Contribution ID: **64** Type: **Invited Oral**

C2Or2B-04: [Invited] The Development of a Liquid Hydrogen Test Capability for Aviation and Beyond as a US National Asset

Tuesday 20 May 2025 12:00 (15 minutes)

NASA has over 70 years of experience handling both gaseous and liquid hydrogen for space and aeronautical applications. As hydrogen comes back into the public sphere as a possible energy carrier, NASA can contribute in multiple ways to help US industry lead the way into these new ventures. Based on the results from workshops and discussions with US industry, academia, and other government agencies, one way for NASA to infuse their experience is through facilitating testing endeavors. Testing with hydrogen, especially liquid hydrogen, is an expensive endeavor requiring a specially trained workforce and significant infrastructure investments beyond the capability of many small and medium businesses. A multi-center NASA team is exploring the needs and requirements that might play into the development of a Liquid Hydrogen Test Area as a National capability supporting the implementation of new materials and technologies for aeronautical applications, allow the development of operational procedures for airport operations, and also support the needs for the development of technologies for other hydrogen transportation applications. These needs may include testing at a range of scales, from material development and component characterization to full sized aircraft.

This exploratory activity only gathers information to inform future plans; it offers no promise of future funding, or request for proposals for either execution or implementation of such a facility. However, the gathering of this information can be used to help NASA and others within the US Government understand how this might be best executed and the level of interest across the country for its implementation. As such, NASA has issued a Request for Information from US Industry and Academia and continues conversations with other US government agencies pursuing Hydrogen technology development, deployment, and commercialization.

Authors: JOHNSON, Wesley (NASA Glenn Research Center); Dr VIVOD, Stephanie (NASA GRC)

Co-authors: CHIN, Jeffery (NASA Glenn Research Facility); HEWSTON, Alan (NASA Glenn Research Facility); ADAMS, Earl (NASA Armstrong Flight Research Facility); TOMLINSON, Benjamin (NASA Armstrong Flight Research Facility); Dr MAZHARI, Alex (NASA Ames Research Center); Dr HUNTER, Gary (NASA Glenn Research Center); Dr LVOVICH, Vadim (NASA Glenn Research Center); MEYER, Mike; JAKUPCA, Ian (NASA Glenn Research Center); Dr MALAKOOTI, Sadeq (NASA Glenn Research Center); KOCI, David (NASA GRC)

Presenter: JOHNSON, Wesley (NASA Glenn Research Center)

Session Classification: C2Or2B - [Special Session] Liquid Hydrogen Testing for Aircraft