

LM Global Vision Center, Arlington VA

March 8 & 9 2016



On-Demand Mobility (ODM) Emerging Technology Strategy

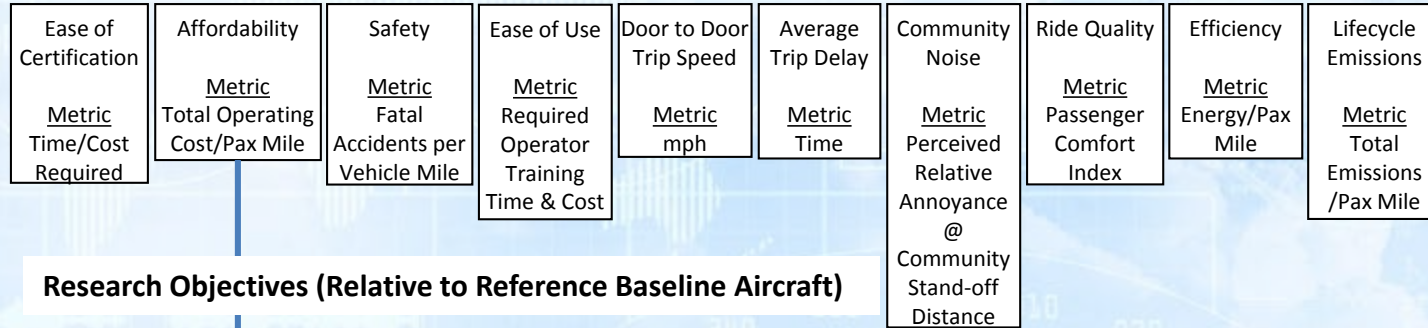
*Convergence across several technology frontiers
is providing the opportunity to achieve transformative small aircraft capabilities
that could enable new aviation markets through rapid technology adoption
while establishing early certification for application to widespread aviation market use.*

Mark Moore
NASA Langley Research Center
ODM Planning Lead / SCEPTOR Principal Investigator

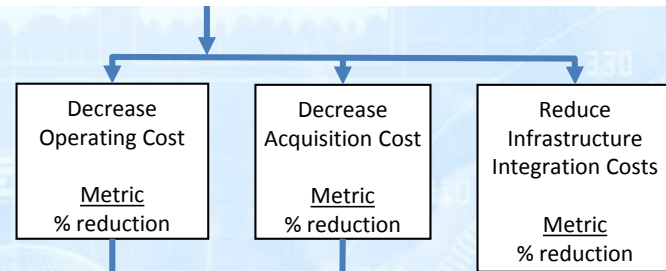
Overcome Feasibility Barriers with New Technologies



