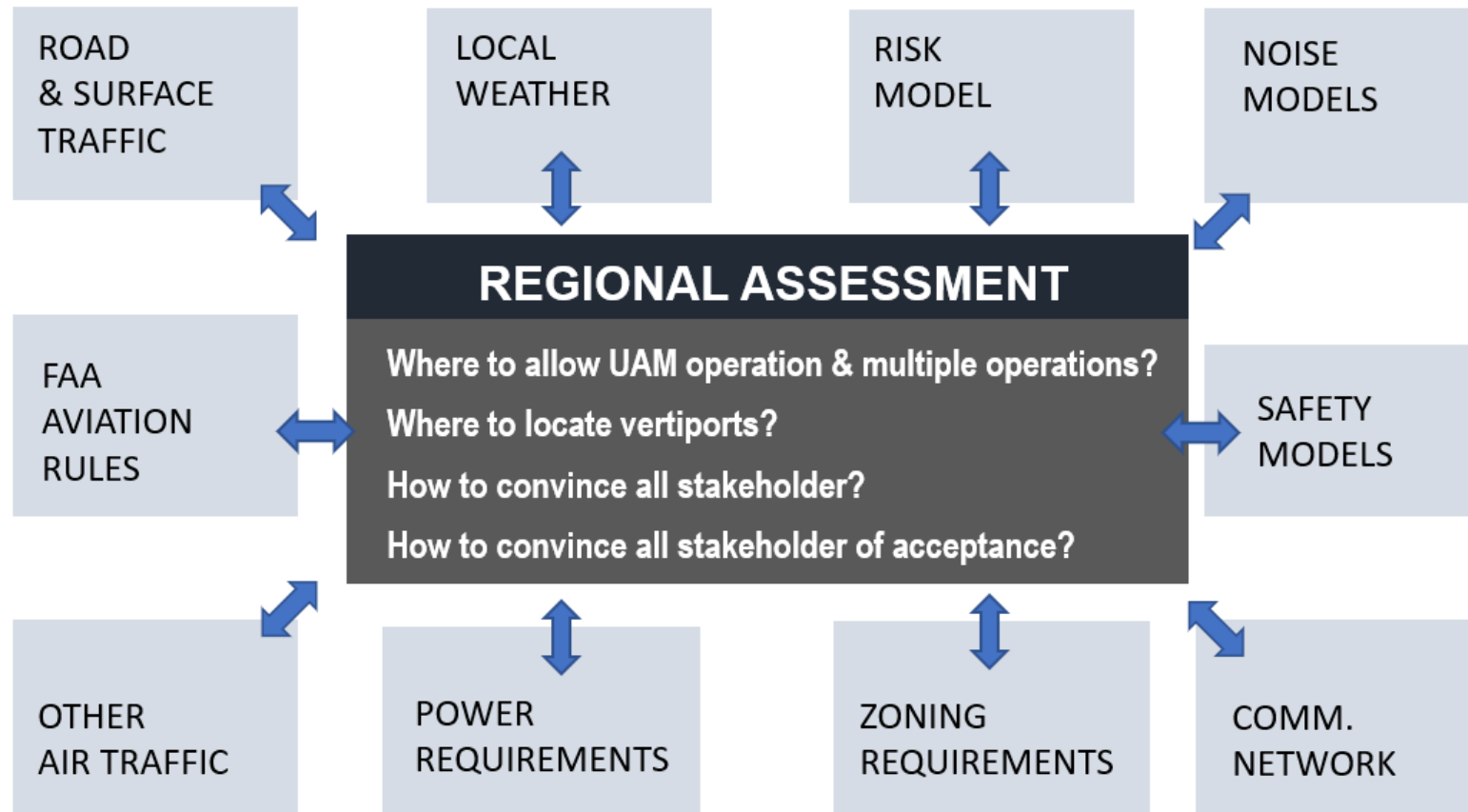
- Provide requirements, recommended practices, standards, regulatory guidance, accepted metrics and other information helpful for achieving UAM

