Air Traffic Control Modernization for Greater Safety and Efficiency

Issue:
Current air traffic control procedures used around the world are largely based on ground radar stations and voice-over-radio procedures developed over fifty years ago. Although this system has produced a stellar safety record over the years, it does not allow for the most fuel-efficient use of aircraft. Neither does it allow for the rapid growth of air traffic expected over the coming decades. Newer satellite-based systems such as NextGen (U.S.) and SESAR (Europe) promise tremendous improvements in fuel-efficiency and capacity growth.

Background:
ICAO (International Civil Aviation Organization), SESAR Joint Undertaking (SJU), the Federal Aviation Administration (FAA), and modernization efforts in other global regions such as China, Japan, and Australia are developing high-level requirements for implementation of NextGen, SESAR, CARATS, etc. in the global context. As such, new capabilities are being described for ground and airborne functions that will affect the roles of system automation and the humans in the operational environment. It is anticipated that there will be a need for "right sized" specifications to address more-detailed features of the technical and operational aspects of the SESAR and NextGen implementation. By building upon successful partnerships and coordinating activities with EUROCAE, RTCA, and other standards-developing organizations, duplication of effort should be avoided.

SAE International is facilitating an industry-wide steering group of subject matter experts to review air traffic management standards, both existing and under development, to identify any gaps and overlaps/duplication. This Steering Group will:

- Initially, provide a structure to assess current standards and standards-development activities and identify gaps and/or overlaps in standards being developed in support of the evolving air traffic management systems, subsystems, and platforms for airborne and ground systems
- Subsequently, assess current standards and standards-development activities to identify gaps and/or overlaps in those standards being developed in support of the broader air traffic management system to include policies, procedures, approvals, operations, platforms, and technologies related to the evolution of the future airspace
- Review the global perspectives to assess whether standards being developed are harmonized to support seamless global operations
- Pass their findings on to appropriate organizations, such as SAE International, for development of needed standards and training

Recommendations:
Government agencies should continue to work with SAE, aerospace organizations, and other standards developers worldwide to identify technical gaps in air traffic modernization plans, and then provide technical expertise for standards and training, where appropriate, as the planned improvements in air traffic management develop and are deployed.