Panel Abstract

Panel Title: Airspace Operations: Vision for 2045 and beyond

Description:
We are seeing interesting changes in airspace operations. We are experiencing growth in global aviation for passenger and cargo travel. At the same time, drones of all sizes, urban air mobility, electric aircraft, commercial space transportation, supersonics, hypersonics, and increasingly autonomous vehicles will continue to mature. These operations along with current aviation will require access to airspace operations. Such access and scalability needs will only continue to increase in the future.   Given that systems and procedures that will enable and support the future density and diversity takes a considerable amount of time to build and harmonize across the globe, it is appropriate that research efforts to enable 2045 operations begin now. A perfect storm is brewing as a number of factors are coming together, including: anticipated growth in diversity and density; limitations of our current system to support the growth and diversity; lack of utilization of latest technologies in an increasingly digitized world to support air traffic management; and a long lead time to conduct research, develop requirements, and built and deploy air traffic management systems. All these factors indicate that now is the time to start thinking about the needs of 2045 and beyond. In a limited manner, Unmanned Aircraft System Traffic Management (UTM) has shown that new thinking and implementation paths for airspace operations is possible. The current system as it exists is based on many assumptions and limitations of technologies (e.g., radar, human-centered voice communications) which may not be true moving forward given the technologies around us are changing. The panel will discuss the following and related topics:

1. Expected growth in density, diversity, and needed scalability,
2. Likely requirements of air traffic management system to enable and support 2045 and beyond operations,
3. Assumptions related to air traffic management and operations that need to reevaluated based on technology trends,
4. Identification of research priorities and harmonization of research across the globe, and
5. Transition approaches from current air traffic operations to new vision 2045.

The panel discussion will be useful for global air traffic management researchers, managers, strategists, airspace users, air traffic management system developers and integrators, and academic researchers.