

WELCOME TO THE TRANSFORMATIVE VERTICAL FLIGHT CONCEPTS THIRD JOINT WORKSHOP

SAE 2016 AEROSPACE SYSTEMS AND TECHNOLOGY AND
AIAA 2016 INTERNATIONAL POWERED LIFT CONFERENCE

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Third Annual Transformative Vertical Flight (TVF) Workshop Outline

History

Objectives

Approach

Desired Outcome

TVF Workshops' History

First TVF Workshop held in Washington, DC, August of 2014

- Identified the existence of a multi-disciplined community interested in this topic
- Established participants' consensus that further collaborations were warranted

Second Workshop held at NASA Ames, August of 2015

- Workshop focused on four desired action-oriented outcomes
 - **Establish and document common stakeholder needs and potential collaborations including concepts and emerging technologies**
 - **Assemble a community that can collaborate on new conceptual designs/tools for novel configurations with greater multi-disciplinary coupling (e.g. aero-propulsive-control)**
 - **Foster a community to help develop and deploy regulatory guidelines**
 - **Develop and disseminate information to ensure key U.S. Government agencies understand the potential benefits, and industry interest in establishing, new transformative and Vertiport capable flight markets**
- Primary objectives:
 - **Inform participants about developments in transformative flight design configurations, operational concepts, technology, market opportunities, and regulatory environment**
 - **Engage the group in developing inputs for a preliminary roadmap that will aid in the advocacy and pursuit of emerging technologies and approaches**

Third TVF Workshop Objectives

Third TVF Workshop, Hartford, CT, September 2016

- Continue to build and strengthen the TVF Community of Interest
 - **Inform participants about select recent TVF related activities**
 - **Facilitate frank and open exchange of ideas**
 - **Promote networking**
 - **Share opinions and perspectives**
- Further develop and refine TVF Roadmap
 - **Build on the Second TVF Workshop's accomplishments**
 - **Identify additional Roadmap content and temporal relationships**
 - **Set the stage for creating targeted roadmap element working groups**
 - + Small focused groups with frequent virtual collaborations

Approach

Review progress of related planning and technology development activities

- NASA On Demand Mobility (ODM) Roadmap development
- Second Annual TVF Workshop review
- Key Industry planning and development activities presentations

Participants contribute to TVF roadmap content development

- Four 30-minute Breakout Sessions
 - **One for each roadmap primary element (swim lanes)**
 - + Missions/Operational Concepts (Moore/Vascik)
 - + Prioritized Technical Challenges (German/Goodrich)
 - + Regulatory Roadmap (Gunnarson)
 - + Market/Business Opportunities (Duffy/Fredericks)
 - **Two sessions will run concurrently with participants switching after 30-minutes**
 - + Group 1 (A – J), Group 2 (K – Z)
 - **All attendees will have an opportunity to participate in all sessions**
- Participants will assess and suggest roadmap modification in realtime
 - **Start with Notional roadmap posted on wall with adjustable activities (stickies)**
 - + Opinions/perspective expressed by adding-modifying-removing-repositioning activities
 - + Stimulate dialog
 - + Seek consensus, but okay to identify and document disagreements

Continue to engage the TVF Community

- Building and strengthening the TVF community collaborations

Consensus view of the way ahead

- Gather sufficient information to create a creditable advocacy
 - **Roadmap that provides a sense of direction**
 - **Document opinions and perspectives**
 - **Understand and respect dissenting views**

Identify, organize and initiate focused working groups

- Recruit group leads and membership

A valuable experience

- Participants feel their time was well spent
 - **Develop a greater understanding of TVF challenges and issues**
 - **New colleagues and friends**