- **Ecosystem Scorecard**

- Measures industry performance against UAM milestones

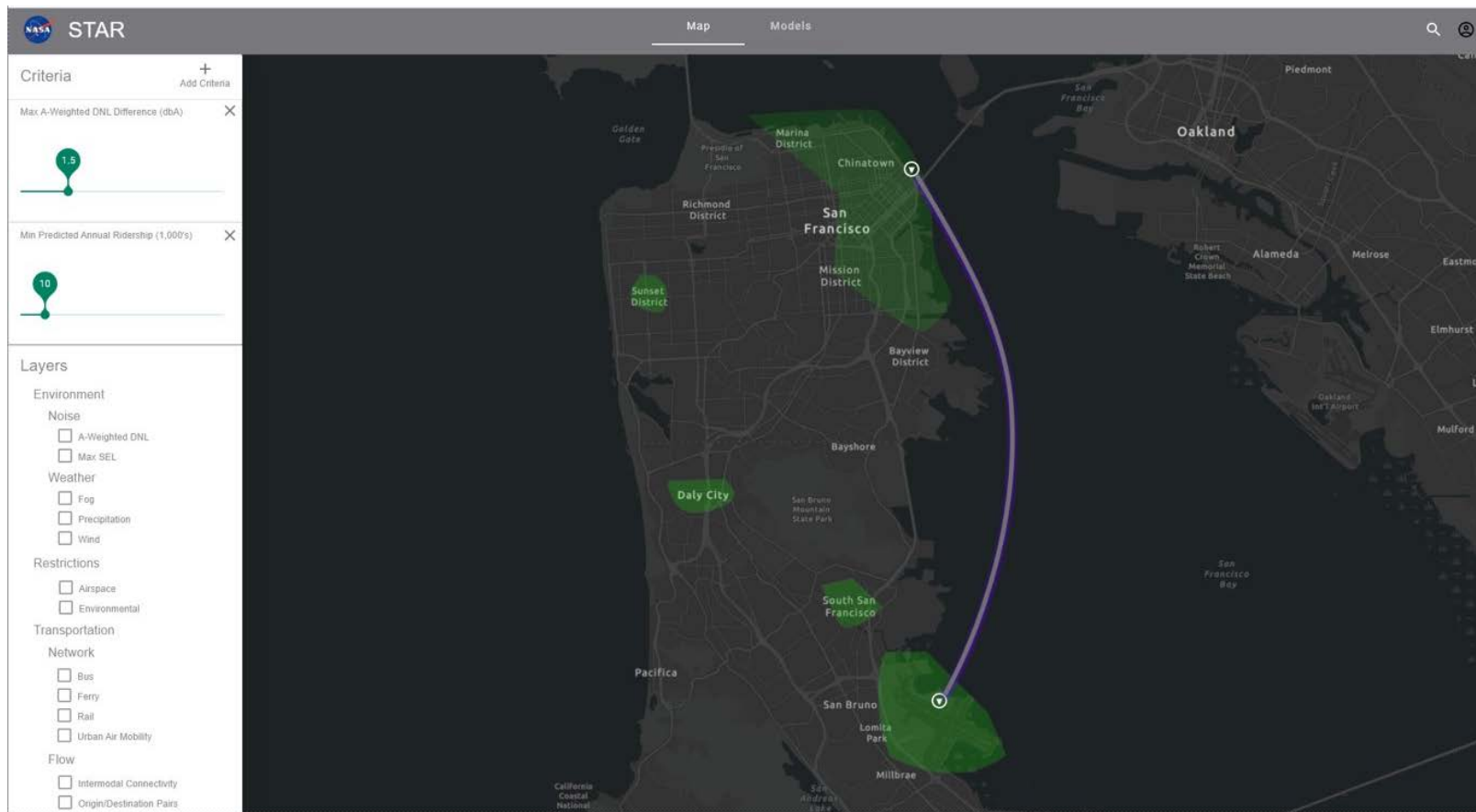
# Regional Modeling & Simulation

Regional authorities lack the tools to make decisions regarding UAM implementation and operationalization.

