

Tuesday Morning Plenary: Needs for Future Autonomous VTOL Aircraft - Session Chair Ram JankiRam, Boeing Co.				
0	8:00 - 8:15 am	Dr. Ram JanakiRam	The Boeing Company	Welcome
1	8:15 - 8:30 am	Dr. Bill Lewis	US Army Aviation Development Directorate	Autonomy for Next Generation VTOL Systems
2	8:30 - 9:00 am	Mike Hirschberg	Vertical Flight Society	The Electric VTOL Revolution
3	9:00 - 9:30 am	Mark Jordan	Boeing Autonomous Systems	Boeing's Autonomous Systems Portfolio
4	9:30 - 10:00 am	LTC Mike Osmon	US Army Aviation Development Directorate	Army VTOL UAS Development Efforts
BREAK (10 am - 10:30 am)				
5	10:30 - 11:00 am	Dr. Robert Ernst	NAVAIR PMA-266	Agility, Cyber and Emerging Technologies for Naval UAS
6	11:00 - 11:30 am	Dr. Colin Theodore	NASA Ames Research Center	NASA Manned and Unmanned VTOL Initiatives
7	11:30 am - noon	Mark Moore	Uber Technologies	Needs for the Uber Elevate Ecosystem
LUNCH (12 pm - 1:30 pm)				
Tuesday Afternoon: UAV Design, Analysis and Testing I - Session Chair Dave Mittleider (Boeing Co.)				
1	1:30 - 2:00 pm	Seongwook Choi	Korea Aerospace Research Institute (KARI)	Development of the Quad Tilt Prop UAV
2	2:00 - 2:30 pm	Adam Kellen, Joel White and Moble Benedict	Texas A&M University	Development of UAV-Scale Cyclocopter
3	2:30 - 3:00 pm	Philipp Stahl, Christian Rößler and Mirko Hornung	Technical University of Munich	Configuration Redesign & Prototype Flight Testing of an Unmanned Fixed-Wing eVTOL Aircraft with Under-Fuselage Hover Lift & Pusher Wingtip Propulsion System
4	3:00 - 3:30 pm	Robin Preator	The Boeing Company	NexGen UAS Take-off and Landing Methods and Sizing Studies
BREAK (3:30 - 4:00 pm)				
5	4:00 - 4:30 pm	Todd R. Quackenbush, Daniel A. Wachspress, Glen R. Whitehouse and Michael K. Yu	Continuum Dynamics, Inc.	Analysis Methods for Tilting Wing and Tailsitter E-VTOL Configurations
6	4:30 - 5:00 pm	Thomas Seren and Mirko Hornung	Technical University of Munich	Comparative eVTOL UAV Design Optimization
7	5:00 - 5:30 pm	Scott Swinsick, Hendrik Gideonse, Keith Meeker and Mark Clemente	The Boeing Company	NexGen UAS in the Counter Integrated Air Defense Environment

Wednesday Morning: UAV Design, Analysis and Testing II - Session Chair Hieu Ngo (Boeing Co.)			
1	8:00 - 8:30 am	Kevin Webb, Jared Elinger and Jonathan Rogers	Georgia Institute of Technology Precision Docking for Multi-UAV Cooperative Transportation
2	8:30 - 9:00 am	Bernard Ferrier, Dr. Robert Ernst and Ajay Sehgal	Naval Air Systems Command Resolving the conflict between ship design and UAV Launch and Recovery deck limits; the development of enhanced dynamic interface study tests
3	9:00 - 9:30 am	Justin Littell	NASA Langley Research Center Challenges for Vehicle and Occupant Safety in Autonomous electric Vertical Take-off and Landing (eVTOL) Vehicle Crashworthiness
4	9:30 - 10:00 am	Robert McKillip, Jr.	Continuum Dynamics, Inc. Algorithmic Icing Detection for On-Demand Electric Aircraft
BREAK (10 am - 10:30 am)			
5	10:30 - 11:00 am	Sebastian Oberschwendtner, Christian Rößler and Mirko Hornung	Technical University of Munich Multi Objective Optimization of Wiring Harnesses for Overall System Performance of Electric Fixed Wing VTOL UAVs
6	11:00 - 11:30 am	Oved Zucker	POLARIX Corporation New architectures for VTOL all -electric craft using enhanced specific power electric motor
7	11:30 am - noon	Andrew Vechart and Jacek Kawecki	Sentient Science and Uber Technologies Fleetwide Integrated Prognostics Health Management for Emerging eVTOL Operations
LUNCH (12 pm - 1:30 pm)			
Wednesday Afternoon: UAV Aerodynamics and Noise - Session Chair Robin Preator (Boeing Co.)			
1	1:30 - 2:00 pm	Moritz Thiele & Mirko Hornung	Technical University of Munich Aerodynamic Modelling of Coaxial Counter-Rotating UAV Propellers
2	2:00 - 2:30 pm	Budhyant Venepalli and D. Stefan Dancila	University of Texas at Arlington Scaling Investigation of Electric Quasi-Quadrotor Hover Endurance
3	2:30 - 3:00 pm	Karan Jain, Trey Fortmuller and Mark W. Mueller	UC Berkeley Empirical Study of Aerodynamic Interference for Mid-air Docking Strategies for Multirotors
4	3:00 - 3:30 pm	Xuan Yang and Moble Benedict	Texas A&M University CFD-CSD Coupled Aeroelastic Analysis of a Highly Flexible Flapping Wing in Hover
BREAK (3:30 - 4:00 pm)			
5	4:00 - 4:30 pm	Bernadine Passe and James Baeder	University of Maryland Computational Aeroacoustics of Different Propeller Configurations for e VTOL Applications
6	4:30 - 5:00 pm	David Josephson	Josephson Engineering Developing Noise Metrics for Urban VTOL Aircraft
7	5:00 - 5:30 pm	Peter Ryseck, Vikram Hrishikeshavan, Derrick Yeo and Inderjit Chopra	University of Maryland Mechanical Design and Aerodynamic Investigation of Morphing Winglet for a Quadrotor Biplane Tail-sitter

