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Aeronautics and Astronautics

June 3, 2021

The Honorable Stephen Dickson
Administrator
Federal Aviation Administration

Dear Administrator Dickson:

Attached below please find the findings and recommendations from the Safety, Airports, Environment and Energy, Human Factors, NAS Operations subcommittees from their winter/spring meetings which have been reviewed and endorsed by the full REDAC.

The full REDAC also made several cross cutting observations during the meeting regarding the RE&D program at the recent virtual meeting on April 21, 2021.

Lessons Learned from COVID – As we emerge from the COVID pandemic we recommend a comprehensive review of the lessons learned from the experience and for this to inform research to support system resilience and operational continuity for future disruptive events be they biological, cyber or political.

Machine Learning and AI in Aviation – Several of the subcommittees noted the increased emergence of Machine Learning and AI (ML/AI) and anticipate these tools to be applied in aircraft and ATC systems. The FAA has unique requirements in its oversight role and there is research required to support the certification and operational approval of these systems and the impact on pilots, controllers and other operational personnel. In addition Machine Learning techniques are expected to be valuable in exploiting the vast pool of operational data to improve the safety and operational performance. The REDAC recommends that the FAA take a strategic approach to defining functionality and acceptable uses of AI/ML for its unique applications.

Sustainability – The committee noted the increased national focus on sustainability. The FAA is well positioned to contribute to this with a strong AEE research and solid partnerships with stakeholders. Pressure on aviation will increase as other energy users transfer to sustainable sources and we urge the FAA to take a leadership position in increasing the sustainability of aviation

We appreciate the opportunity to support the FAA in promoting the safety, efficiency and effectiveness of our national aviation infrastructure. I would be happy to meet to provide further insight on these observations or explore ways in which the REDAC can more effectively support you and the FAA mission.

Thanks for the opportunity to contribute.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. John Hansman", enclosed within a thin blue rectangular border.

R. John Hansman
Chair, FAA Research, Engineering and Development Advisory Committee

Enclosure