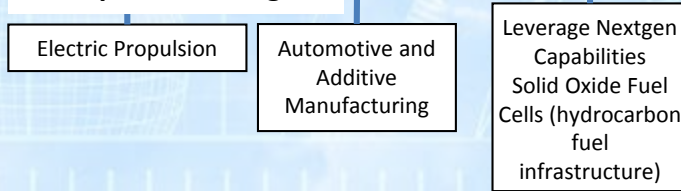
Feasibility Barrier Goals



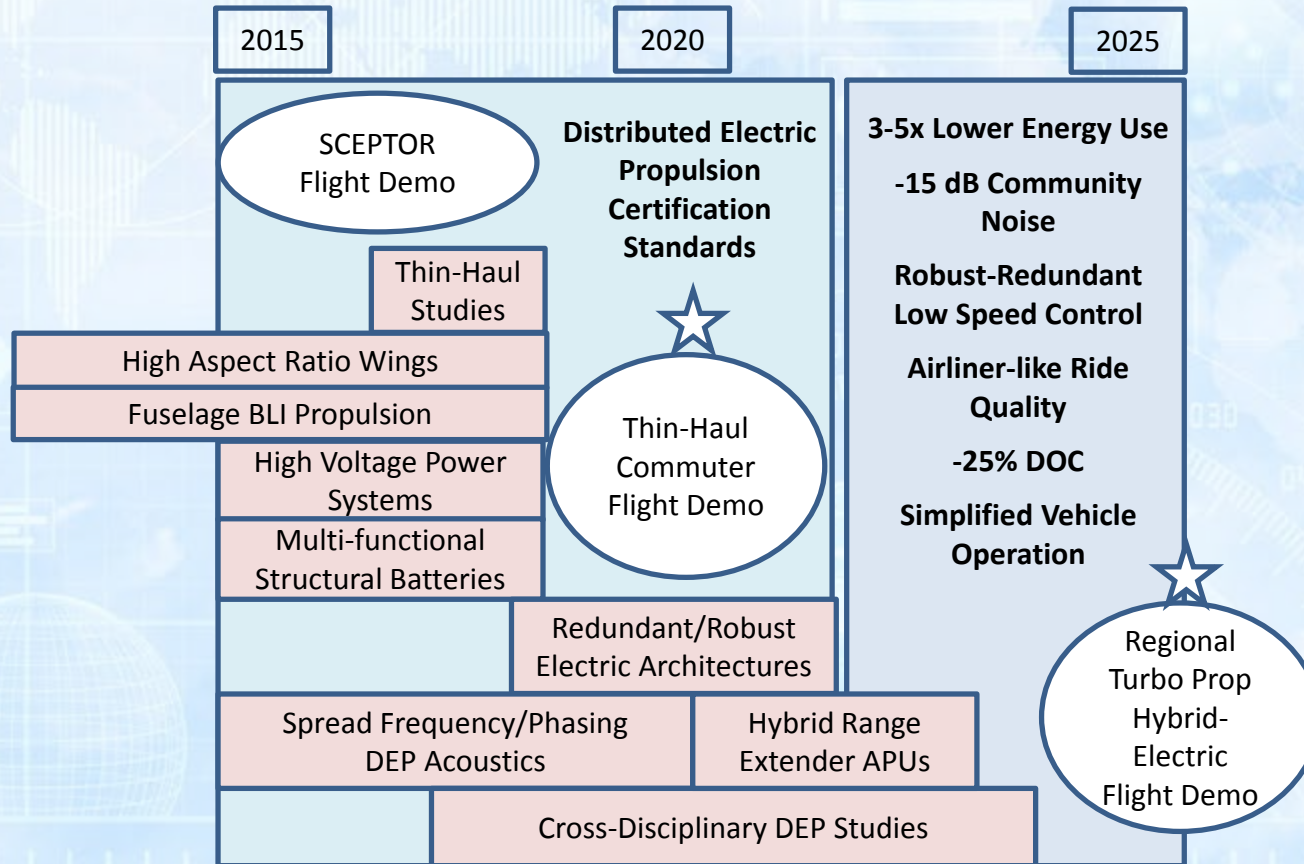
Research Objectives (Relative to Reference Baseline Aircraft)



Example Technologies



Technology Roadmaps with Early Certification/Adoption



Apply Technologies Across Diverse Aviation Markets



Reference CTOL Mission: Thin-Haul CTOL Commuters



Scale-down Mission: Advanced General Aviation CTOL Aircraft

Scale-up Mission: Regional Commercial Airliner

Reference VTOL Mission: Urban VTOL Air-Taxi's



Scale-down Mission: Package Delivery VTOL sUAS

Scale-up Mission: Urban VTOL Buses

Emerging Technology Capabilities and Market Adoption Path



Simplified Vehicle Operations

- Instead of a user base of 40,000 or 600,000 pilots; 40 to 60 million potential users
- Safety equivalency to automobiles

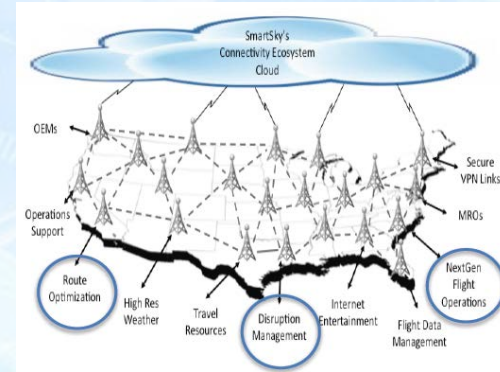


Electric Propulsion and Configuration Integration

- High speed cruise efficiency in near-term with 200 to 400 mile range
- Operating costs 20%+ lower, carbon emissions 5x lower, highly redundant reliable propulsion

Airspace Integration

- Digital/voiceless navigation communications
- Connected aircraft with 4g omnipresent networks



Manufacturing, Integrated Structures and Community Impact

- Low cost, high quality products at low production volumes
- Ultra-low community noise at close proximity with failsafe recovery modes