Thursday Morning: UAV Controls, Flight Dynamics and Navigation I - Session Chair Jason Graham (Boeing Co.)			
1	8:00 - 8:30 am	William Craig and J.T. Lewis	University of Maryland Stabilization of a quadrotor in wind with flow sensing: Linear modeling and control for attitude and position hold
2	8:30 - 9:00 am	Farhan Gandhi, Ariel Walter, Michael McKay and Robert Niemiec	Rensselaer Polytechnic Institute An Assessment of Heave Response Dynamics for Electrically Driven Rotors of Increasing Diameter
3	9:00 - 9:30 am	Chad Goerzen	USARMY RDECOM AMRDEC Kinematic Velocity Commander for Obstacle Field Navigation
4	9:30 - 10:00 am	Saguftha Kapadia and Syed Misbahuddin	Vaughn College of Aeronautics and Technology Position Control of an Autonomous Unmanned Aerial Vehicle (UAV) Based on Accelerometer Response for Indoor Navigation
BREAK (10 am - 10:30 am)			
5	10:30 - 11:00 am	Mark J. S. Lopez, Mark B. Tischler, Ondrej Juhasz, Anthony Gong, Frank C. Sanders and Alexander M. G. Walan	US Army Aviation Development Directorate; San Jose State University; and DARPA Development of a Reconfigurable Multicopter Flight Dynamics Model from Flight Data Using System Identification
6	11:00 - 11:30 am	Kara Gremillion	ANSYS, Inc. A Comprehensive Simulation Framework to Certify Autonomous eVTOL Aircraft
7	11:30 am - noon	Elena Shrestha, Derrick Yeo, Vikram Hrishikeshavan and Inderjit Chopra	University of Maryland Improvements in Gust Tolerance of Cyclocopter UAV using Onboard Flow Sensing
LUNCH (12 pm - 1:00 pm) *Note: Lunch is 30 minutes shorter than on Tues/Wed			
Thursday Afternoon (pt 1): UAV Controls, Flight Dynamics and Navigation II - Session Chair Jason Graham (Boeing Co.)			
8	1:30 - 2:00 pm	Eric Solomon, Abhishek Shastry, Vikram Hrishikeshavan and Inderjit Chopra	University of Maryland Reinforcement Learning Control for Quadrotors using Snapdragon Flight
9	2:00 - 2:30 pm	Keith Sponsler and Srikanth Saripalli	Texas A&M University Horizon Estimation from Thermal Cameras for Unmanned Aerial Vehicles
#	2:30 - 3:00 pm	Ilya Semenov, Vikram Hrishikeshavan and Inderjit Chopra	University of Maryland Amphibious Quadcopter with Smooth Powered Air-Water Transition
BREAK (2:30 PM - 3:00 PM) *Note: Break is 60 mins earlier than on Tues/Wed			
Thursday Afternoon (pt 2): eVTOL and VTOL Design - Session Chair - Hieu Ngo (Boeing Co.)			
1	3:00 - 3:30 pm	Lawrence Zepp	Dura-Trac Motors, Inc. Disruptive Advance in P.M. Motor Technology Provides Higher Top Speed and Extended Range
2	3:30 - 4:00 pm	Satyavrat Laud and Phil Thibodeau	Renesas Electronics America and HSV Consulting IGBT Robustness Capabilities and Setting Appropriate Protection Thresholds in High Power Propulsion Inverters
3	4:00 - 4:30 pm	Bianca Schuchardt	DLR Institute of Flight Systems, German Aerospace Center Usability of a Steering Wheel Control Concept for Highly Augmented Personal Helicopter
4	4:30 - 5:00 pm	Gerardo Olivares, F. Caralt, and A. Vina	National Institute for Aviation Research and BRS Aerospace Integrated Occupant Safety of Urban Air Transport Emergency Landing Applications
5	5:00 - 5:30 pm	George Tian and Justin P. McKennon	NTS Lightning Technologies Complexities of Lightning Certification of VTOL Aircraft