2nd NASA-FAA
On-Demand Mobility and
Emerging Aviation Technologies
Roadmapping Workshop

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ODM Provides an Early Entry Point for Certification of Human Rated Aviation Technology

• Higher risk tolerance, operational, & safety benefits with smaller aircraft
  - FAA CFR 14 Parts 23 and 135 less restrictive than 25 and 121
  - ASTM F44 provides industry consensus standards that increases flexibility
• Technology can be developed at lower costs and faster life-cycles with early certification and early adoption to prove statistical safety
• Once proven, technologies scale up & down to other aviation markets
First workshop established initial ODM goals, technology work groups, and reference missions; started the dialog of where ODM opportunities exist.

### Technology Workgroups
- Electric Propulsion and Configuration Integration
- Airspace Integration
- Simplified Vehicle Operations
- Manufacturing, Integrated Structures and Community Impact

### Reference Missions
- Urban Air-Taxi (Vertical Takeoff and Landing)
- Thin-Haul (Conventional Takeoff and Landing)
- Scale-Up and Scale-Down Missions Defined

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<th>Metric</th>
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<tr>
<td>Ease of Certification</td>
<td>Affordability</td>
<td>Safety</td>
<td>Ease of Use</td>
<td>Door to Door Trip Speed</td>
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<td>Metric Time/Cost Required</td>
<td>Metric Total Operating Cost/Pax Mile</td>
<td>Metric Fatal Accidents per Vehicle Mile</td>
<td>Metric Required Operator Training Time &amp; Cost</td>
<td>Metric mph</td>
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<td>Average Trip Delay</td>
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<td>Community Noise Perceived Relative Annoyance @ Community Stand-off Distance</td>
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<td>Ride Quality Metric Passenger Comfort Index</td>
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<td>Efficiency Metric Energy/Pax Mile</td>
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<td>Lifecycle Emissions Metric Total Emissions /Pax Mile</td>
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First workshop had attendance of ~80 attendees, with a small amount of international participants.

This second workshop has ~170 attendees, with 20 international participants.

Research Organization Perspectives
- Representation from all NASA Aeronautics Centers (Langley, Glenn, Ames, and Armstrong) to understand current and potential technology research areas.
- Representation from (2) DARPA programs focused on advanced manufacturing
- Representation from international research organizations, including (3) EU projects, Korean Aerospace Research Institute (KARI), and Japan Aerospace Exploration Agency (JAXA).

Certification of Advanced Technologies Perspectives
- Representation from FAA Small Airplane, Engine, and Rotorcraft Directorates as well as Fatigue and Damage Tolerance Chief Scientist.
- Representation from EASA relating to Electric Propulsion Certification.

Significant participation across industry and academia.