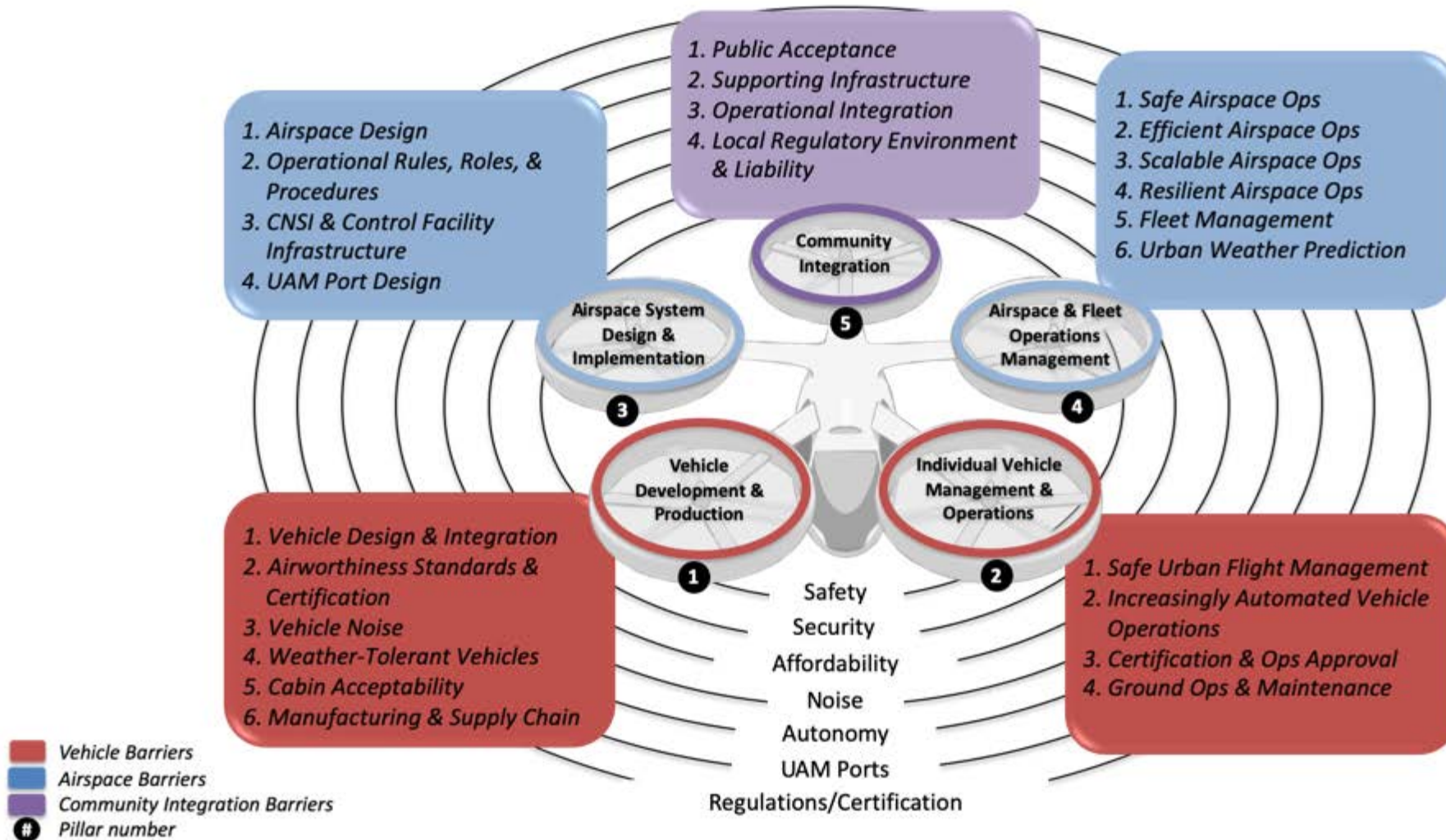


# Regional Modeling & Simulation

NASA is developing a modeling and simulation tool for regional authorities and state Department of Transportation aviation departments.



