

Title: "Advancing Electric Propulsion Aircraft Evaluation for Urban Air Mobility: Insights from NASA-Ames"

Abstract:

This presentation delves into a recent evaluation conducted at NASA-Ames on the Vertical Motion Simulator, focusing on the handling qualities of Distributed Electric Propulsion VTOL (eVTOL) aircraft, specifically tailored for Urban Air Mobility (UAM) applications. The presentation will focus on the recent effort to adapt and refine use of the Aeronautical Design Standard -33 (ADS-33) rotorcraft handling qualities developed by the U.S. Army and NASA to meet the diverse needs of civilian (eVTOL) concept evaluation. A brief discussion of the author's personal test pilot insights in the early development of military Fly-By-Wire evaluation methods will also be provided.

The emergence of innovative eVTOL designs with unique lift capabilities and flight control systems, present both opportunities and challenges, particularly in ensuring safety amidst technological complexity. To navigate these challenges, our investigation examined evaluation criteria designed to accommodate the varied configurations and advanced automation systems inherent in modern eVTOL aircraft.

By establishing a standardized approach to evaluation, our research not only fosters innovation but also upholds safety standards in the dynamic landscape of urban air mobility. Through this endeavor, we help to facilitate the seamless integration of novel aircraft capabilities into new operations, contributing to a new era of safe and efficient aerial transportation.