

Unique and Transformational Flight Systems

Papers Presented at the AIAA Aviation Forum 2025 and
ASCEND 2025

Las Vegas, Nevada, USA
21-25 July 2025

ISBN: 979-8-3313-2811-5

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.



The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 34922 Uwytkug'Xcmg{'Ftkxg.'Uwky'422, Reston, VA 20191, USA.

TABLE OF CONTENTS

Development of a Means of Compliance Model to Support Model-Based Regulatory Analysis.....	1
<i>Evan Harrison, Adam Baker, Tharika Sundaram, Kader E. Aydin, Lauren V. Paulson, Mayank V. Bendarkar, Elena Garcia, Dimitri Mavris</i>	
Development of Land Use Compatibility Guidelines for Vertirports Through Synthesis of Safety, Noise, and Airflow Research	12
<i>David C. Ison</i>	
Transformer-Enabled Leg-Based Trajectory Generation for Autonomous Aircraft Near Airports.....	39
<i>Gage Maclin, Venanzio Cichella, Andrew Patterson, Irene M. Gregory</i>	
Uncovering New Opportunities for Ultra Short Takeoff and Landing Aircraft for Regional Air Mobility Services	47
<i>Mamoun Benchekroun, Cedric Y. Justin, Dimitri Mavris</i>	
Data-Driven Investigation of Re-Fleeting Scenarios for the 50-Seat Regional Aircraft Segment.....	81
<i>Cedric Y. Justin, Yasser Moumtaz, Dimitri Mavris, Daniel Percy</i>	
Numerical Investigation of Tandem Flapped Coflow Jet Wings at Cruise at Low Reynolds Numbers	100
<i>Jaehyoung Jeon, Anthony Diaz, Yan Ren, Gecheng Zha</i>	
Simulating System and Powerplant Dynamics of an e-VTOL Aircraft for a Full Flight Mission Including Transition.....	122
<i>Nirmit Prabhakar, Francesco Salucci, Dominik Karbowski</i>	
Business Aviation Turbofan Efficiency Improvement by Electrical Assistance During Transient Operations	141
<i>Jacob Cadrin-Aubin, Mathieu Bouchard, David Rancourt</i>	
Development of a Combustor for Integration with a Solid Oxide Fuel Cell Bundle for Hybrid-Electric Aircraft Power Applications	155
<i>Ethan C. Pesterfield, Alex B. Tharpe, David Schafer, Griffin J. Layhew, Christopher J. Roberson, Trevor J. Kramer, Rory A. Roberts</i>	

Author Index