# UAM Barriers





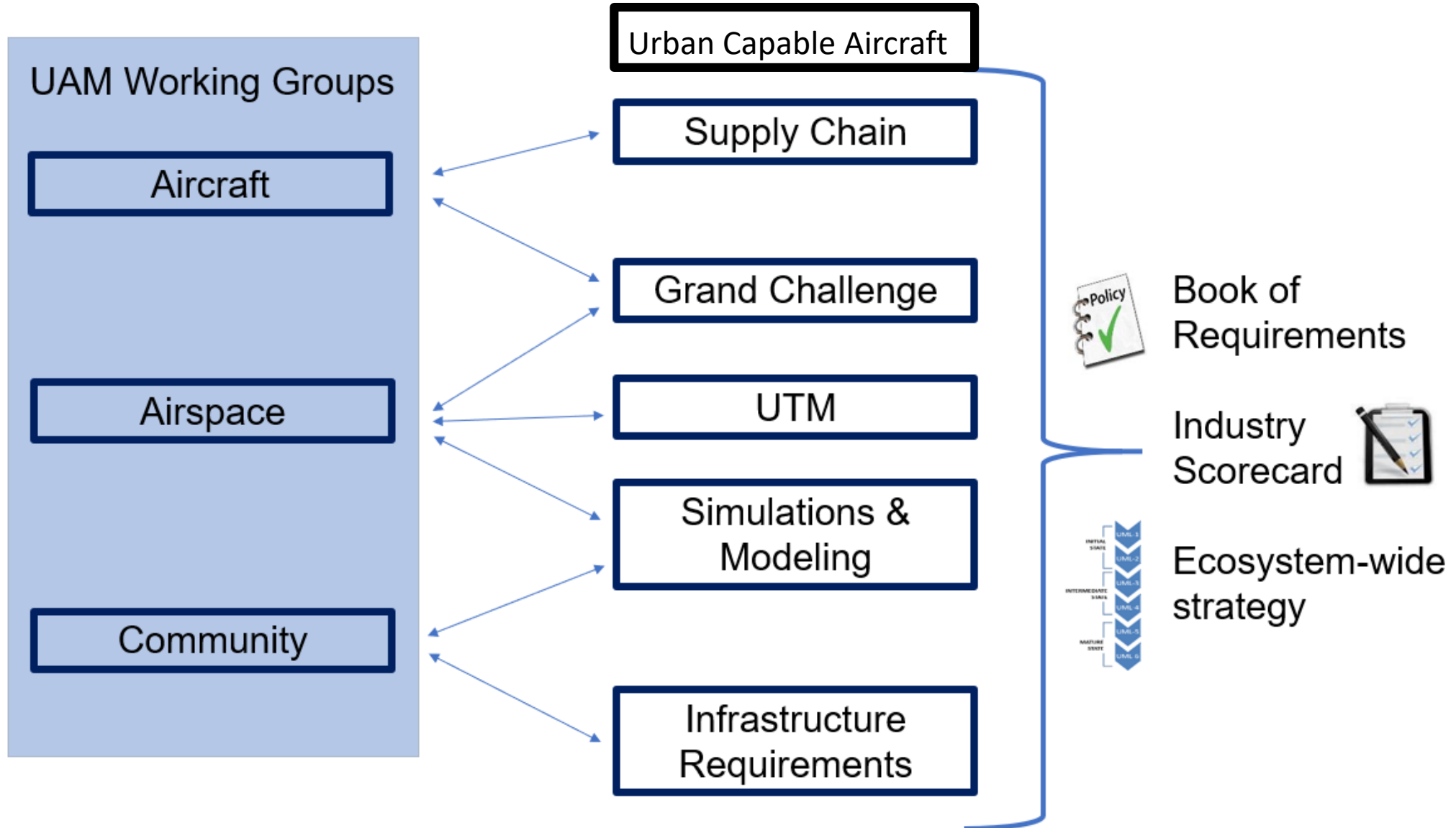
# Building the Ecosystem

Scalability is a fundamental need for UAM

- More licensed pilots (or acceptable and reliable autonomy)
- Spectrum availability
- Airspace operations (e.g. Unmanned Aircraft System Traffic Management type construct)
- Acceptable noise
- Mass production of electric or hybrid VTOLS
- Infrastructure (including recharging stations)



# Collaborative Innovation



# What to expect next?

- Supply chain and manufacturing workshop Feb 4-5
- NASA-FAA coordinated meeting on Feb 6-7 focused on airspace concept of operations for near term use cases
- NASA's concept of operations Deloitte arranged meeting Feb 12-12, LA
- NASA's working group for aircraft, airspace, and infrastructure
- Grand Challenge series
- Many regional initiatives
- Support development of requirements for aircraft, airspace, and community – community of practice

# Questions

